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F) GAS CASUALTY KITS

The Japanese have developed a large number of gas casualty kits in sizes for small and large units. Noticeably lacking in the kits covered in these reports are the materials necessary for treatment of blood and nerve poisons and the retarding of white phosphorous burns (copper salt).

Most of the kits have well constructed carriers, however have a scrambled arrangement of items within. An obvious consideratio in design was to get as many items as possible in the carrier.

Some of the units, the large ones, were designed for permanent installation medical stations as the units are large and carry special instruments and medicines.

Instructions for use of the various medicines and chemicals are lacking in the majority of the kits limiting their use to qualified personnel. In other words the field size small units do not have the advantage of being real first aid kits.

The kits for use by the veterinary personnel for treatment of animal gas casualty are elaborate and complete. As has been shown in the development of other protective equipment much consideration was given to the care and protection of animals to be used by the military.

Small field kits seem to be designed mainly for blister gas casualty treatment.



502-KIT, GAS CASUALTY A, B, C,

General:

Color:	Tan
Markings:	Red Cross on white background sewed on flap.
Dimensions:	10" long, 9" wide, 4" high.
Weight:	4.5 lbs.

Description: The three kits are similar varying somewhat in contents. The container, identical in all three cases, is made of stiff composition material covered with cloth. A single flap on top fastens in front with a buckle. The kit can be worn on the belt or carried over the shoulder by a cloth strap. All breakables in the kit are wrapped in heavy crepe paper.

Contents:

Kit A:

Caustic Soda	1	bottle(100 gm)
Chloramine	1	bottle(40 gm)
Decontaminating powder (bleaching powder and zinc oxide)	1	bottle(50 gm)
"Menta-Saki" (stimulant)	1	bottle(200 cc)
Hypodermic Syringe (20 cc) and four needles	1	complete
Camphenal (camphor, phenol in alcoholic Solution)	2	boxes (10 ampoules each-1 cc)
Camphor in oil	1	box (10 ampoules- 1 cc)
Tincture of Iodine	3	bottles (4.5cc
Rubber tourniquet and metal fitting	1	complete
Scissors	1	each
Red and white band	5	feet
Adhesive tape	1	roll

Kit B:

Chloramine	1	bottle (40 gm)
Decontaminating powder (bleaching powder and zinc oxide)	1	bottle (50 gm)
Menta Saki (stimulant)	1	bottle (200 cc
Camphenal	2	boxes (10 ampoules each-1cc
Camphor in oil	1	box(10 ampoule 1 cc)

[redacted]

Kit B (Cont.)

"Mohi"	1 box (10 ampoules-1 cc)
Methylene blue	1 box (2 ampoules-20 cc)
Tincture of iodine	10 bottles (4.5cc)
Adhesive tape	2 rolls

Kit C;

Hypodermic Syringe (20cc) and 4 needles (aluminum container)	1 Complete
Hypodermic Syringe (2 cc) and 4 needles	1 complete
Camphenol	2 boxes (10 ampoules each-1cc)
Camphor oil	1 box (5 ampoules-1 cc)
"Mohi"	1 box (10 ampoules-1 cc)
Methylene blue	1 box (2 ampoules-20 cc)
Sodium hyposulphite	1 box (2 ampoules-20 cc)
Sodium nitrate	1 ampoule (20cc)
Assorted tablets	1 box
Stomach tablets	5 packs (10 tablets each)
Aspirin	5 packs (10 tablets each)
Bismuth subnitrate	3 packs (10 tablets each)
Corrosive sublimate	1 bottle
Opium tablets	1 pack (10 tablets)
Quinine sulphate	2 bottles
Catheter	2 packed in tin can
Adhesive tape	2 rolls

Remarks: Only one of the kits is shown in the photograph, since all three are identical in appearance.

[redacted]



502-KIT, GAS CASUALTY A, B, C,

[redacted]

503-KIT, GAS CASUALTY, BATTALION

General:

Color-	Khaki
Markings-	Red crosses, Japanese characters, on top and sides; miscelleneous labels on insides and on individual packages.
Components-	Wicker case containing Gas Casualty Remedies.
Dimensions-	20 inches long, 14 inches wide, 16 inches high
Weight-	56 3/4 pounds (incomplete)

Description: The case is of wicker material covered with a light canvas on the outside and lined with white cotton fabric. It is made in two parts which can be made into two separate units. The two are tied together and two heavy fabric straps are provided to make it more compact as a single unit. Each part has a leather handle.

The contents were packed in something like excelcior. A list on the flaps of each section indicates the contents of that side.

UNIT GAS MEDICAL PANNIER

Gas A

Articles	Quantity	
* 1. Ringer's Solution	1	ea
2. Benzine	300	g
* 3. Ringer's Solution	1	ea
4. Gulcose	20	ea
* 5. Caffeine Sodium Benzoate	10	ea
* 6. Strong Novecaine Solution	10	ea
* 7. Chloramine Tablet	150	ea
* 8. Pavinal Atropin Solution	10	ea
* 9. Betacamphor Solution	50	ea
10. Sterilized Quining Solution (Pagnon,etc.)	50	ea
*11. Lobel in Solution	10	ea
*12. Anti-Sneezing Solution	20	ea
13. Sterilized Distilled Water	5	ea
*14. Eye-Washing Cup	10	ea
15. Short-Sight Eyeglass	5	ea
*16. Sprayer	1	ea
*17. Eyeshield	10	ea
18. Bosom-Warmer	5	sets
19. Gas Gangrine Vaccine	40	ea
20. Glass Bottle	4	ea
*21. Strong Bleaching Powder	450	g
22. Medical Charcoal	100	g
*23. Zinc Oxide	100	g

[redacted]

UNIT GAS MEDICAL PANNIER cont'd
Gas A

Articles	Quantity
24. Ferric Hydroxide Ointment	100 g
25. Sodium Bicarbonate Tablet	100 ea
26. Secondary Pneumonia Preventive	100 g
27. Titration Bottle	1 ea
*28. Syringe	1 ea
*29. Codeine Tablet (Codeine Phosphate)	50 ea
30. "Neridol" Ointment	100 g
*31. Veronal Tablet	50 ea
*32. Caustic Soda	25 g
*33. Alkaline Ophthalmic Ointment	40 g
*34. Cod Liver Ointment	200 g

UNIT GAS MEDICAL PANNIER
Gas B

Articles	Number
1. Flash-Light	2 each
2. Eye-Lotion Ampoule	1 set
* 3. Gauze	50 each
4. Solid Fuel	100 each
5. Bandage, Mark 1	20 roll
6. Cotton Cloth	2 roll
7. Rubber Tube	1 meter
8. Rubber Cloth	1 sheet
9. Rubber Glove	5 pair
10. Triangle Gauze (Bandage)	50 each
11. Bosom-Warmer	5 set
*12. Zinc Oxide Adhesive Tape	5 roll
13. Mask	50 each
14. Cellophane	20 sheet
15 Decontaminating Tube	1 set

* Astrick indicates that item was not in sample kit. In addition to those listed, seven other items were found with the kit. They are; Horse, Anti-Tetanus Serum, Sodium Nitrite, Yellow Vaseline, Methylene Blue, Lime Water Mixed with Flaxseed Oil, Glass Plate, and Applicator.

Translations: Markings on outsides in Japanese:
"Unit Gas Medical Pannier."

[redacted] 8



503-KIT, G.S. CASUALTY, BATTALION

[redacted]

515-KIT, GAS CASUALTY, EXPERIMENTAL TYPE

General:

Color:	Brown
Markings:	Japanese Characters giving nomenclature.
Dimensions:	12" long, 6-3/4" wide, 10" high.
Weight:	10.9 lbs. (partly filled).

Description: The kit is divided into three main divisions: The tray in top and two drawers. The tray is divided into 17 compartments. The translation of the label inside the lid gave the following information:

Contents of the First Aid Kit:

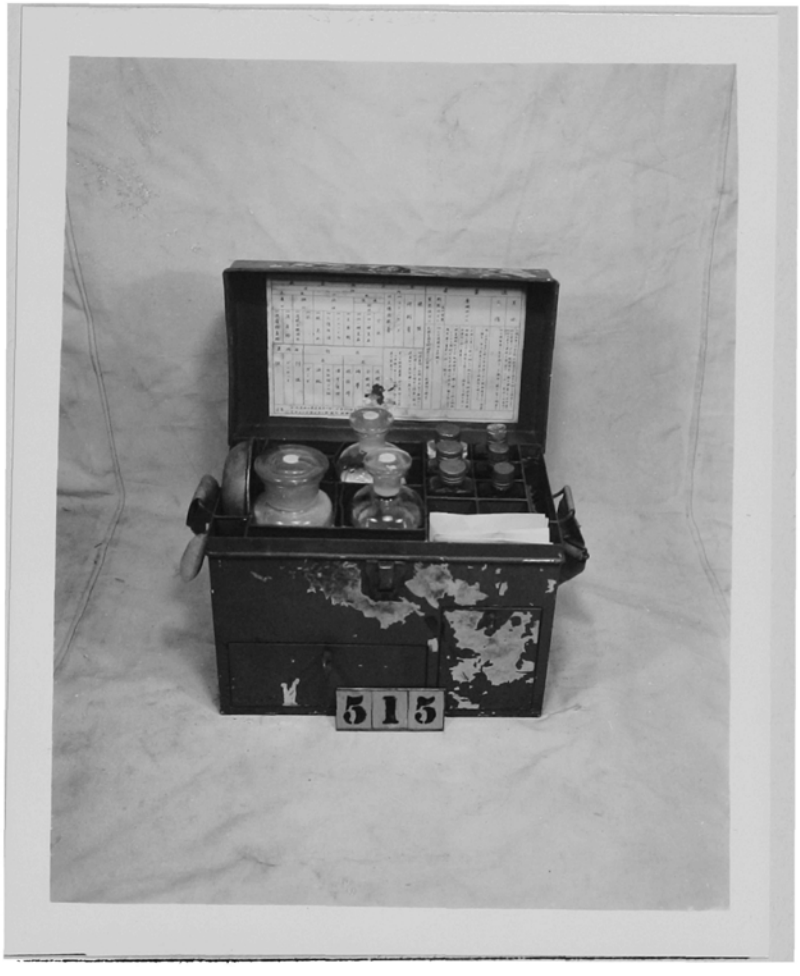
Large bottle, wide mouth	No 1 - Skin Decontaminator
" " , " "	No 2 - Decontaminating Powd
" " , narrow mouth	No 3 - Solution for Eye-wash and Gargling.
Large bottle, narrow mouth	No 4 - Water
Small bottle, Liquid	No 5 - Decolorizing Solutio
" " , "	No 6 - Oil for Burns
" " , "	No 7 - Alcohol
" " , "	No 8 - Stimulatant
Small bottle, solid	No 9 - Extra agent for eye-wash etc.
" " , "	No 10 - Extra agent for decolorizing solution
" " , "	No 11 - Ointment for burns
" " , "	No 12 - Tincture of Iodine.

These 12 bottles occupy 12 of the 17 compartments. A pus plate and adhesive tape occupy two more of the compartmen It is not known for what the other three compartments are used.

Under the lid there are clips that hold scissors, tweezers, and pins. Gauze, oiled paper, styptic rubber band, and a flash light are contained in the right drawer. Absorbent cotton, bandages, gargle cup, eye-wash cup are contained in the left drawer. The kit box is made of sheet metal and a canvas carrying strap is attached to each end near the top.

Remarks: There are directio on the label inside the lid for the use of each of the componen of this kit. Some of the components of the kit examined were missing.

[redacted]



515-KIT, GAS CASUALTY, EXPERIMENTAL TYPE

518-KIT, CIVILIAN TYPE GAS MEDICAL

General:

Color:	Blue-gray
Markings:	White embossed characters on the lid
Dimensions:	9½" long, 7" wide, 12¼" high
Weight:	2.6 lbs.

Description: The metal container has a hinged lid that fastens in front with a snap device. An adjustable cloth strap facilitates carrying. Inside there are three compartments, 9" long x 3-3/4" wide, 6" long x 3" wide, 3" long x 2½" wide. The two larger compartments have hinged trays on top, and these trays have clips to hold the various shaped bottles. There is a chart inside the lid that gives the contents and instructions for use.

The contents are:

Skin disinfectant
Vesicant gas decontaminator
Sodium bicarbonate tablets
Boric Acid tablets
Decolorizing agent
Alcohol
Sneeze allayer
Basic eye ointment
Inhaler
Rice Oil
Tr. Iodine (dilute)
Oxidol
Adhesive tape
Oil paper
Absorbent cotton
Corrosive sublimate gauze
Bandage clasp
Scissors
Bandage
Tweezer
Glass applicator
Patient classifying cards
Mixing beaker
Sesame oil

The chart also states that the "Medical Kit for Gas Defense" may be used in the household for peace time use.

Remarks: All the contents listed were not found in this kit.

RESTRICTED

Instruction for the Use of Civilian Type Gas Medical Kit

Kind of Gas	TREATMENT
Vesicant Gas	1. When a liquid vesicant gas affects skin, apply the skin disinfectant to absorb the poison liquid and wipe it off. 2. Prepare a paste of the skin disinfectant and apply it to the affected part. Wash it off about 3 minutes later. (The color on the skin by the skin disinfectant will disappear when wiped with absorbent cotton soaked with decolorizing agent.) 3. After decontamination, wash with warm water and soap, and apply the mustard gas ointment. 4. When red spots appear, caused by the mustard gas, treat with a cold compress saturated with a solution of 5 tablets of vesicant gas decontaminator in water. 5. When eyes are affected, apply the basic eye ointment after washing with sodium bicarbonate solution (2 tablets of sodium bicarbonate dissolved in water.)
Tear Gas	1. Wash with sodium bicarbonate solution (2 tablets of sodium bicarbonate dissolved in water) or with boric acid solution (2 tablets of boric acid dissolved in water). 2. When pain is acute, apply the basic eye ointment.
Sneezing Gas	1. Gargle with sodium bicarbonate solution (2 tablets of sodium bicarbonate in water). 2. When sneezing acutely, sniff the absorbent cotton containing a few drops of the sneeze allayer.
Asphyxiant Gas	1. Maintain absolute rest. Never administer artificial respiration. 2. Drink some coffee, whisky, etc.
Burn	1. Wipe with absorbent cotton soaked with sesame oil and apply the mustard gas ointment and bandage.
Others	1. When there is little bleeding, disinfect with alcohol or oxidol, and dilute iodine tincture and bandage over the attached gauze. 2. When there is much bleeding, apply pressure at proper pressure point, and keep the affected point high. 3. For inhalation, add a few drops of inhalant to inhaler (1-2 drops).

RESTRICTED



518-KIT,CIVILIAN TYPE GAS MEDICAL

[redacted]

522-KIT, GAS CASUALTY, VETERINARY, LARGE

General: The kit consists of four chests and one pack containing medicines and equipment for gas casualty treatment.

Color: Olive drab.

Markings: Outside: Red insignia of Japanese veterinary service, black characters, chest number (in Japanese).
Inside: Labels listing contents.

Dimensions: Chests: 29 inches long, 20½ inches wide, 16 inches high. Pack: 32 inches long, 22 in. wide, 16 inches high.

Weight:
1 165 lbs.
2 109 lbs.
3 68 lbs.
4 153 lbs.
5 (pack) 82 lbs.

Description: The chests are well made of wood, reinforced with metal strips inside and out; the edges are protected by angle irons. The lids are hinged and have leather strips screwed around their perimeters, probably as a seal against moisture. Each chest has four leather handles, two on each end; each also has a hasp for locking.

Chest No. 1: The contents of chest no. 1 are contained in two metal boxes and three removable wooden compartments. The latter vary in size. Both metal boxes are 13½ inches long, 9 inches wide 13 inches high.

Contents:

Item	Quantity
Venous Injector with Volume gauge	2 sets
Accessories of Detector	1 set
Oxygen Inhaler	1 set
*Decontaminating Plates(set, large, medium and small).	1 set
Flash light	2 each
*Double pan trip scale (500g)	1 set
Gas tube (?)	5 each
Knife for Tracheodectomy	1 each
Spare Cells and Bulbs for Flash-light.	3 each (both)
Detector Kit, Type 95 A	1 set
Lancet	1 each
*Hammer for Phlebotomizing	1 each
Liquid Medicine Applicator	1 set
Oxygen Generator	15 sets
Oxygen Generator	15 sets

Chest No. 2: This is divided into two larger compartments, one rear and the other front. The top shelf in front lifts out, and below the compartment is subdivided three times.

Contents:

Item	Quantity
Sprayer or Decontaminator	2 sets
Petroleum Can	1 each
Petroleum	9 litres
Steam Inhaler	1 set
Accessories to the Steam Inhaler	1 set.

Chest No. 3 has three compartments, front to rear, of varying size. The panels which form these compartments can be removed.

Contents:

Item	Quantity
*Chloramine	10,000 grams
xGlucose	5,000 grams
Medicine Container	8 each
Chloramine Tablets (1g)	4,200 each
*Cardiasol Solution (10cc vials)	40 each
*Digitamin (10cc containers)	100 each
Alkaline Ophthalmic Ointment (50g)	4 each
*Novocaine (1%, 1cc)	50 each
*Glucose cone (500cc)	10 each

Chest No. 4 has two wide, deep trays on the right and a smaller one on the left. Beneath the larger ones is one long, wide compartment with a two sectioned wooden lid, and another smaller division. Under the small tray is a deep and narrow section divided into five compartments.

Contents:

Item	Quantity
Decontaminating Powder	5,000 gram
*Lead Acetate	2,000 gram
Medicine Container	3 each
*Strychnine Nitrate	25 gram
*Mercurochrome Tablet (0.1g)	80 each
Absorbent Cotton (200g)	30 pkgs.
Bandage	100 each
Gauze (5 meter lengths)	16 each
Cotton Cloth (9 meter lengths)	9 each
Adhesive Tape	4 sheet
Needle with Cap	50 each
Bamboo Applicator	5 each
Decontaminating Brush, Large	2 each
Hoof Brush	2 each
Destin (?) Ointment (500g)	20 each
*Boric Acid Tablet (1g)	1000 each
Soda Bicarbonate Tablet (1g)	1000 each
*Alcohol	500 grams
*Hydrogen Peroxide Solution	500 gram
*Creosote	500 gram
*Oxalic Acid	500 gram
*Caustic Soda Ball	500 gram

Pack: The pack is of a heavy white canvas material, which is shaped roughly like the chests. The inside is of blue grey canvas, to which are sewed several brown web straps. The closing flap has three small straps of the same material as the pack which buckle to either of two sets of buckles. Two heavy, wide straps pass completly around the pack through loops to further secure it.

Contents:

Item	Quantity
Throat wet Dressing Bandage	5 Sheet
xBlanket with Belt to keep warm	2 set
*Rubber water-bag, Large	2 set

[redacted]

522-KIT, GAS CASUALTY, VETERINARY, LARGE (CONT)

Vet dressing set	3	set
Gas Mask A, Army, Type 95	2	set
Protective Clothing, Heavy, Type 90 (396)	2	set
*Gas Protective Glove	5	pair
*Gas Protective Shoe	5	pair
Water-Proof Cloth (2.5 meters)	30	meter
Cotton Cloth (3 meters)	99	meter
*xCellophane	30	sheet

Translations on outsides of units:
Black characters on all units:
"Chemical Warfare, Veterinary Medical Kit".
"Unit No." (1 to 5).

Remarks: The lists given above are translations of lists fastened to the insides of the individual units. No information is available as to the size of command having one of these veterinary sets.

* - Items missing in chests examined.
x - Crossed off of list in pack.

Photograph shows one of the wooden chests on the left, (chestI), the canvas pack on the right.



[redacted]

682-KIT, GAS CASUALTY, VETERINARY, SMALL

General:

Color: Olive drab.
Markings: Outside- Red insigina of Japanese veterinary service, black characters.
Inside- Miscelleneous labels.
Dimensions: 14¼ inches high, 12½ inches wide, 27½ in. long
Weight: 80 lbs.

Description: This chest is made of wood, reinforced with metal strips; the edges are protected by angle irons. The lid is hinged and has a metal strip around its perimeter, probably to insure a tight seal. This chest has two metal handles and two hasps for locking.

The contents of the chest are separated into four compartments, two large and two small. Both large compartments have removable upper shelves. The compartments and inside of lid are lined with cotton twill.

Contents:

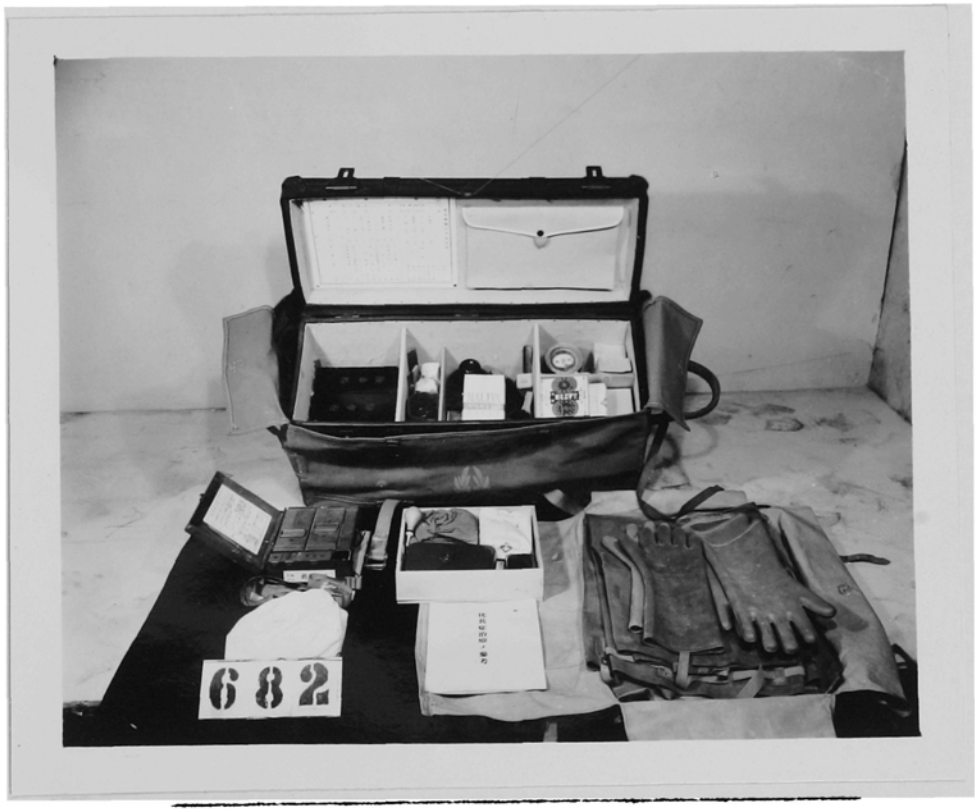
	Item		Quantity
Top Layer:	Gas Protective Glove	2	pair
	Water-Proof Cloth	2.5	meter
	Reference Book, for Remedies	1	each
	Protective Clothing, Decontaminating Suit, Heavy (374)		
	For Medical Examination	1	each
Middle Layer.			
Left:	Detector Kit, Type 95 A	1	set
Middle:	Flash light	1	each
	Accessories for Detector Kit	1	set
	Rubber Syringe, Small	1	each
	Soap Box	1	each
	Caustic Soda Ball	100	gram
	Soap	1	each
	Bamboo Applicator	2	each
Right:	Bandage	5	each
	Gauze (5 meters)	20	meters
	Absorbent Cotton(200 grams)	1200	gram
	Cotton Cloth (3 meters)	6	meter
Bottom Layer:			
Left:	Decontaminating Powder	3000	gram
Middle.	Hard Glass Bottle (Colored, with Graduation 200cc)	2	each
	Sprayer for Decontaminating Powder	2	each
	Rubber Water-Bag, Small	2	each
	Decontaminating Brush, Large	2	each
	Hoof Brush	1	each
	Alkaline Ophthalmic Ointment (50 g)	1	each

682-KIT, GAS CASUALTY, VETERINARY SMALL (CONT)

	Soda Bicarbonate Tablet (1g)	500	each
	Destin (?) Ointment	2000	gram*
Right:	Cardiasol Solution (10cc)	5	each*
	Chloramine Tablet (1 g)	400	each
	Oxalic Acid Tablet (1 g)	50	each
	Digitamine (10cc)	20	each
	Novocaine Solution (1%,1cc)	20	each
	Mercurochrome Tablet (0.1 g)	20	each
	Camphenal (2cc)	25	eachx
	Haliva Salve, Vitamin A&B(500g)	2000	gramx

* - Articles not with sample but listed on chart fastend to inside of chest.
x - Appear in chest but not listed on chart.

Remarks: The above list is a translation of list fastend to inside of chest. The chest has a canvas cover to protect it.



516-KIT, GAS CASUALTY, VETERINARY, TYPE A

General:

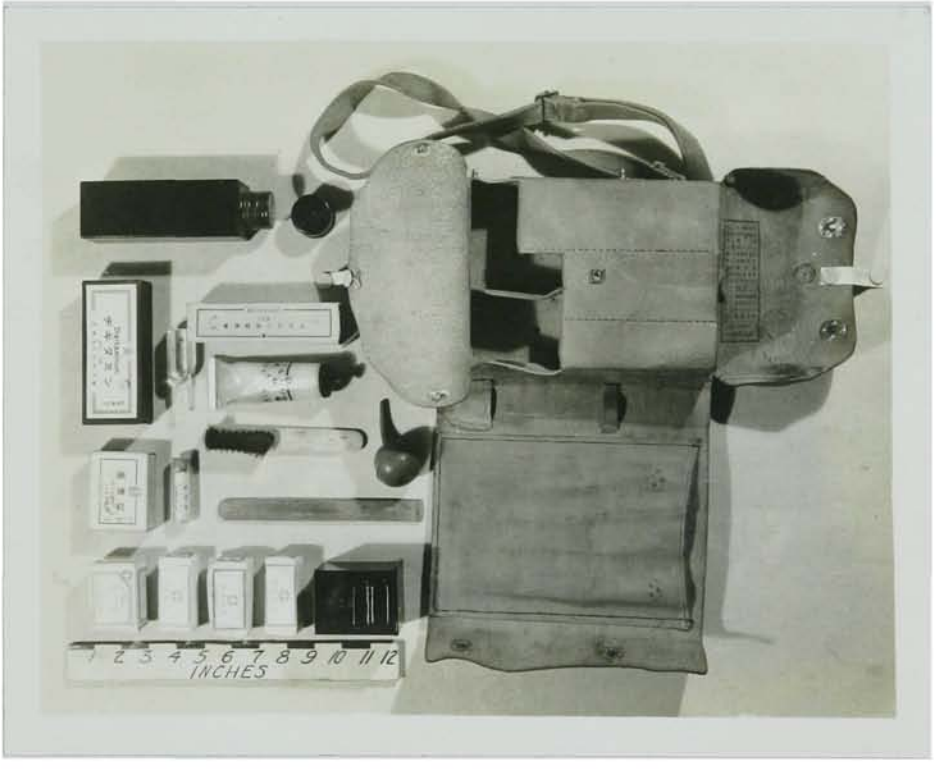
Color:	Brown leather.
Markings:	Arsenal stamp and chart of contents on inside of top flap.
Dimensions:	10" long, 7" wide, 2" high.
Weight:	3 lbs.

Description: Three flaps make accessible the contents of this compact kit. The top flap fastens with two snaps to a flap crossing from the right side of the kit to the left side; the latter flap also fastens with two snaps on the side. The third flap has three snaps, one on each side and one in front. The contents fit into five compartments; three opening at the top and two at the bottom front. A rubber pouch for the gloves and a sheath for the bamboo applicator are sewed to the side flap. A translation of the chart of contents stated that the kit contains:-

Detector container.....	1 each
Rubber syringe.....	1 each
Rubber gloves.....	1 each
Dispensing can of decontaminator.....	1 each
Basic eye ointment (50 g.).....	1 each
Digitamine Solution (10 cc).....	4 each
Sodium Bicarbonate Tablet (1 g.).....	30 each
Decontaminating powder.....	100 each
Blue first test paper.....	1 pack
Yellow test paper.....	1 pack
Gauze (5 m.).....	1 roll
Bamboo applicator.....	1 each
Absorbent cotton (20 g.).....	3 each
Decontaminating brush.....	1 each

Remarks: The kit can be worn on the belt or carried by a cloth strap.

[redacted]



516-KIT, GAS CASUALTY, VETERINARY, TYPE A

[redacted]

597-KIT, GAS CASUALTY, VETERINARY, TYPE B

General:

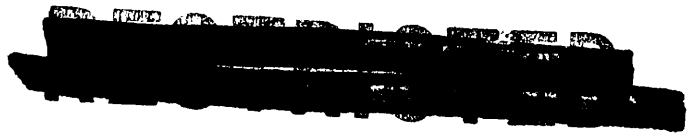
Color: Brown leather
Markings: Arsenal stamp and chart of contents on inside of top flap.
Size: 9⅛" long, 17½" wide, 12" high
Weight: 2¾ lbs.

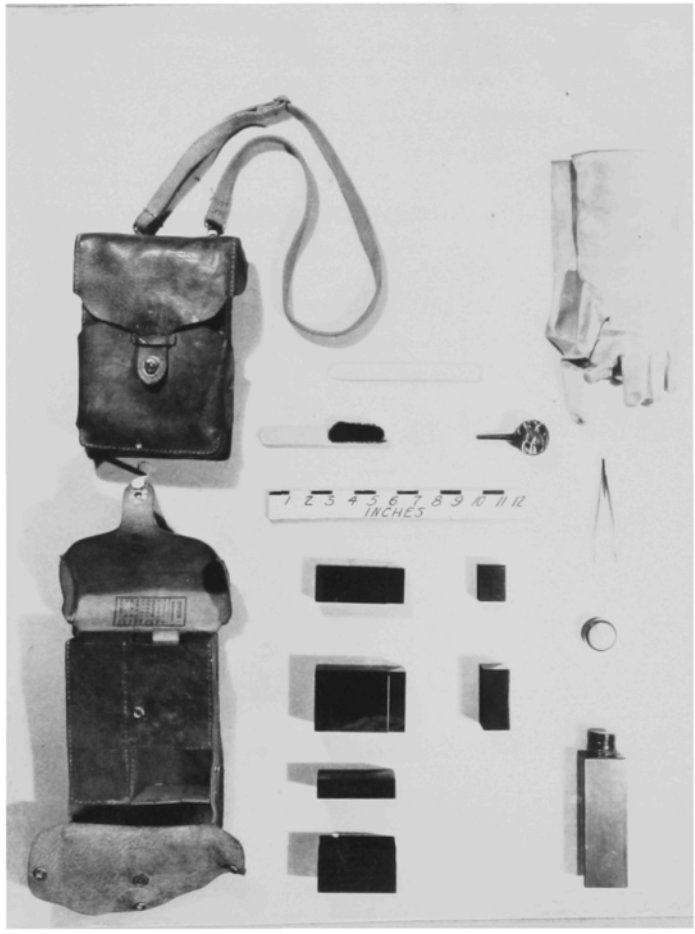
Description: A flap at each end of the case makes accessible the contents of this compact kit. The bottom flap fastens with three snaps, one on each side and one in front; the top flap fastens with a single snap in front. The contents, most of which are in black enameled tin cases with Japanese characters in red, fit into four compartments; two opening at the top, two at the bottom front. A translation of the chart of contents states that the kit contains:

Rubber Syringe (small).....	1 each
Rubber gloves (heavy).....	1 each
Dispersing can of decontaminator...	1 each
Tweezers.....	1 each
Chloramine.....	200 grams
Sodium Bicarbonate Tablets (1 g)...	50 each
Decontaminating powder.....	200 grams
Bamboo applicator.....	1 each
Decontaminating brush.....	1 each

The kit can be worn on the belt or carried by a cloth strap.

Remarks: This kit is similar to Veterinary Kit A.





597-KIT, GAS CASUALTY, VETERINARY, TYPE B

F.) IMPREGNITES

Included in this type equipment is one example (413) of a material to be added to a fabric to afford protection against poison gas vapor.

The remaining impregnites are of the type to be applied to leather and are similar to the U.S. standard shoe impregnite. As a group these are inferior to the U.S. material, however the Type "B", Company Size (367) has been found to afford excellent protection, at least equaling the U.S. material. However, being available only in containers of large size, it would have the disadvantage of not being available to each individual at a time when it would be necessary to use.

No materials for the impregnating of standard items of clothing were found.

[redacted]

365-IMPREGNITE, SHOE, SUMMER TYPE, INDIVIDUAL, TYPE A

General:

Color:	Brown
Markings:	Japanese characters
Dimensions:	2-7/8" in Diameter, ½" high.
Weight:	2¼ oz.

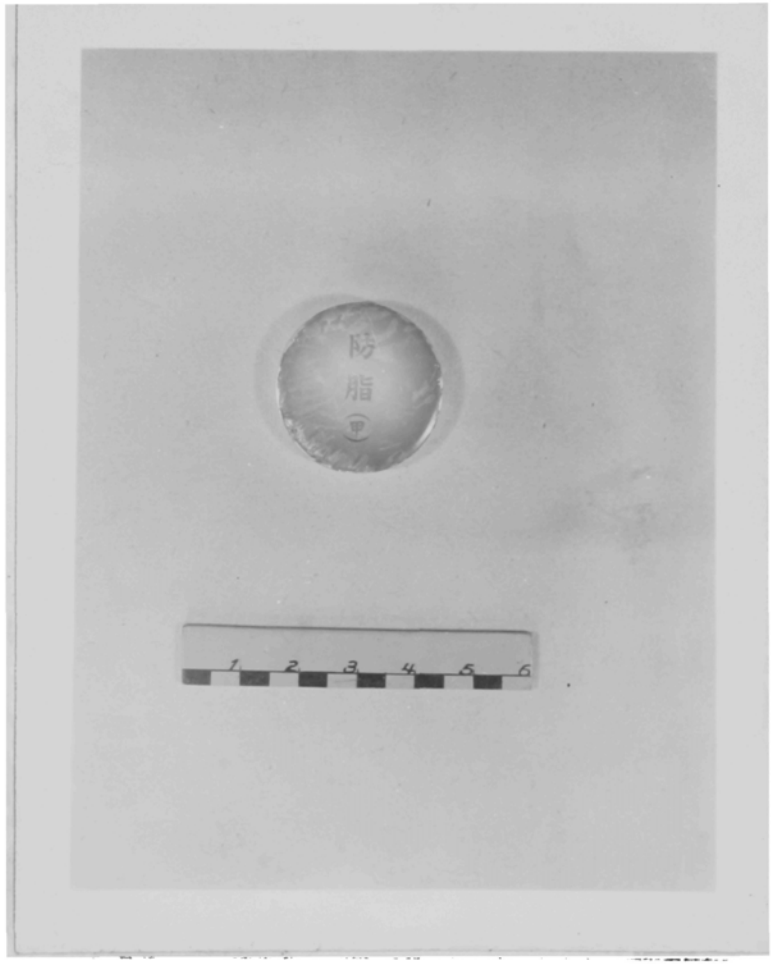
Description: The impregnite is contained in a round thin metal can. The slip-on container top is sealed to the body by a strip of ⅜", black adhesive tape. There are 1.5 oz. of the impregnite in each container.

The Japanese characters on the lid are translated to read: Protective Fat "A". The date of manufacture (13th Year of Shawa, 1938 for the one examined) is marked on the bottom of the container.

Chemical Composition: The impregnite material is a light brown, greasy solid, having at first the oder of ordinary shoe polish, after exposure in the open, odor is of pine oil. A sample of the material in water gives a pH of 8.5 to 9.0. Approximately 30% of the material is water soluble giving a solution yellow in color, smelling strongly of a pine oil. The water solution was treated for the fat content of a soap which was suspected in the material and 13-15% (original basis) by weight of a dark brown solid was obtained. The sp. gr. of the material is approximately .91-.92. A saponification number on the original was found to be 25. The material lost 23% by weight when heated at 70°C, 100mm vacuum. The material is a mixture of wax, soap and pine oil.

Performance: Tests made by the Lab. Section, 99th Chemical Serv. Co., found this impregnite to be an inferior material compared to the U.S. shoe impregnite.

[redacted]



765-IMPRESSION, PHOTO, SURFACE TEXT., INDIVIDUAL, TYPE A

[redacted]

366 - IMPREGNITE, [illegible], WINTER TYPE, INDIVIDUAL USE, 3

General:

Color:	Olive green
Markings:	Japanese characters in black.
Weight:	.79 lbs.
Size:	5" x 2½".

Description: The container is an olive green rubberized pouch. There is a seam in the back of the pouch and one at each end. The seam at one end has a one inch square flap, the corner of which is loose for convenience in opening. Translated, the Japanese characters on the front of the pouch read, "Preventive Fat B". The date 1938, is printed at the bottom.

The liquid impregnite has a viscous soapy appearance and contains 60% glycerin in water, plus small amounts of an insoluble (alkaline earth) soap with free fatty acid, which may be present from the manufacture of the glycerin.

Remarks: This item was reported by the 43rd Chemical Laboratory Company as being an ineffective decontaminating agent.



RESTRICTED

367 IMPREGNITE, SHOE, COMPANY SIZE, TYPE C

General:

Color:	Olive drab
Markings:	Three Japanese characters on lid translated: "Protective Wax (C)".
Contents:	Dirty yellow, sweet smelling wax.
Dimensions:	12" long, 8-3/4" wide, 4" high.
Weight:	15 lbs.

Description: A rectangular container of painted galvanized sheet metal comprises material comparable to U.S. Army issue of Shoe Impregnite. A lid of the same material as above slides over the container. Thin wire handles are located on each end of the lid. Contents are adequate for one protective application for a large group i.e. a platoon or company.

Remarks: At room temperature wax is solid and pliable. Some heating of wax may be necessary for effective application of Impregnite to shoes or other leather articles. Composition is paraffin, M.P. 54-56°C.





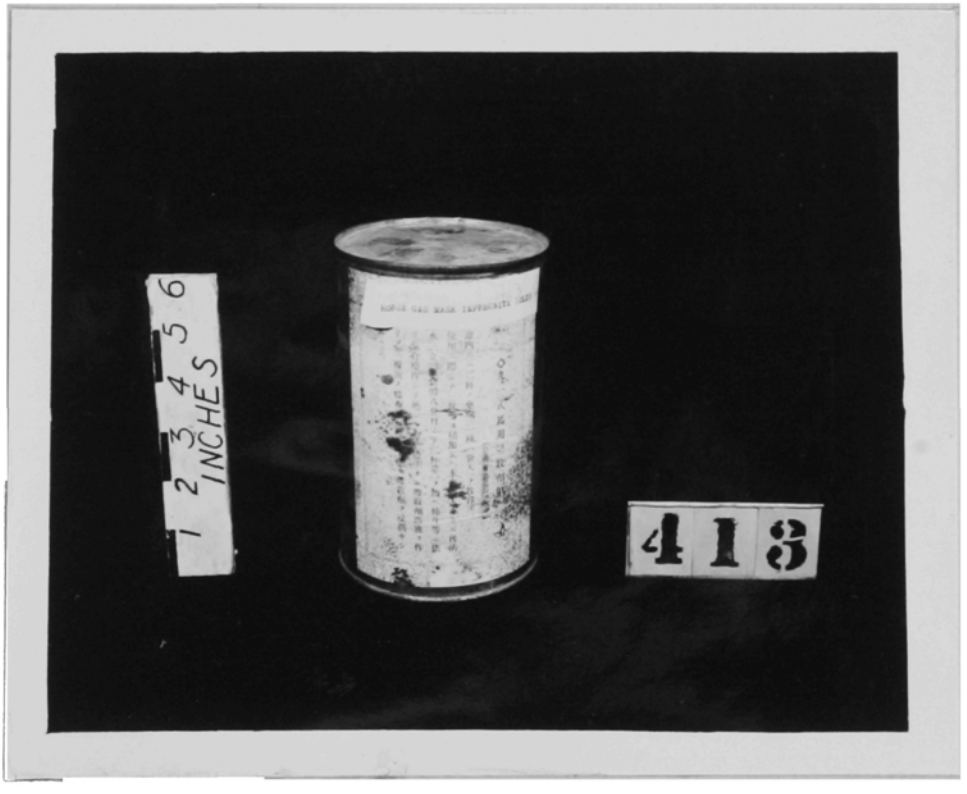
413-IMPREGNITE, HORSE MASK, TYPE 91, OLD

General:

Color:	Unpainted
Markings:	Japanese characters on a label giving nomenclature and directions for mixing and applying.
Dimensions:	6 3/4 in. high, 4¼ in. diameter
Weight:	2.8 lbs.

Description: The container is a conical shaped can that is sealed. A can opener would have to be employed to open this can. As this is the only one of this kind on hand no attempt was made to open it.

Remarks: According to the translation of the label, thisis Type 91 Impregnite for horse mask. Inside the container there is a bag that contains one of the two compounds that isinthe can. Directions for use: "Mix the two agents with three liters of water and stir until it is a transparent solution. Apply to cloth layer in the mask so that the solution soaks in well." There is enough impregnite in the can to impregnite 10 horse gas masks.



[redacted]

G.) PROTECTIVE CLOTHING

In this field the Japanese have shown the availability of rubber resources and have developed adequate impermeable clothing and covers. Of the equipment for military personnel the developments are limited to the type equipment necessary for decontamination work. Most of the clothing has the disadvantage of being cumbersome and would reduce wearers' efficiency considerably if worn for long periods.

There are no evidences reflected in the amount of information amassed here that the Japanese had any permeable protective clothing similar to the U.S. impregnated clothing. Work in this field has, according to reports from other sources, has been limited to use of chloramine T for the impregnation of clothing. Such clothing is reported to afford adequate protection only when wet.

In the reports given here work was limited to physical description. No tests were made to determine the resistance to penetration afforded by the various items.

396-CLOTHING, PROTECTIVE, HEAVY, TYPE 90

General:

Color:	Grey
Markings:	On the inside of jacket and pants are stamped the date of mfg., the name of manufacturer.
Components:	Trousers, hooded Jacket, and carrier.
Material:	Rubber-coated cotton twill.
Weight:	7½ lbs.

Description: The jacket has a fixed hood of the pull-over type. The sleeves and waist are the elastic type to insure a close fit. There are three straps on the jacket to hold the head piece firm and one around the waist. There is a pocket on the left side with a button flap.

The trousers are provided with two back pockets and shoulder suspenders. The waist and pants cuffs are the elastic type to insure close fit.

The carrier is of brown canvas, 16" long by 9" wide with adjustable strap for carrying.



[redacted]

373-CLOTHING, PROTECTIVE, HOOD TYPE

General:

Color:	Brown
Markings:	On the inside of pants and jacket and back of boots is stamped the date of mfr. and name of mfg.
Components:	Trousers, hooded jacket, gloves, knee boots and carrier.
Material:	Thread-reinforced rubber.
Weight:	4-3/4 lbs.

Description: The jacket is one piece has a fixed hood and opens down the front. It has snap fasteners and is sealed by an inner flap. There are three straps on the jacket, one to hold the head piece firm and one on each outer sleeve to get a snug fit.

The trousers are provided with an outside pocket on the right hip and waist belt running through loops.

The gloves are five finger type medium length.

The boot are knee length with strap at top to seal them about the legs.

The carrier is made of cotton fabric, 12" long and 8" wide. It is carried by a shoulder strap.

Remarks: The material of the entire suit is the same, rubber. This suit compares well with the U.S. impermeable suit.



374-CLOTHING, PROTECTIVE, DECONTAMINATING SUIT, HEAVY

General:

Color:	Gray Green
Markings:	On the inside of gloves is stamped the date and name of manufacturer.
Components:	Trousers, Jacket, two pair of gloves and carrier.
Material:	Thread-reinforced rubber.
Weight:	7-3/4 lbs.

Description: The jacket has no hood and opens down the front. It has snap fasteners and is sealed by an inside flap. The collar is the elastic type to insure a close fit. There is a strap on each outer sleeve to seal them.

The trousers are provided with an outside pocket on the right hip and waist belt running through loops, suspenders are attached.

The gloves are five finger type medium length and made of brouwn rubber.

The carrier is made of brown canvas, 23½" long by 13½" wide.

Remarks: This suit probably would afford good protection. No performance tests were made to determine impregnability of the suit to liquid vesicants.



CLOTHING, PROTECTIVE

General:

Color: Greenish gray or faded chocolate brown.

Dimensions:

Length, waist to heel:	52½"
Width at waist:	25"
Length of strap:	12½"
Thickness of sole:	3/8"
Width of web straps:	3/4"

Description: The material used in this suit is a cotton duck impregnated on the outside with rubber. It is heavier than that used in Type 2 suits. All joints are covered by rubber tape cemented over the seam on the outside and inside of the garment. An extra layer of the material is added at the knees, the heels, and at the spots where the suspender straps are attached. There are four web straps attached to the back of the pants and two loops on the front to receive them. Tie cords are provided at the knee, the ankle, and the instep for drawing the garment tight. There is an inside pocket in front on each side.

Remarks: The above information was taken from "Weekly Report of Investigation of Japanese Chemical Warfare, Hq. XXIV Corps, APO 235, San Francisco, CMLO (Chi Sec) G-2, dtd 9 Dec. 45. The items were found at Fusan, Korea. No similar clothing has been uncovered in Japan.



RESTRICTED

HOOD, PROTECTIVE

General:
Color: Olive green
Dimensions: Width at neck: 9½".
Length along front edge: 16½".

Description: The material used in this hood is an olive green, rubberized fabric similar to that used in Type #96 (Casein) suits. Around the neck is a double thickness of the material, in which five button holes are provided, apparently for attaching some other, related garment. There is a rubber tab on the right side. A strip of elastic tape is attached to the right rear of the hood, on top, buckling to the lower left front of the hood, thus providing a quick means of tightening the hood around the head.

Remarks: This item was manufactured in August, 1932. It was found at Chongup, Korea, warehouses of the Koshu District Div. Hq. This item was not among material turned in in Japan.

This report was extracted from "Weekly Report of Investigation of Japanese Chemical Warfare," submitted by AFIoT (Cml Sec) G-2, Hq. XXIV Corps, APO 235, dtd 9 Dec. 1945.



RESTRICTED

677-SUIT, HEAVY RUBBER WITH ATTACHED BOOTS

General:

Color:	Black
Markings:	Patch 1" by 3/4" stuck on top rear of attached boots marked 1 GW footwear 555 0001. Same markings appear on instep of boots with addition of 1.GW LTD, Made in Japan. A 2" diamond shaped patch is stuck on front top of attached boots with design of anchor surrounded by chai The number 105 appears on a shoe and the number 10 and 19 directly under.
Material:	Rubber coated cotton twill.
Weight:	7-3/4 lbs.

Description: The boots are attached at knee height to the suit which is supported by rubber shoulder suspenders. The suit covers the body chest high and is constructed of rubber coated cotton twill. A reinforced cotton belt is attached inside the suit to secure the waist.

Remarks: This suit would afford good protection, however would have to be supplemented by a upper body equipment.



[redacted]

UNDERCLOTHING, SPECIAL

General:
Color: Dark Green
Components: Hooded blouse, trousers, gloves, and carrier

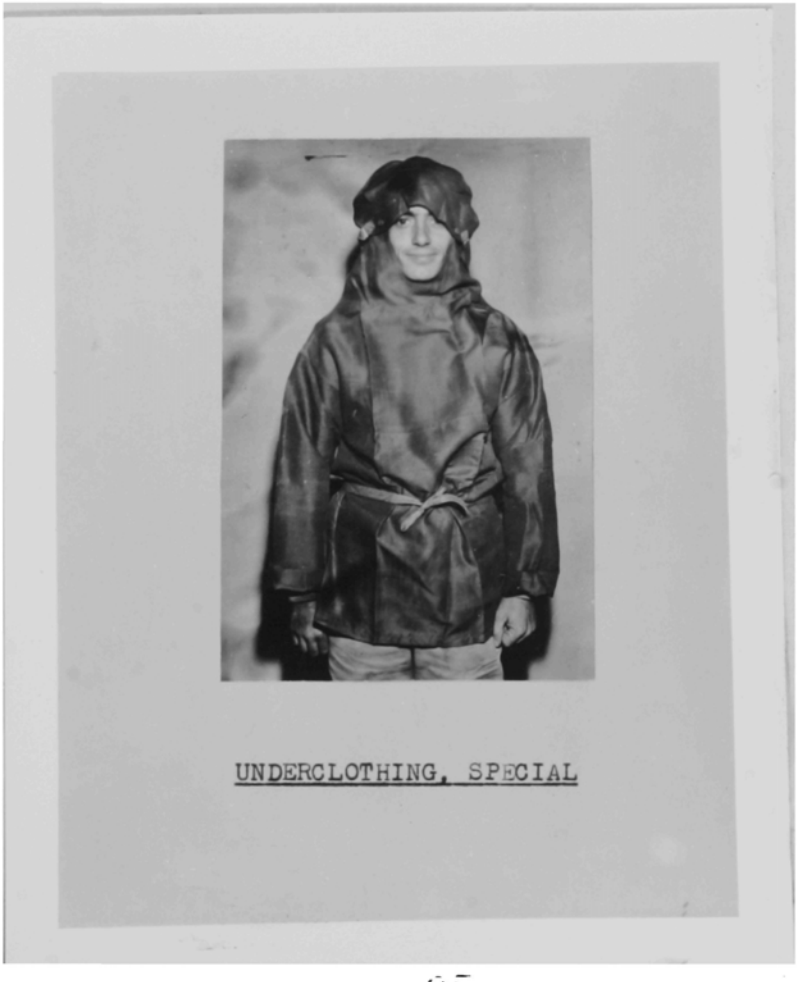
Description: The clothing was made of very light, porous fabric resembling cheese cloth, but is of stiffer texture. The blouse has tie strings around the waist and has the loops for tie strings around the cuffs. The hood is tightened around the head by buttoning each side and by pulling tie strings around the back of the head. There is a pocket over the right side of the chest.

The gloves are three pocket affairs, cut in gauntlet style, coming well up over the cuff. The gloves are attached together by a single strip of light webbing, 57 inches long.

The trousers are full length, cut full around the waist and seat. There are loops and tie strings around the waist and tie strings around the knees and cuffs.

The carrier is rectangularly shaped and has a web strap which ties to close the bundle.

Remarks: The above report was taken from FEIST Technical Intelligence Report 46 from Korea. According to this report the clothing was chemically treated and was assumed that the clothing was designed for use under rubberized protective clothing.



UNDERCLOTHING, SPECIAL



385-BOOTS, GAS SCOUTING

General:

Color:	Black
Material:	Thread-reinforced rubber.
Weight:	2¼ lbs.

Description: Boots are knee length with strap at top running through a loop to seal them about the leg.

Remarks: These boots would afford excellent protection against vesicants, however would be cumbersome to wear.



[redacted]

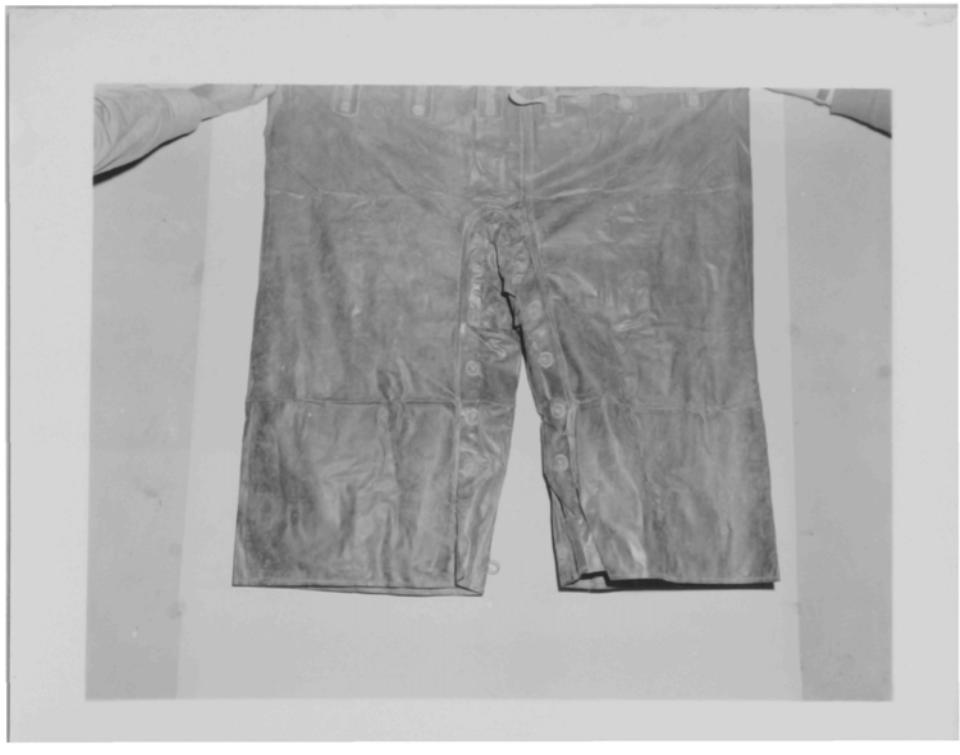
COVER, PROTECTIVE, GROUND SHEET-TROUSERS

Cover 1:

Color: Olive Green
Dimensions: (As Trousers) Width at waist: 33 inches
Length, waist to cuff 35 in.
(As Ground Sheet) Width: 34½ inches
Length: 73 inches

Description: This garment is fabricated from the same materials as the Hood, Protective, even to the same plastic buttons, and appears to be part of the same set. A rubber-impregnated web belt which ties in front passes around the waist through fourteen loops of rubber-impregnated cloth. There are five buttons around the waist, probably for attaching to a jacket which would complete the suit. Inside the front of each pants leg is a row of buttons with matching button holes, which extend from the bottom of the trouser leg, up the fly to the waist-sixteen in all. These are all overlapped by a rubber flap. When these buttons are unfastened, the pants may be spread out to form a rectangular ground sheet. This seems the only possible explanation for the size and peculiar style of the garment.

Remarks: This item was manufactured in August 1938. It was found at Chonguo, Korea. This information was submitted by Hq. XXIV Corps, APO 235 (Chl Sec) G-2 in a Weekly Report of Investigation of Japanese Chemical Warfare, dtd 9 Dec. 45. This item was not found anywhere in Japan.







COVER, PROTECTIVE, GROUND SHEET TROUSERS

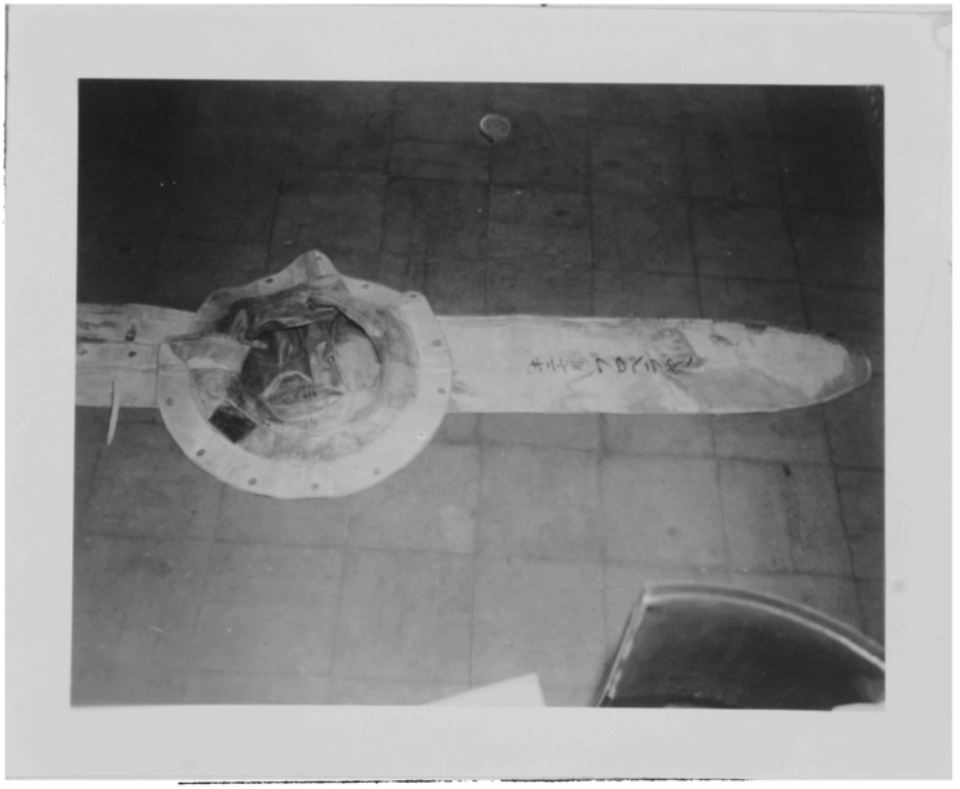
The garment is unbuttoned. and is shown folded as ground sheet.

RESTRICTED

COVER, GAS, PROPELLER

Description: The cover is made of a heavy rubberized fabric, hemmed at the edges to form a double thickness. It is designed to fit tightly around the blades of a two bladed propeller. Apparently it is for the protection of grounded planes against gas spray.

Remarks: The above information was submitted by Hq. XXIV Corps, "Weekly Report of Investigation of Japanese Chemical Warfare". This item was found in Korea.



RESTRICTED

COVER, GAS, PROPELLER SPINNER

General:

Color. Green

Dimensions: Radius from center to outer edge at widest part - 34", from center to blade openings - 20".

Description: The cover consists of a single ply of rubberized fabric hemmed at the edges to form a double thickness. The cot' threads are sealed between a thin layer of green rubber on the outside and a thin layer of black rubber on the inside. All seams are double stitched and gas proofed by strips of rubber tape well vulcanized. There are three openings to allow for a triple bladed propeller. A rather elaborate closing device is used to seal the cover at each blade opening. This consists of two overlapping flaps closed by gromets and a third and outer flap fastened over the other two by a strap and buckle. There are two webbed straps on each blade opening, to tie the cover tightly around the blade. There are fifteen female grommets around the base of the cover, apparently for the purpose of joining this item to a similar cover for the cowling.

Remarks: It is believed that this cover is for protection of grounded planes against gas spray, since the heavy rubber fabric, the elaborate construction, and the extremely careful seal at all openings would be unnecessary in an ordinary foul weather cover.

Reference: The above information was taken from "Weekly Repo of Investigation of Japanese Chemical Warfare", Hq. XXIV Corps, APO 235 San Francisco, EEIST (Cml Sec) G-2, dtd 9 Dec 1945. The item was recovered in Korea.

[redacted]



SCENE OF PROPELLER SPINNER

[redacted]

146-COVER, PROTECTIVE, HORSE, TYPE 97

General:

Color: Gray
Material: Rubberized cotton.
Dimensions: 159" long, 68" wide, (average)

Description: (The front section of the horse protective cover has previously been reported.)

The cover consists of three parts, a front section covering the animals forequarters, a middle section covering his back and sides and a rear section covering his hind quarters

The front section contains eyepieces made of transparent plastic. They are 6" in diameter and shaped in the form of flattened hemispheres. Each section contains various rubber straps used for securing the cover to the animal or, if the cover is not in use, may serve as carrying straps for each section. Japanese characters stamped in black are found on each section of the cover. Rubberized twine is inserted through eyelets along the edge of each section for tying the three sections together.

Remarks: Tests reported by the 15th Laboratory Company indicate that this cover affords good protection against vesicants.

Reference: TML No.11



370-EYESHIELDS, EXPERIMENTAL TYPE, HORSE

General:

Color:	Brown frame
Markings:	None
Dimensions:	5" d. for right eye, 5½" d. for left eye.
Weight:	.26 lbs each.

Description: The horse eyeshield consists of a round glass set in a brown rubber frame. The edge of the frame is only an inch away from the glass where it rests along the inside of the eye, becoming increasingly higher until at the outside of the eye the edge of the frame is three inches from the glass. This provides a uniform close fit for the shape of the horse's head.

Two shields are fastened together to make a complete set. The right eyeshield has a short strap which goes across the horse's nose and a long one which fits around the neck. The left eye shield has two fasteners, one a buckle and the other a thong, for the two straps.

Remarks: The exact purpose of the two sizes of eye shields has been questioned. It is believed to be so made as a convenience in packing.





148A HORSE LEGGINGS EXPERIMENTAL TYPE

General:

Color: Olive green
Markings: Japanese characters in black.
Material: Rubberized fabric.
Weight: 2 lbs. 7 ozs. Set of four.

Description: These leggings consist of a set of four all alike except the buckles and adjusting straps which are on opposite sides on right and left hoof leggings.

A single legging is composed of a body and a heel. The legging is approximately 11 in. long, 16 in. wide at the top and 22½ in. wide at the bottom.

Remarks: According to the notebook "Japanese Chemical Warfare report on Type 100 there is a smaller size legging not reported As this legging is 11 in. long compared with the 16 in. length of Type 100 it is assumed that this legging is the smaller size. There seems to be no other difference in the construction of the leggings.



[redacted]

197-TENT, GASPROOF, LARGE

General:

Color.	Pea Green
Composition:	Rubberized fabric.
Dimensions:	6' 8" high, 11' 8" wide, 13' 4" long.
Weight:	90 lbs.

Description: The tent is constructed of 40 inch width of rubberized fabric overlapped and joined together with rubber cement. A strip of a similar type fabric is cemented on each side of the seam for reinforcement. Celluloid windows 8 in. high and 10 in. long are built into each side of the tent, with a door in both ends. The doors consists of a 4 ft. 8 in. overlap running the full height of the tent and are secured across the bottom by a single cotton web strap. Around the edges of the tent, diagonally across the top, and down each corner and along a seam around the tent near the ground are cotton web ties with a small wooden peg for attaching the tent to a frame work, suspended from it rather than over it.

Remarks: Although this tent could be used as a gas shelter for protection against vesicant spray from attacking aircraft, it is more likely used as a gas chamber for training troops. This tent is a larger model of the tent reported in the loose-leaf notebook, "Japanese Chemical Warfare," Office of Chief Chemical Officer, Hq. USAFOS, APO 501.



[redacted]

676-COVER, M. ...OLD

General:

Color:	Sea Green
Markings:	Japanese Infantry symbol painted in red on each corner.
Composition:	Rubberized fabric.
Dimensions:	9ft.10in. wide, 11ft. 5in. long,
Weight:	22½ lbs.

Description: This cover is constructed of 36 in. widths of rubberized fabric served together.

The corners have been cut off making an octogan shaped cover. Ten 2 ft. 10 in. ropes are attached to corners to secure the cover to vehicle.

Remarks: This cover would be useful for covering supplies that might be exposed to vesicant contamination.



[redacted]

H.) TRAINING AIDS

In this group of items are the sniff sets, displays and C.W agent training aids which were used for the familiarization of both militar personnel and civilian population with various phases of C.W activities. Judging from the group of items includ. in these reports, the most attention was given to devising means for training in the recognition of CW agents. There is considerable evidence of lack of standardization.

In the sniff sets and C.W agent charts only the common agent are represented. It was noted that diphenylcyanarsine (DC) was illustrated as frequently or more so than adamsite, a fact supporting the Japanese preference for DC as vomiting and sneezing gas. Hydrocyanic acid and carbon monoxide emphasized more in these training aids than is usual in similar U.S. equipment, indicating the contention the Japanese had that these agents might possibly be made effective despite their inherent disadvantages. Japanese documents show evidences of a detailed investigation of these agents.

Chlorpicrin is not stressed in the sniff sets, an indication that the Japanese had decided against its use.



186-195-SNIFF TESTING CHEMICALS A

General:

Color:	Yellow rectangular box.
Markings:	Black Japanese characters on white paper.
Contents:	50 glass tubes in 10 rows of 5.
Dimensions:	10-3/8" long, 4-5/8" wide, 3½" high.
Weight:	1.6 lbs.

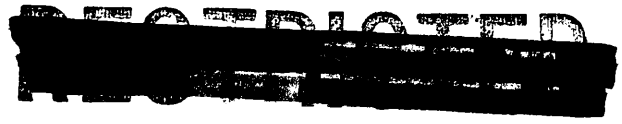
Description: The yellow box container is made of cardboard and has a slip-on cover. General instructions are pasted on the top of the cover while more specific instructions are listed on the underneath side of the cover.

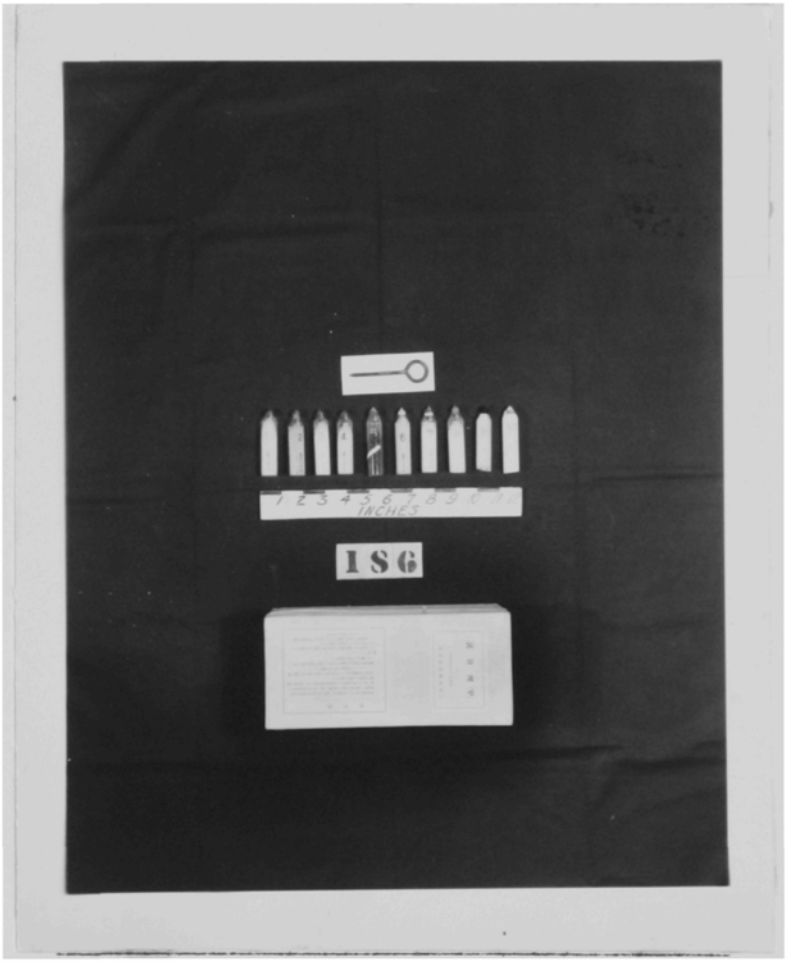
The sniff testing chemicals are in small glass ampoules tapered at the top. The ampoules are 3¼" long and 3/4" in diameter. They are placed in ten rows, each row containing tests for a separate chemical. The different tests may also be noted by the varied colored markings on the top each ampoule.

A brief translation of the instructions inside the cover follows:

Number of Row	Odor
Green A	Chloracetphenone
Green B	Benzilbromide
Green C	Chloropicrin
Red A	Diphenylcyanoarsine
Red B	Adamsite
Yellow A	Mustard
Yellow B	Lewisite
Blue A	Phosgene
Black A	Hydrocyanic Acid
Blue B	Chlorine

Remarks: Some of the chemicals give a definite "Sniff Test", but the majority produce a vague and indefinite test.





186-195-SNIFF ... ING CHEMICALS ...

[redacted]

352-SNIFF SET UNIT, TYPE 96

General:

Color:	Yellow
Markings:	Japanese characters in black
Contents:	Five small boxes of odor testing glass tubes.
Dimensions:	6½" long, 5-3/4" wide, 2-1/8" high
Weight:	1.3 lbs.

Description: The container is made of yellow cardboard and has a slip-over top attached to the box in back. When unopened the top of the box is sealed to the front with a round green seal. Pasted to the inside of the lid is a label giving instructions in Japanese characters.

Each of the five small boxes are identical in size. 5-7/8" long, 2" wide, 1" high, and are made of white cardboard. A common slip-on top extends down to almost half the height of the box. Where the top and bottom of each box meet are two colored strips of gummed paper extending around the box. The colors are different on each box, indicating a different gaseous odor. The ends of the tubes in each box correspond with the two paper strips in color. There are eighteen tubes per box and two rubber squeezing bulbs.

Each of the glass tubes is 5½" long from tip to tip, both ends being tapered. One tip has a small indented neck, 1½" from its tip. All tubes are ¼" in diameter at their largest cross-section and all except those with one black end are filled with a white granular substance. The color of the granular substance in the black tipped tubes is dark brown. A small amount of glass wool is inserted between the filling and each end of the tube.

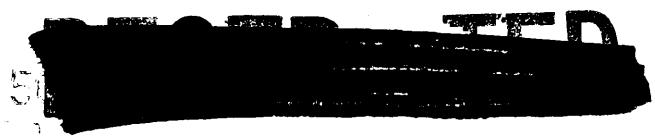
An explanatory chart of the different odors in the boxes is as follows:

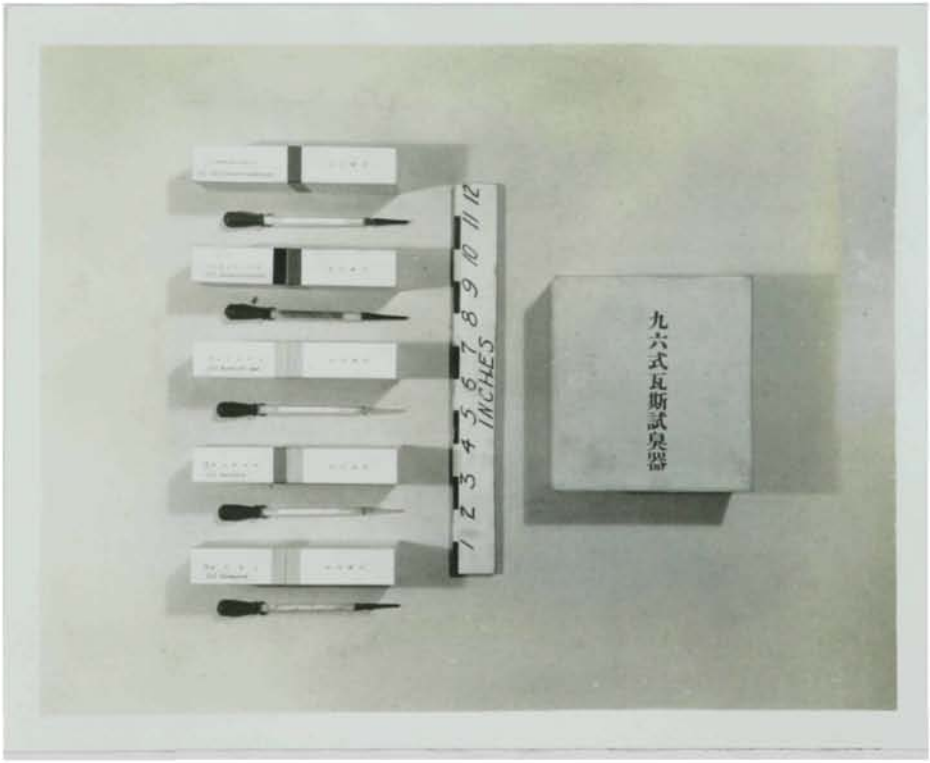
Colors on box	Odor
Green & White	Chloracetophenone
Green & Black	Benzylbromide
Orange & Orange	Mustard Gas
Orange & Red	Lewisite
Blue & Blue	Phosgene

Japanese characters indicate the odor on each box.

Remarks: Instructions direct to break off the tip of back ends of the tube and attach a rubber bulb on the end not having the indented neck. By squeezing the bulb a characteristic odor is released from the opposite end.

This sniff set offers a practical means of demonstrating characteristic odors of the principle types of toxic gases used in chemical warfare.





352-SNIFF SET UNIT, TYPE 96

[redacted]

425-SNIFF SET, SHIMAZU

General:

Color:	Varnished Walnut case and maroon cylinders.
Markings:	Name plate on the lid of the case, name of gas in each cylinder.
Components:	Wood Case, 5 Cylinders containing Mustard, Phosgene, Lewisite, Chloracetophenone, and Benzyl Bromide.
Weight:	9 lbs.

Description: Wood Case: This box is rectangular shaped, 11.7" long, 8.8" wide, and 3" deep. The sides, ends, and top are made of 3/8" material, but the bottom is made of 1/4" material. There are wooden brackets inside the box to hold the bottles stationary. Two small hinges are fitted to the lid to permit opening of the box. A small metal catch serves as a fastener for the lid.

Mustard Cylinder: The overall length of the cylinder is 7 7/8" and the diameter is 2". The cylinder is made up of three sections which screw together. The top section is conically shaped into which screws a hollow plug which has a closed end. In the side of the plug there is a 3/16" hole and around this plug fits a movable band which has a 3/16" hole that can be aligned with the one in the plug. Inside the cylinder and near the bottom, there is a small bellows with the plunger handle extending through the bottom end of the cylinder.

Inside Container: The inside container is made of thin glass, with an overall length of 5" and a diameter of 1 3/4". It has a conical top with a neck 1" long and 9/16" in diameter. The opening of the neck is closed by a cork stopper. Small pieces of adhesive tape covers 1/4" hole in the neck and 1/4" hole in the bottom. The glass bottle is filled with glass wool and small particles which resemble light clay. These particles and glass wool have been saturated with mustard gas.

Operation: Remove pieces of tape from the glass bottle and replace the Bottle in the metal cylinder. Rotate the movable neck band until the holes align. By pressing the pump plunger the gas will be forced out at the port in the neck.

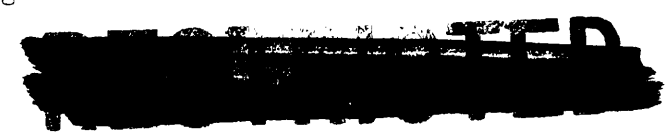
Phosgene Container: The metal container is identical with the Mustard cylinder except for the name plate. The inside container is filled with glass wool which has been saturated with Phosgene. The glass bottle is identical with the glass bottle containing the Mustard.

Lewisite Container: The outside container is identical with the outside Mustard Container. The inside glass container, which is the same as the Mustard container, is filled with white particles of Clay, and glass wool which have been saturated with Lewisite.

Chloracetophenone Container: Both the outside and inside containers are the same as the respective containers of Mustard. The glass bottle is filled with glass wool and white clay particles that have been saturated with Chloracetophenone.

Benzyl Bromide Container: The containers are the same as the Mustard containers. The glass bottle is filled with glass wool and clay particles that have been saturated with Benzyl Bromide.

Remarks: The sniff set has a very good design except the adhesive tape that cover the 1/4" holes in the glass Containers. Over a period of time the tape would allow the escape of the gas. Other than the above mentioned fault, it is a very cleverly designed sniff set.





425-SNIFF SET, [illegible]

[redacted]

Addenda:

The following translation was taken from labels on inside of identical sniff sets found in Seoul, Korea and reported, letter, Hq., XXIV Corps, APO 235, [illegible]IST (Cml Section) G-2 to Chief Chemical Warfare Service, Washington, DC. Subject: "[illegible]IST Technical Intelligence Report No. 5 from Korea-Sniff Set", dtd 20 October 1945. Such a label did not appear on sets examined in preparing this report.

"CAUTIONS IN USING THE KIT"

1. These bottles contain the real poison (gas) but they are so made that only an extremely small amount of poison (gas) can escape, or be emitted at any one time. Avoid breathing the gas for a long time. It is preferable to take two or three short sniffs, at intervals.
2. As a precautionary measure, the gas was absorbed in granulated infusorial soil. It is so safe that even if the bottle breaks no real harm will result unless it comes into direct contact with the body over an extended period.
3. Even after the smell is gone the bottles will contain some harmful traces of poison (gas). When wishing to dispose of the used bottles, break them, then burn them, or bury them in the ground.
4. Take particular cautions to keep Phosgene containers away from moisture. Always make certain with this gas, and also with the others, that after giving a sniff test the glass bottle is tightly corked, and the orifice at base of the bottle is carefully sealed with adhesive tape.
5. Each gas has special characteristics, with varying limits to the usable length of time during which it provides an effective test. Data, pertinent in this respect, are included in the following tabulation:

Name of Gas	Usable Length of Time	Strength of Odor	Phy.Eff
Mustard	A	Strong	Blister Agent
Lewisite	A	Strong	Blister Agent
Phosgene	B	Strong	Suffocating A
Brombenzylcyanide	A	Strong	Irritant Agen
Chloracetophenone	A	Weak	Lacrimatory

Note: Usable Length of Time: (A) 1 to 2 weeks, (B) 5 hours.

Note: Above translation indicates brombenzylcyanide filling in one container. Translation on set examined in preparation of this report gave information stating that it was benzyl bromide. No tests have been made to determine which of these two agents is in the set.

[redacted]

593-KNIFE SET, CIVILIAN

General:

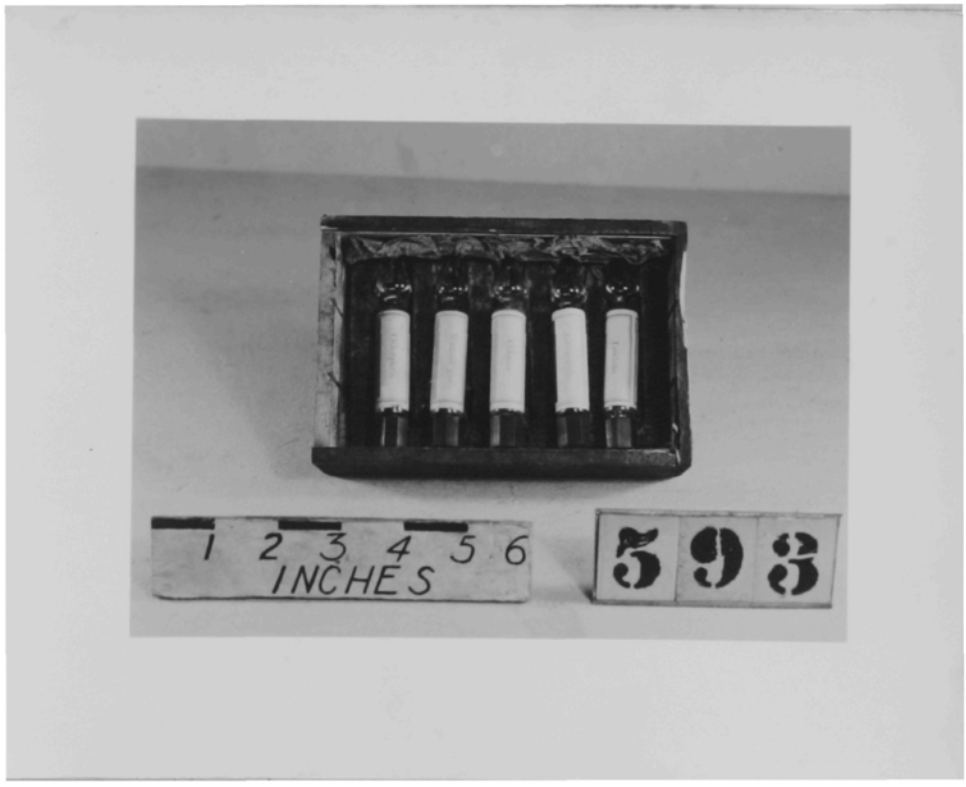
Color:	Reddish brown
Markings:	None
Dimensions:	6-3/4" long, 4½" wide, 1-3/4" high.
Weight:	240 grams (less lid).

Description: The container is a wooden box padded with a green cloth. There is a wooden bracket in the bottom with grooves that accept one ampoule each.

There are six ampoules that contain samples of C.W. agents, two of chlorine, two of chlorpicrin, one of mustard, one of Lewisite. The ampoules are cylindrically shaped with a constricted bottom which connects the cylinder to a tear drop shaped bulb. The agent is contained in the bulb. There is a very small opening through the constriction. To the screw-on cap is attached a small glass tube which is colored blue and is filled with absorbent cloth.

Remarks: The individual sniffs from the blue glass tube which is contaminated by the gas fumes that pass from the bulb into the absorbent cloth in the blue glass tube.

It is not known whether two other ampoules filled with different agents should be in the set in place of the duplicate chlorine and chlorpicrin containers.



[redacted]

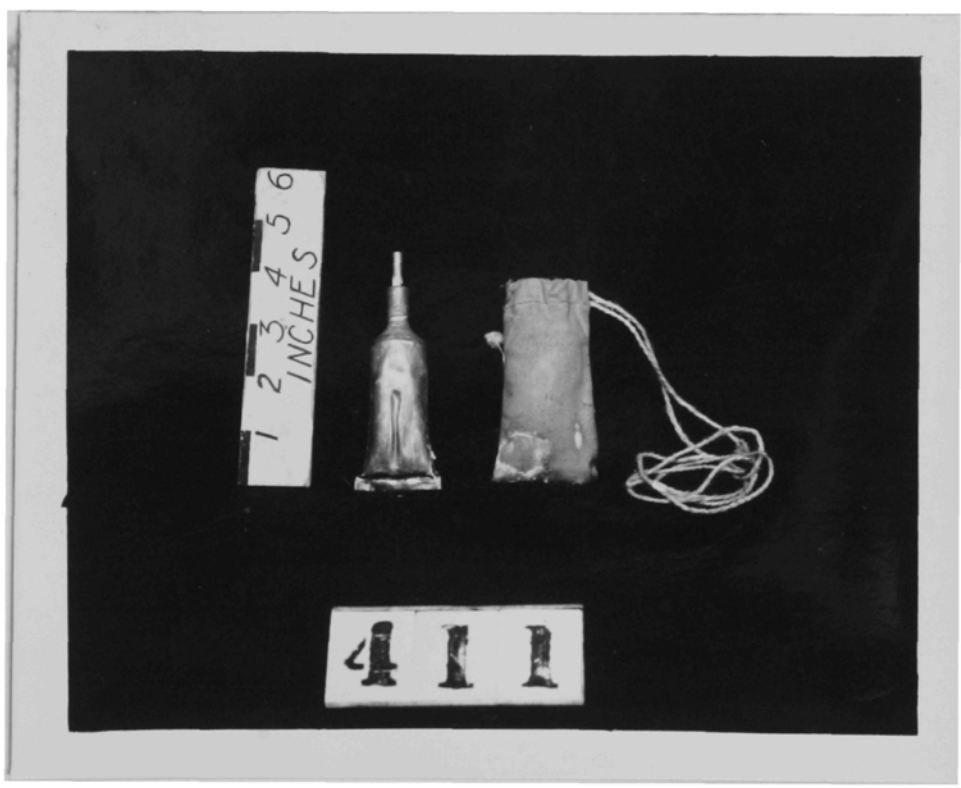
411-SNIFF TRAINING TUBE, CNB

General:

Color:	Lead colored
Components:	Lead tube, plastic film cover, canvas bag with drawstring.
Dimensions:	The tube is 4⅛" long, and 1" diameter.
Weight:	2.5 oz.

Description: The lead tube is in a jacket of a very poor quality and brittle plastic film. The tube is contained in a small cloth sack of kaki duck which is closed by a three foot draw string. The tube is opened by breaking off the neck.

Remarks: The tube contains CN in benzene and is probably used for familiarization of troops with this agent.



[redacted]

General:

Color-	Red mahogany stained
Markings-	Black enameled metal tag on face of sliding cover
Components-	Cabinet built wooden box containing five heavy beaver board charts mounting glass vials of chemical agents of importance during World War I
Dimensions-	19½ inches long, 15½ inches high, 5½ inches wide.
Weight-	12½ lbs.

Description: This training aid is a wooden cabinet having a sliding end cover. Five C.W. charts with chemical agent samples mounted thereon are inserted into retaining grooves through one end of the box.

Chart number 1 displays samples and text descriptive of the following agents; chlorine, bromine, phosgene, di-phosgene.

Chart number 2 displays samples and text descriptive of the following C.W. agents both in their pure and crude technical forms; benzyl bromide, brombenzyl cyanide, chlorpicrin, chloracetophenone.

Chart number 3 displays samples and text descriptive of the following chemical agents in their pure and crude technical forms; diphenylchlorarsine, diphenylcyanarsine, and adamsite.

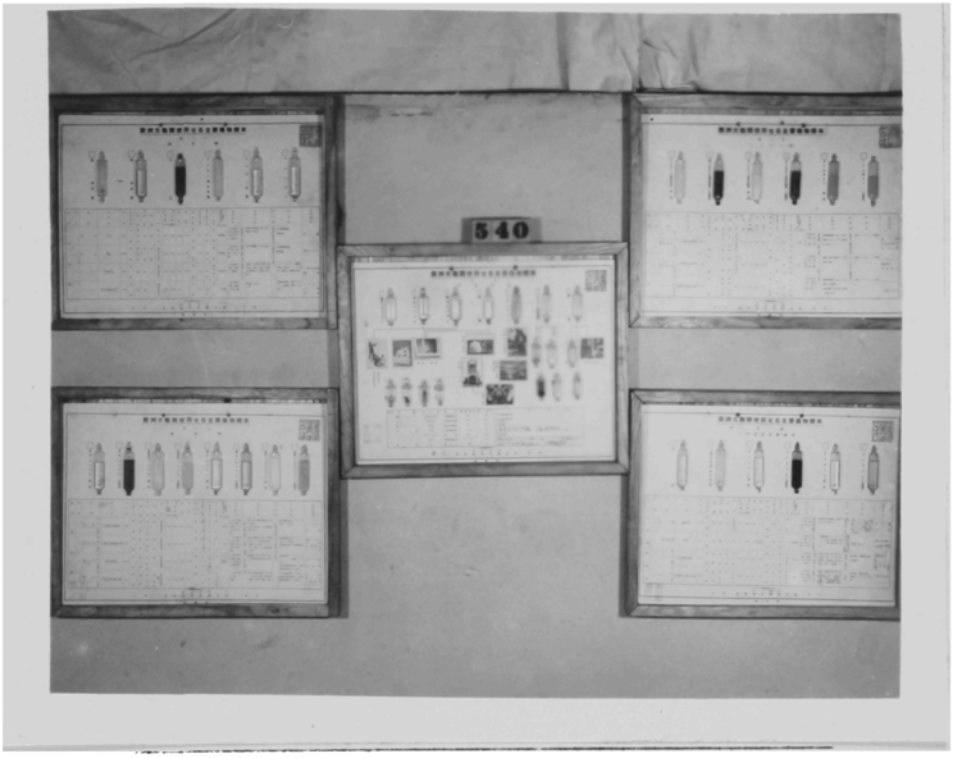
Chart number 4 displays samples and text descriptive of the following chemical agents; hydrocyanic acid, carbon monoxide, mustard and lewisite.

Chart number 5 displays samples and text descriptive of the important domestic and peace time applications of the following chemical agents; chloroacetophenone (public peace maintenance);benzyl bromide (public peace maintenance, insecticide); chlorpicrin (public peace maintenance, insecticide); hydrocyanic acid (extermination, synthesis of explosives and drugs; medicinal); adamsite (insecticide and wood preservative); phosgene (synthesis of drugs, fertilizer and other organic compounds); chlorine(water purification, bleaching, chemical synthesis, medicinal).

Below are given the translations of information and the charts. Chart numbers are related to numbers given above. Identifying nomenclature, "Samples of Important Poisons Used in World War I," appeared on each chart.

Remarks: No tests were made to determine whether or not the materials in the glass vials are the real agent, however it is believed from the notation made below Chart 5 (see chart, 5 page 8) that all the samples are simulated.

[redacted]



540-TRAINING AIDS CHARTS, 5 SHEETS, SET OF 5

CHART 1

CHART 3

CHART 5

CHART 2

CHART 4

[redacted]

CHART 1

CHOKING GASES

(1) Chlorine (Gas)
(1) Chlorine (Liquid)
(2) Bromine
(3) Phosgene (Colorless Gas)
(3) Phosgene (Liquid)
(4) Diphosgene

Class		Asphyxiating Agent		
Division				
Number	1	2	3	4
Agent	Chlorine	Bromine	Phosgene	Diphosgene
Chem. Formula	Cl_2	Br_2	$COCl_2$	$ClCOOCl_3$
Molecular Wt	70.9	159.8	98.9	198
Ordinary Phase	Gas	Liquid	Gas	Liquid
Color: Gas	Green Yellow	Dark Red Brown	Colorless	Colorless
Color: Liquid	Yellow	Red Brown	Colorless	Colorless
Color: Solid	Yellow	Red Brown	---	---
Odor	Pungent	Pungent and disagreeable	Rotten Compost	Rotten Compost
Density: Liquid	1.41 (20°C	3.12 (20°C)	1.35 (20°C)	1.65 (15°C)
Density: Gas	2.49	5.52	3.51	6.83
Boiling Pt (°C)	-33.6	63.7	8.2	128
Melting Pt (°C)	-101	-7.3	-118	---
In Water	Dissolves	Dissolves	Decomposes	Decomposes
Action on Iron	Much	Much	Little	Little
Persistency	Non-Persistant	Non-Persistant	Non-Persistant	Non-Persistant
Ordinary Way to Use	Spraying	Spraying	Spraying or Projectile	Projectile
Volatility at 0°C (mg/M³)	Gas Phase	Gas Phase	7,800,000	53,200
Limit of Efficient Concentration	Be killed in 30 min. by 3g/M³	Intolerable at 300mg/M³	Irritation by 40mg/M³	Intolerable at 75mg/M³
	Death can result from suffocation from effect of agent on respiratory system or lungs.			
Physiological Action	Burns upper respiratory tracts and the lung	A little more stronger than chlorine	Burns respiratory organs causing hyperhaemia, dropsy, haemorrhage or bronchial pneumonia	Generally as phosgene
Absorbent	A mixture of active carbon and soda-lime.			
Decontaminator	Sodium Hyposulphate, Drying Oil		Sodium Peroxide, Caustic Alkaline Solution, Water	
Main Resource	Common Salt	Magnesium-Promide	Carbon Monoxide Chlorine	Phosgene wood Alchol Chlorine

[redacted]

CHART 2

TEAR GASES

(1) Benzyl Bromide (Pure)
(1) Benzyl Bromide (Industrial)
(2) Brombenzyl Cyanide (Pure)
(2) Brombenzyl Cyanide (Industrial)
(3) Chlorpicrin (Pure)
(3) Chlorpicrin (Industrial)
(4) Chloracetophenone (Pure)
(4) Chloracetophenone (Industrial)

Division	Lacrymatory Agent			
Number	1	2	3	4
Agent	Benzylbromide	Brombenzyl-Cyanide	Chlorpicrin	Chloroaceto-phenone
Chemical Formula	$C_6H_5CH_2Br$	$C_6H_5CHBrCN$	CCl_3NO_2	$CH_2ClCOC_6H_5$
Molecular Wt	171	195	164.5	155
Ordinary Phase	Liquid	Solid	Liquid	Solid
Color: Gas	Colorless	Colorless	Colorless	Colorless
Color: Liquid	Colorless	Colorless	Colorless	Colorless
	Red Brown	Light Yellow	Slight Brown	Slight Brown
Color: Solid	Colorless	Colorless	Colorless	Colorless
	----	Yellow	---	Slight Brown
Odor	Aromatic Mustard	Aromatic Pungent	Pungent Pepper	Aromatic Pungent
Density: Liquor Solid (20°C)	1.44	1.52	1.66	1.19
Density: Gas	5.91	6.72	5.68	11.5
Boiling Pt (°C)	198	232	113	245
Melting Pt (°C)	-3.9	26	-69	59
With Water	No Action	No Action	No Action	No Action
Action on Iron	Medium(decomp) Much (decomp)	Much(decomp) Much(decomp)	Little Little	Little Little
Persistancy	Semipersistant	Semipersistant	Semipersistant	Non-Persistant
Way to Use	Projectile	Projectile	Projectile	Projectile & Spraying
Volatility on 20°C(mg/M³)	3.540	50.6	96.000	
Limit of Efficient Concentration	Intolerable for more than a min. at 35-40mg/M³	Intolerable For more than a min. at 20-30mg/M³	Intolerable for more than a min. at 60mg/M³	Lachrymating 0.3mg/M³
Physiological Action	Irritates eye; mucous membrane causing lachrymation and loss of eye-sight for a time.			
	Causes chronic conjunctivitis. causes sickness and head-ache upon excess inhalation	Irritates eye respiratory organs causing lachrymating, secretion of mucus, sneezing and sickness	Lacrymatory, also asphyxiant and vomiting gas	Irritates eye, causes pain on mucous and skin
Absorbent	A mixture of active carbon and Soda-lime			
Decontaminant	Hot alcholic caustic alkaline solution	Hot alcoholic caustic alkaline solution Carbontetrachloride	Strong alcoholic ammonia or glycerine solution, sodium oxide or sodium sulphite soln	60% sulphuric acid, sodium-acetate or hydroxide soln.

[redacted]

VOMITING GASES

(1) Diphenylchloroarsine (Pure) (2) Diphenylcyanarsine (Industrial)
(1) Diphenylchloroarsine (Industrial) (3) Adamsite (Pure)
(2) Diphenylcyanarsine (Pure) (3) Adamsite (Industrial)

Division	Sternutatory Agent		
Number	1	2	3
Agent	Diphenylchloro-arsine	Diphenylcyanarsine	Adamsite
Chemical Formula	$(C_6H_5)_2AsCl$	$(C_6H_5)_2AsCN$	$NH(C_6H_4)_2AsCl$
Molecular Weight	264.5	255	277
Ordinary Phase	Solid	Solid	Solid
Gas	---	----	----
Color: Liquid	Light Yellow Black Brown	Colorless Brown	Dark Green Dark Green
Solid	Colorless Black Brown	Colorless Brown	Yellow Green Yellow Green
Odor	Pungent, Grass	Almond Oil	None
Density: Solid	1.42	1.45	---
Liquid	11.7	11.4	12.3
Boiling Point (°C)	333	346	410
Melting Point (°C)	39	31.5	195
Action With Water	None	None	Slowly Decomposes
Action With Iron	Little Little	None None	Medium Medium
Persistancy	Non-persistant	Non-persistant	Non-persistant
Way to Use	Projectile, Smoke	Projectile, Smoke	Projectile, Smoke
Volatility on 20°C (mg/M³)	0.35 or less	0.1 or less	
Limit of Efficient Concentration	Intolerable for more than a min. at 1-2mg/M³	Intolerable for more than a min. at 0.25mg/M³	Intolerable for more than a min. at 5mg/M³
Physiological Action	Irritates nose and throat causing sneezing and vomiting.		
	Irritates respiratory organs acutely, causing sneezing and vomiting	Generally as I but a little stronger	Irritation is a little less compared to formers and acts slowly Causes sickness, headache
Absorbent	Filter with active carbon, soda-lime and felt.		
Decontaminant	Caustic Alkali	Caustic Alkali	Caustic Alkali
Main Resources	Aniline, Hydrochloric acid, sodium-nitrite, Arsenious acid	Diphenyl, Arsenic-chloride, Sodium-cyanide	Diphenylamine, Arsenious-trichloride

[redacted]

CHART 4

BLOOD AND NERVE POISONS AND BLISTER GASES

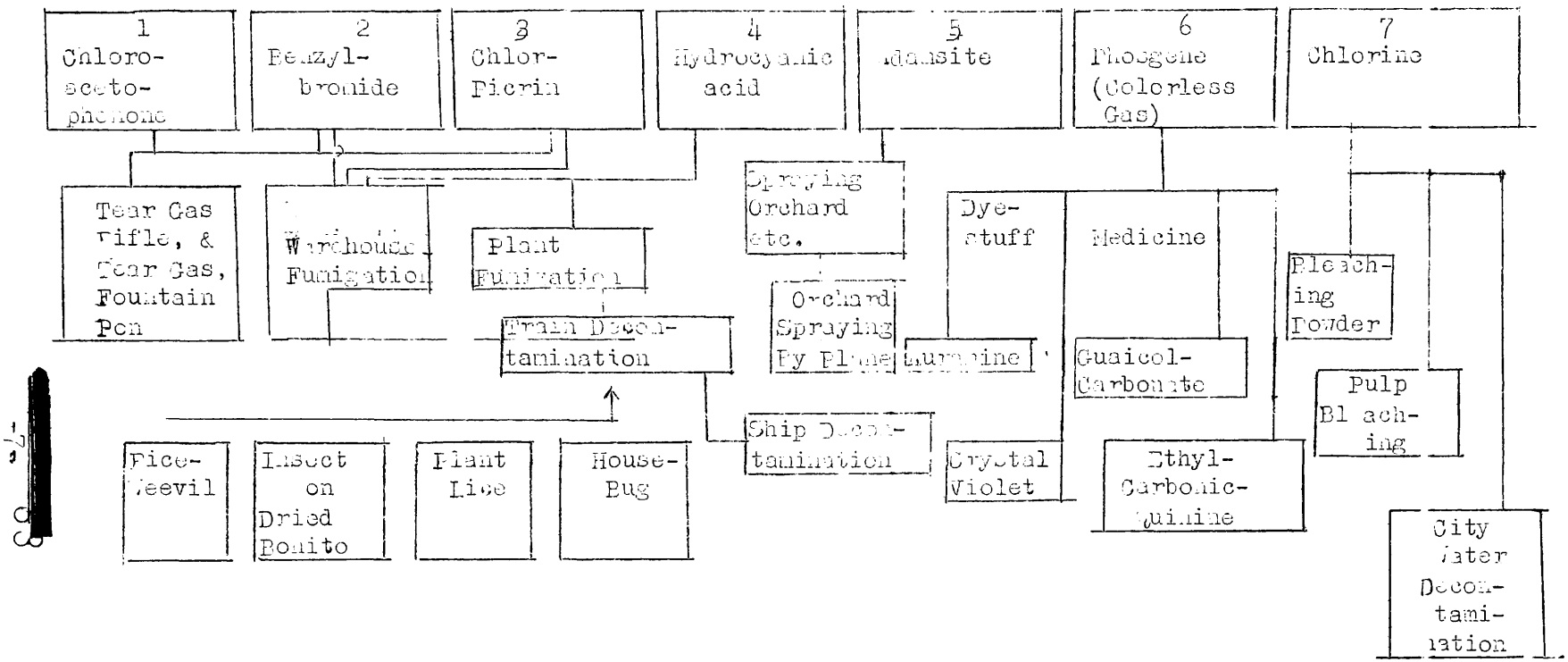
(1) Hydrocyanic Acid
(2) Carbon Monoxide (Colorless Gas)
(3) Mustard Gas (Pure)
(3) Mustard Gas (Industrial)
(4) Lewisite (Pure)
(4) Lewisite (Industrial)

Division	Systemic Toxic Agent		Vesicant Agent	
Number	1	2	3	4
Agent	Hydrocyanic acid	Carbonmonoxide	Mustard Gas	Lewisite
Mol. Formula	HCN	CO	$(C_2H_4Cl)_2S$	$ClHC:CHAsCl_2$
Molecular Wt.	27	28	159	207
Ordinary Phase	Liquid	Gas	Liquid	Liquid
Color: Gas	Colorless	Colorless	Colorless	Colorless
Liquid	Colorless	Colorless	Colorless Brown	Colorless Slight Yellow
Solid	White	----	Colorless Brown	Colorless ----
Odor	Almond Oil	None	Mustard	Geranium
Density: Liquid	0.70(20°C)	---	1.27 (20°C)	1.88 (20°C)
Gas	0.93	0.96	5.5	7.02
Boiling Pt (°C)	26.5	-190	217	190
Melting Pt. (°C)	-13	-207 (100mm)	13	-55
In Water	Decomposes	No Action	No Action	Decomposes
Action with Iron	None	None	Little Medium	Little Little
Persistancy	Non-Persistant	Non-Persistant	Persistant	Persistant
Way to Use	Projectile	-----	Projectile or Spray	Projectile or Spray
Volatility on 20°C (mg/M^3)	---	Gas Phase	696	2,300
Limit of Efficient Concentration	Causes death at 550mg/M^3	Causes death at 110mg/M^3 in 20 minutes	Causes death at 70mg/M^3 in 30 minutes	Causes death at 48mg/M^3 in 30 minutes
Physiological Action	Causes death affecting nerve system and blood		Blisters skin and irritates eyes, respiratory organs	
	causes death affecting nerve-center, nerve-system, respiratory-organs	Affects hemoglobin forming carbonmonoxide-hemoglobin obstructing transportation of oxygen causing death at last	Blisters skin acutely and irritates eyes respiratory organs, digesting organs affected slowly	Irritates skin respiratory organs acutely. the period of incubation is shorter and irritates stronger than mustard gas. Being absorbed readily also from skin causes arsenic poisoning
Absorbent	Soda-Lime	Decomposes on contact with hopcalite or silver-permanganate	Active-Carbon, Soda-Lime	
Decontaminant	Caustic alkaline & glycerine solution, $Ni(C_2H_3O_2)$ glycerin solution, or $KMnO_4$ & glycerine solution	(By ventilation)	Bleaching powder, sodium peroxide	Bleaching powder, sodium peroxide, or caustic alkali
Main Resources	Cyanide, Sulphuric Acid	Charcoal (or Coke), Oxygen (or Steam)	(Sulphar-chloride, Ethylene or (Ethylenechlorohydrin, Na_2S, (HCl)	Arsenous-trichloride, acetylene

[redacted] Retard

CHART 5

(PEACE TIME USE OF C.W. AGENTS



No.	Agent	Molecular Formula	Odor	Boiling Pt. (°C)	Melting Pt. (°C)	Peace Time Use
1.	Chloro-aceto-phenone	$C_2H_5COCH_2Cl$	Aromatic Aromatic Pungent	245	59	(1) Public Peace Maintenance (Tear Gas)
2.	Benzyl-bromide	$C_6H_5CH_2Br$	Aromatic Mustard	198	-3.9	(1) Public Peace Maintenance (Tear Gas) (2) Insecticide
3.	Chlor-picrin	Cl_2NO_2	Irritating Pepper	113	-69	(1) Public Peace Maintenance (2) Insecticide
4.	Hydro-cyanic-acid	HCN	Almond Oil	26.5	-13	(1) Spraying a ship, car, warehouse, or plant (2) Synthetizing Explosives (Cyanuric-azide-Detonator) (3) Medicine (2% solution) (4) Synthetizing Medicine ("Aloma-Okain")
5.	Adamsite	$NH(C_6H_4)_2AsCl$	None	410	-195	(1) Insecticide (2) Antiseptic for Wood
6.	Phosgene	$COCl_2$	Rotten Compost	8.2	-118	(1) Synthetizing dyestuff (Crystalviolet, Auramine, Wool-Green, etc.) (2) Synthetizing Medicine (Guaiacol-carbonate, ethylcarbonic-quinine, etc.) (3) Synthetizing Fertilizer (Urea etc.) (4) Synthetizing other organic compounds
7.	Chlorine Gas	Cl_2	Irritating	-33.6	-101	(1) Decontaminating city-water or sewer, foods, swimming-pool, etc. (2) Bleaching paper-pulp, purifying sugar, Bleaching resources of china-ware (3) Diluted chlorine for medical use (4) Manufacturing organic and inorganic compounds

Sample Section

Kyoto Shimazu Manufacturing Stock Co. Tokyo

(Imitation)

540A-TRAINING AIDS CHART, GAS AGENTS

General:

Color-	Grey painted on the outside
Markings-	White painted Japanese characters which are descriptive of the item.
Components-	Wooden box, G.W. chart, nine glass vials containing G.W. agents
Dimensions-	2¼ in. x 5½ in. x 12 in.
Weight-	1½ lbs

Description: This is a crudely made wooden box painted light gray outside and white inside containing nine nested glass vials of various chemical agents. The box has a hinged lid and a rubberized fabric strap handle. The back of the box lid has a gas chart descriptive of the nine samples. The nine samples are (reading from left to right with the box opened for inspection in such a way that the gas chart is in its proper upright position); chloroacetophenone (wide green band), chlorpicrin (narrow green band), diphenylcyanarsine (wide red band), adamsite (narrow red band), mustard (wide yellow band), lewisite (narrow yellow band), phosgene (wide blue band), HCN (wide black band), chlorine (narrow blue band). The gas chart yields the following information pertinent to the nine gas samples (reading in columns from left to right); number of vial, color of band, type of gas, common name, odor, phase, melting point °C, boiling point °C, volatility.

Remarks: The mustard container was found to be broken at the tip and its contents apparently removed. Had the container been broken while in the case there would be some vestige of mustard contaminating and there was none.



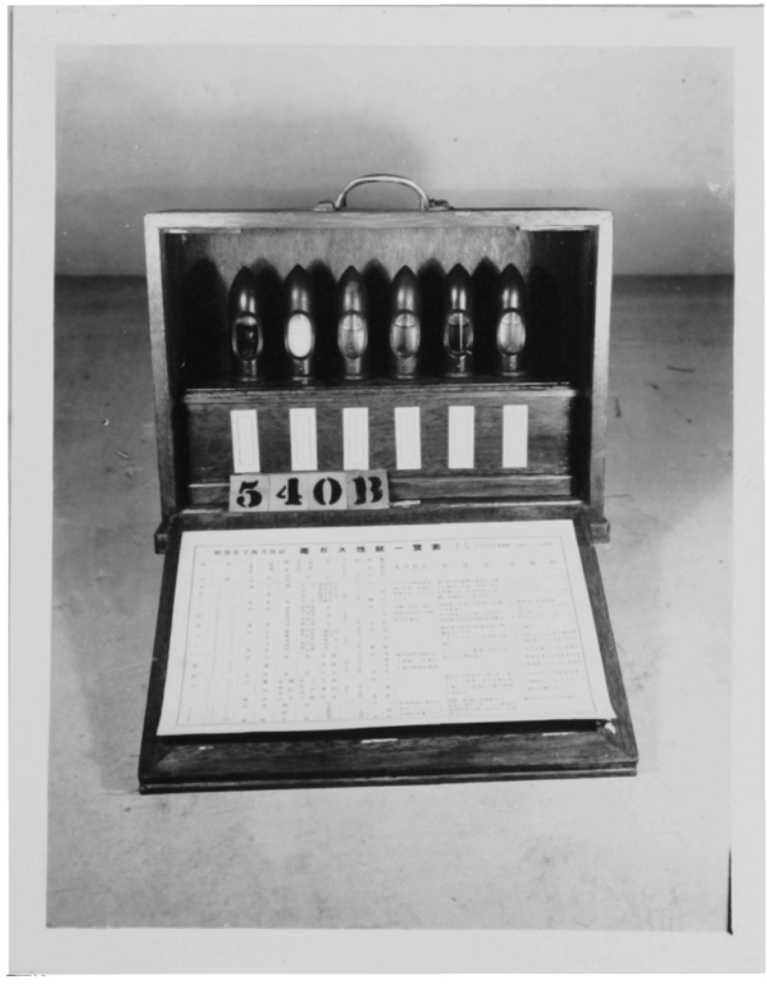
General:

Color-	Varnished oak stain
Markings-	Black lacquered descriptive metal plate on the cabinet cover
Components-	Cabinet, platform block, six hollow wooden torpedoes with contained vials of C.W. agents
Dimensions-	5⅜ in. x 14¼ in. x 10 3/4 in
Weight-	5½ lbs

Description: This item is contained in a cabinet built box. A side cover is held in place by two spring-ball and grommet type fasteners. Fitted in the cabinet and removable is a long block shaped cabinet built inspection platform to which six wooden plugs have been nailed. Over these plugs and fastened to them with wood screws are six torpedo shaped wooden tubes. In each tube is a glass vial of chemical agent. A slotted window in each tube permits visual inspection of the vials. The outsides of these torpedos are painted grey and the insides are painted white. Small identifying paper labels are glued to the platform just below each sample. Reading from left to right the samples are labeled; diphenylcyanarsine, chloroacetophenone, chlorpicrin, lewisite, mustard, phosgene.

A descriptive chart is attached to the back of the cover. This chart further identifies each item and gives information relevant to their tactical use.

A wrought iron handle is attached to the top of the case for portability.



531-BOMB, TRAINING AID, WOODEN

General:

Color: Silver and black
Markings: Japanese characters printed on yellow labels giving nomenclature and mfg.
Components: One half of interior of bomb showing 9 war gases, other half showing thermite incendiary filling.
Dimensions: 25¼" overall, 5-5/8" maximum diameter, 14-3/4 length of fins.

Description: This bomb is a reproduction in hard wood of the 10 Kg chemical and incendiary bombs. It contains in one half section small vials of the common agent fillings (imitation) for this bomb and in the other half section a dummy thermite filling.

The bomb is in two halves along its longitudinal dimension. The two halves are held together on one side by a hinge, on the other side by a metal latch.

The half of the bomb containing the agent vials is painted black on the outside, silver on the inside. The vials are arranged in the following manner:

Top row, left to right:
Adamsite, Diphenylchloroarsine, Chloroacetophenone.

Middle row, Left to right:
Mustard (French), Mustard (German)

Bottom row, left to right:
Chlorpiecrin, Bromoacetophenone, Phosgene, Lewisite.

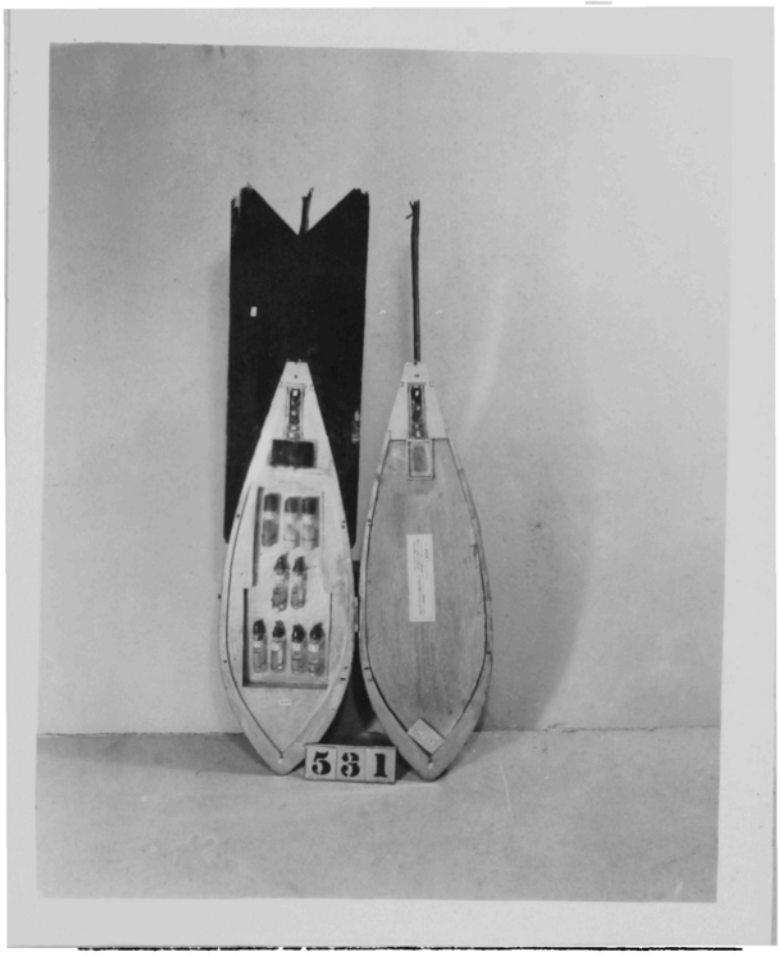
These vials are covered with a sheet of celluloid. In the tail of this half is a cross section of the impact fuze and burster used in the actual bomb.

Translation of the label on this half bomb reads: "Training Aid for 10 Kg Poison Gas Bomb" "Manufactured at: Applied Chemical Research Division, Asayama Scientific Firm, Osaka".

The other half of the bomb is silver in color. A silver colored sheet of cardboard is set into a recess to represent the thermite filling of an incendiary bomb. There is a fuze cross section in the tail identical to that in the agent half. The burster charge section is replaced by a compartment marked: "Auxilary Incendiary".

Translation of the label is as follows: "Training Aid for 10 Kg Thermite Incendiary Bomb, manufactured at Applied Chemical Research Firm, Osaka." The bomb has four tail fins.

Remarks: This item is a training aid used to illustrate the construction and type filling for this bomb. It is probable that this aid is actual size.



531- OX3, TMMIMC,,IE, 40004

683A-DIGITAL, GAS MASK PARTS
683F
683C

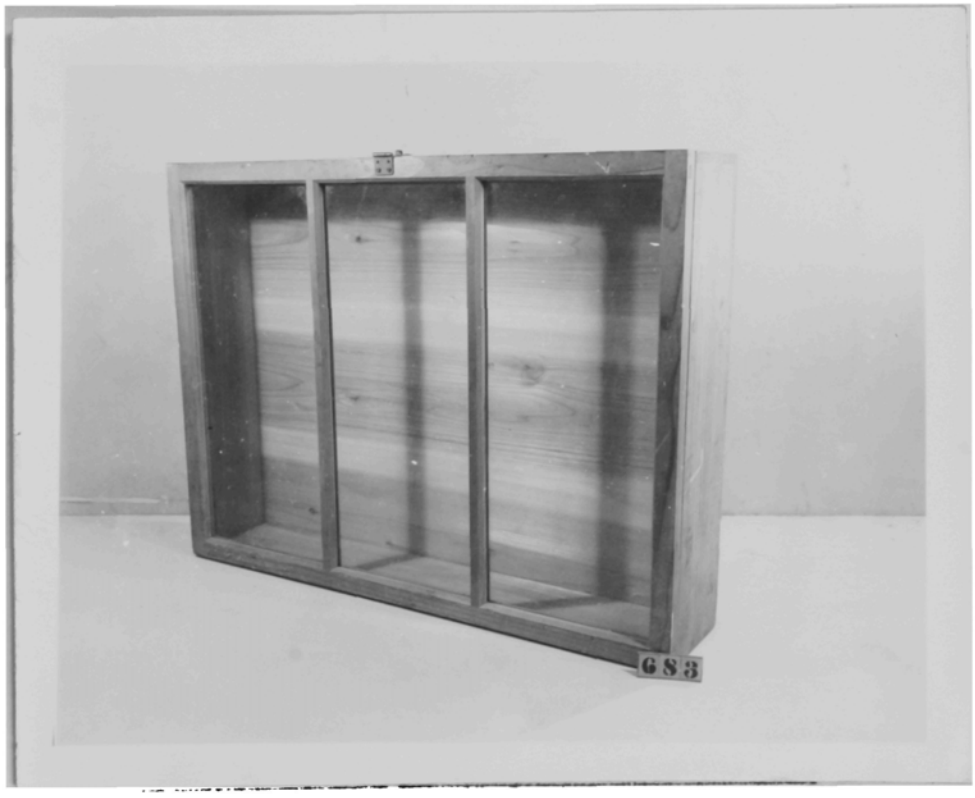
General:

Color- Cases are unpainted wood.
Markings- Items in displays individually labeled.
Dimensions- (of cases) 41½ inches long x 31 inches high x 8 inches wide.
Weight- A- 45 ½ lbs., B- 37½ lbs., C 34 3/4 lbs.

Description: The items in each of these displays are wired to a reddish, double-layered pasteboard background which is tacked to a lightwooden frame. This is set into the case.

The case has a hinged front with a clasp for padlocking. The front is a window of three panes of glass, 27 3/4 inches high, x 12 inches wide. There is one of such case for each of A, B, and C. The case is shown in included photograph.

A and B illustrate many causes for mask. A and B are a set performance failure. C shows all the component parts of a mask



[redacted]



1

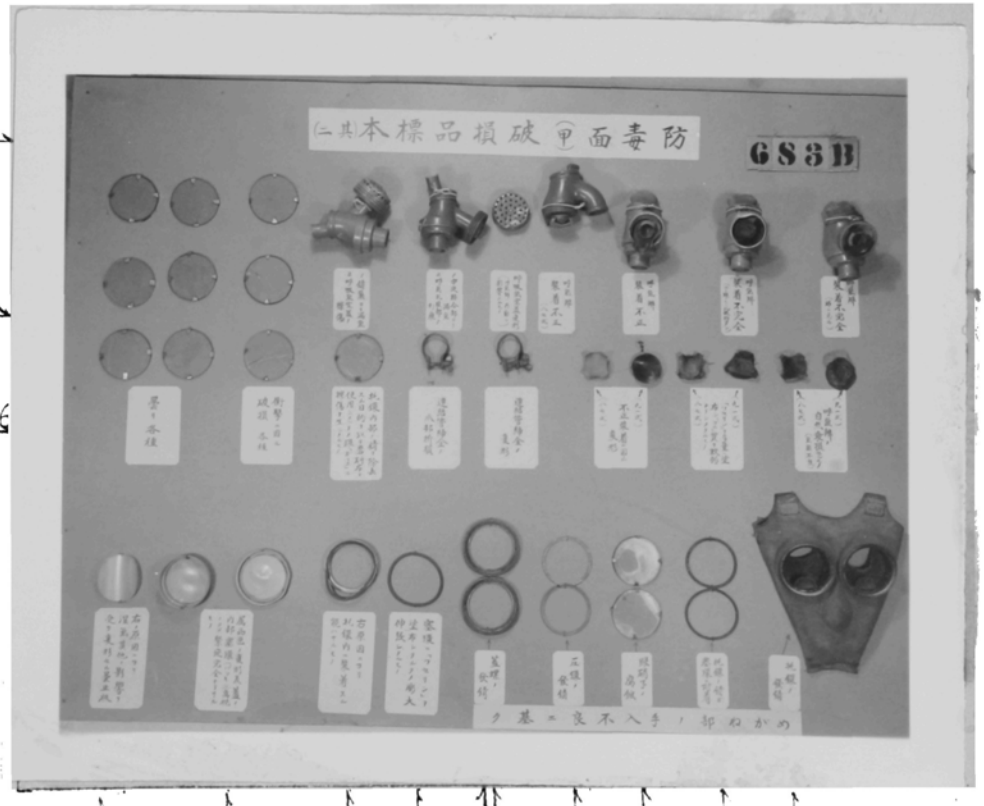
2, 3, 4, 5, 6, 12, 13, 14

19

18

17

7 8 9 10 11 15 16



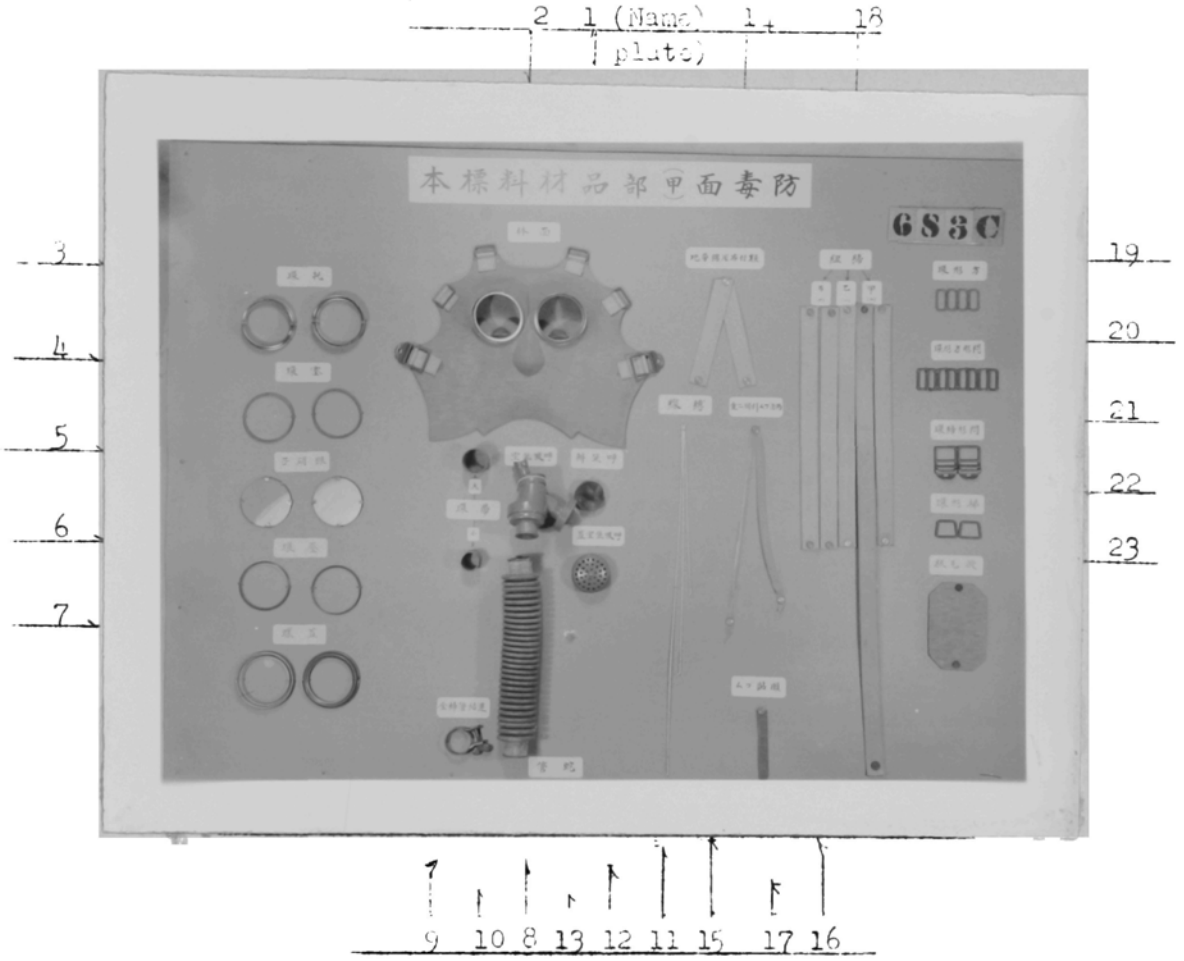
1

2, 3, 4, 5, 6, 7, 8

9, 10, 11, 12, 13, 14, 15, 16

17 18 19 20 22 23 24 25 26

21 (hidden strip)



Translations: Related to figures by photographs 683.-

-Name plate-

1. Samples of Damaged Parts of Gas Mask (A). (Part 1 of 2)
2. Hardened Hosetube (Type 87).
3. Stale Hosetube (Type 87).
4. Hardened in cold (When the temperature does not range below 15°C, it will be softened at 20°C).
5. A leak from a hole on hosetube (Shown on the mark "O").
6. Damage of connected part of a canister and hosetube (Caused by carelessness in handling).
7. Trouble in functioning of an inlet valve of Type 87 by a little cotton rag remaining in inlet duct after cleaning it.
8. Poor inlet valve of the Type 87 (It does not close all when aspirating).
9. A leak on the middle, of the Type 87 angletube.
10. Deformation of a tissot tube by carelessness in putting facepiece in a carrier.
11. (1) A scratch on an eyelens caused by a sand paper when scratching off rust inside of eyelens retainer ring.
    (2) Falling apart of an eyelens retainer ring.
    (3) Damage eyelens retainer ring which was falling apart and was pressed too hard with fingers to set it back to an eyering.
    (4) Stale and peeled off condition (leaking) of a silken rubber inside the part of chin.
    (5) Leaky seam on a facepiece on the edge of eyepiece (torn).
12. Cracks on an eyelens gasket ring, made of cotton knit, caused by rust in rusting of eyering.

71

71

13. Trouble in outlet valve caused by screwing outlet valve guard which doesn't fit well, too deep.
14. Rust on eyelense gasket ring caused by a rusty eyelens retainer ring attached to it.
15. Rust on canister fastener.
16. Weakened stockknit caused by bleaching powder (Notice the color of the hosetube and fastener).
17. Soaked with water (Notice the corrosion of the bottom).
18. (1) Transformation of neck.
    (2) Crack in a soldered part.
    (3) Consumed and dwindled absorbent.
19. The bottom of an absorbent canister smashed (usually by a saddle by a cavalry unit)
    The absorbent leaks from here--------

683B-683F-
-Nameplate-

1. Samples of Damaged Parts of the Gas Mask (4) (Part 2 of 2)
2. (1) A leak in the outlet duct of the angletube.
   (2) A scratch on the outlet valve guard.
3. (1) A leak on the connected part, meddle of the angletube.
   (2) A scratch on the outlet valve seat support.
4. Deterioration of the outlet valve guard. (Cause of trouble on the outlet valve).
5. Wrong attachment, ofithe outlet valve.
6. Wrong attachment of the outlet valve.
7. Faulty attachment, of the outlet valve. (This is frequent).
8. Faulty attachment, which is not complete, of the outlet valve. (Infrequent)
9. Kinds of dimness.
10. Kinds of damage by impingement.
11. A scratch on the eyelens by sandpaper which was used to scratch off rust inside of the eyelens retainer ring.
12. Damage on the tightening part of the canister fastener.
13. Deformation of the canister fastener.
14. Deformation caused by a wrong attachment. Left--Type 87, Mask, Right--Type 91 Mask.
15. A too soft rubber caused by too frequent vasoline applications. Left--Type 87, Mask , Right--Type 91 Mask.
16. Old outlet valve (leaking). Left--Type 87 Mask, Right--Type 91 Mask.
17. Antidim disk damaged by moisture, etc., because of reason given below.
18. Poor air-seal caused by deterioration of the can of accessories or a cover without a packing ring.
19. The eyelens which does not fit in the retainer ring, because of a reason mentioned next.
20. The gasket ring expanded and extended by applied vasiline.
21. Badly kept eyepiece.
22. Rust on the eyering.
23. Rust on the gasket ring.
24. Damage to the eyelens.
25. Rust, of the retainer ring attached to the gasket ring.
26. Rust on the retainer ring.

6830-

Nameplate-

1. Material Samples of Parts of Gas Mask (A)
2. Facepiece
3. Eyelens Retainer Ring
4. Eyelens Seat Ring
5. Eyelens
6. Eyelens Gasket Ring
7. Eyering
8. Angletube
9. Band Ring, (Above) Large
10. (Below) Small
10. Hosetube Fastener
11. Outlet Valve
12. Outlet Valve Guard
13. Hosetube
14. Cotton Cloth Band For Buckle Attachment
15. Tightening String
16. Silk Cloth Rubberized On Both Surfaces
17. Rubber Tape for Seam Of Part of Chin
18. Straps, (Left) C(2)
(Middle) B (1)
(Right) A (2)
19. D-Rings
20. Slide Fastener
21. Quick Release Buckle
22. Trapezoidal Metal Loop
23. Head Pad

Remarks: The list of notations on the various items in each display were obtained from translations of the information on the plates below the various items. These displays would be useful for teaching military personel proper care of gas mask.

[redacted]

581-TRAINING AIDS, C.W. AGENTS

General:

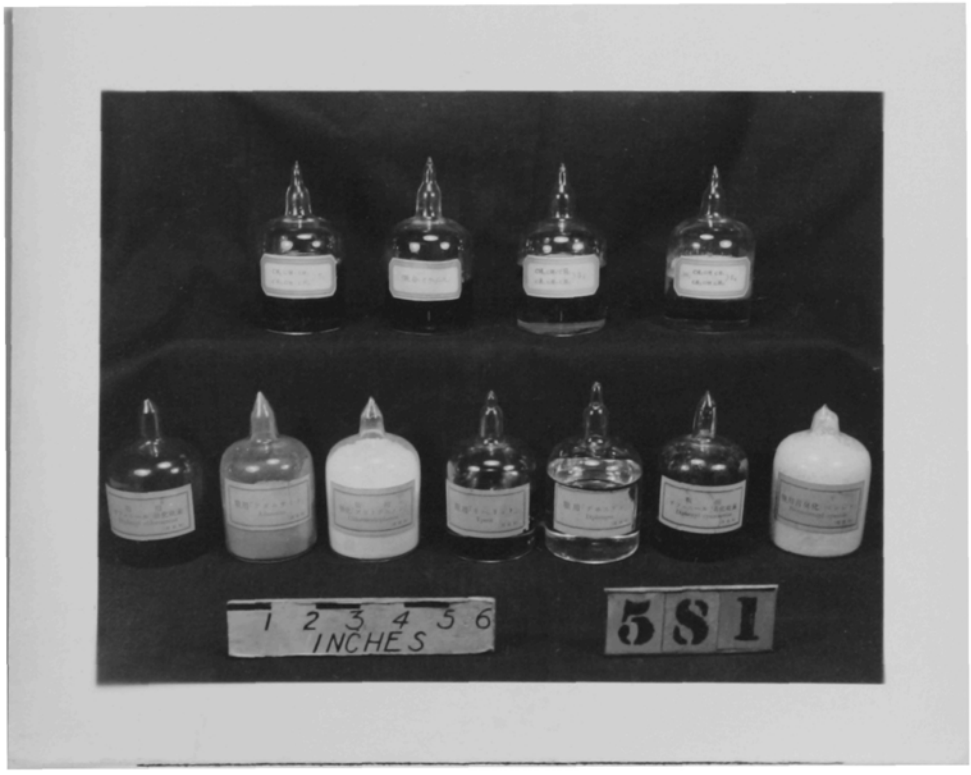
Color:	Clear glass bottles.
Markings:	Japanese characters and/or English letters giving nomenclature.
Components:	11 glass bottles containing agents.
Dimensions:	4½ in. long (approx.) (for each bottle) 2½ in. long.

Description: The agents are divided into two groups: imitation agents, original agents. ( )

There are seven samples of the agents: The CN is a white crystaline powder which is very similar to table salt in appearance. The mustard is abrownish liquid very similar to real mustard. The sample of Adamsite is a green amorphorus powder. The diphosgene is a clear liquid. The sample of diphenyl cyanoarsine is a dark brown crystalline solid. The diphenyl chloroarsine is a flaky solid. The bromobensyl cyanide is a cream colored powder.

There are four samples of the original agents: The sample of the crude di-thio diglycol is a brown oily liquid. Another sample of di-thio diglycol is a darker brown color than the first, but it isnet known whether or not it is a better grade than the first sample. There is a sample of tri-thio diglycol which is a darker brown than either of the di-thio diglycol samples. The fourth sample can not be identified, but the translation of the label gives the following: "a mixture of oxzol." It is darker than either of the 3 samples above and is an oily liquid.

Remarks: It is thought that these samples are used to train technicians the color and appearances of C.W. agents. The shipping case was not available for examination. The method of packing the samples is not known.

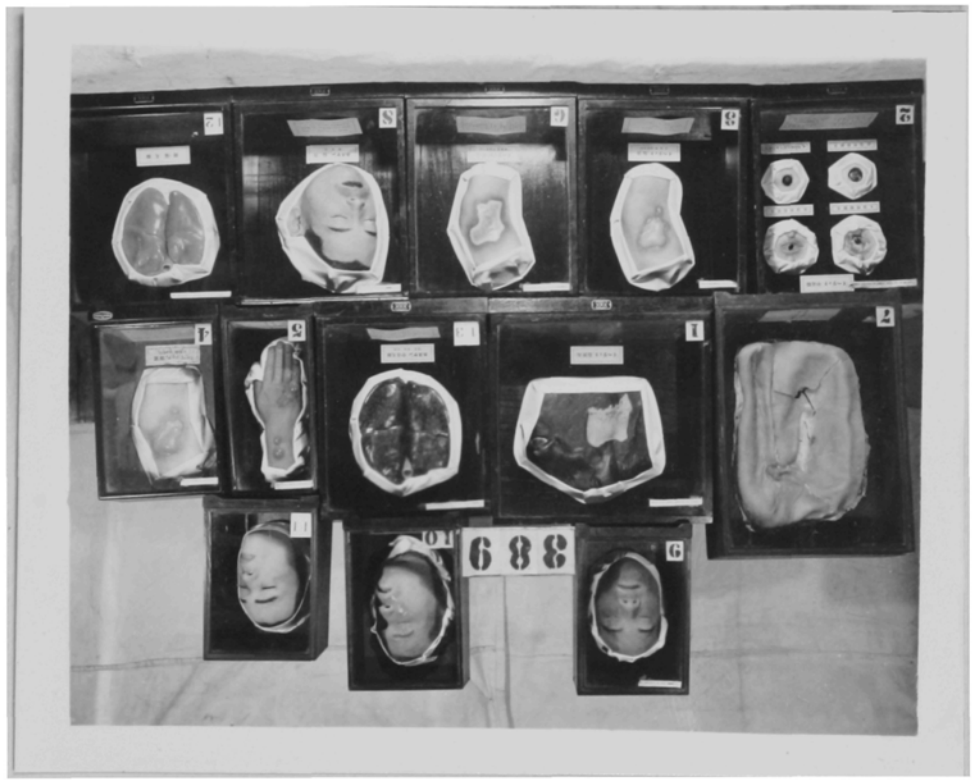


[redacted]

389-TRAINING AIDS, PHYSIOLOGICAL EFFECTS OF C W AGENTS

General: This group of wax models showing effects of chemical agents are enclosed in wooden cases closed in front by glass. The cases are wider at the base, slope to a smaller dimensionsat the top. Below are shown the data obtainable from the individual cases. Numbers in the photograph refer to numbers in the chart

No.	Color	Translation of Markings	Dimensions	Weight
1.	Black	Result of vesicant agent on a horse (mustard)	16½ in. high, 8½ in wide	9½ lbs.
2.	Black	Action on human eyes in different stages of vesicant burns. (Mustard	16 in. high, 7 in wide, 12 ½ in long	5 lbs.
3.	Black	Vesicant agent blisters (Mustard)	16 in high, 8½ in. wide, 12 3/4 in. long	7 lbs.
4.	Black	Vesicant agent blisters (Mustard)	13⅜ in high, 9 in wide 7 in long	5 lbs.
5.	Black	Severe case of vesicant burns (Mustard)	14 in high, 9½ in. wide 6 3/4 in. long	4 lbs.
6.	Black	Ulceration stage of vesicant agent burn (Mustard)	16in. high, 8½ in. wide 12 3/4 in. long	7 lbs.
7. &	Black	Light infection of vesicant vapor (Mustard)	19in. high, 9in. wide 13 3/4 in. long	8 lbs.
8.	Black	Case of phosgene -Purple- blue suffocation	16in. high, 8½ in. wide 12 3/4 in. long	7 lbs.
9.	Black	Light case of phosgene- Blue suffocation	12½ in high, 8½ in wide 8½ long	4 lbs.
10.	Black	Heavy case of phosgene -Grey suffocation	12½ in high, 8½ in. wide 8½ in. long	3½ lbs.
11.	Black	Heavy case of phosgene -pale suffocation	12in. high, 7½ in. wide 8½ in. long	3½ lbs.
12.	Black	Dog lungs after subjection to phosgene	16in. high, 7¼ in. wide, 12 3/4 in long	6½ lbs.
13.	Black	Dog lungsafter subjection to phosgene	16in. high, 7½ in wide, 12 3/4 in long	6½ lbs.



389-TRAINING AIDS, PHYSIOLOGICAL EFFECTS OF C W AGENTS.

I.) GAS WARNING EQUIPMENT

There are two factors which contribute to the effectiveness of a gas alarm, one is the intensity of the noise made, the other the distinctiveness of the tone quality of the device. Of the equipment in this category covered by these reports, these factors are not combined in any single piece of equipment. The sirens are effective noise makers but sound like any other deep throated sirens. The wooden stick alarms have distinctive tone but have a limited range for audibility.

[redacted]

198-SIREN, SMALL

Ref: TNL #4

General:

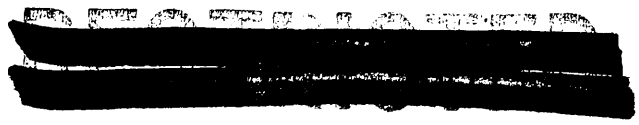
Color:	Brown
Markings:	Japanese characters on label translated to read: January 1935 Ibuki Manufacturing Co.
Dimensions:	5" long, 5" wide, 5" high (handles folded for carrying)
Weight:	1¼ lbs.

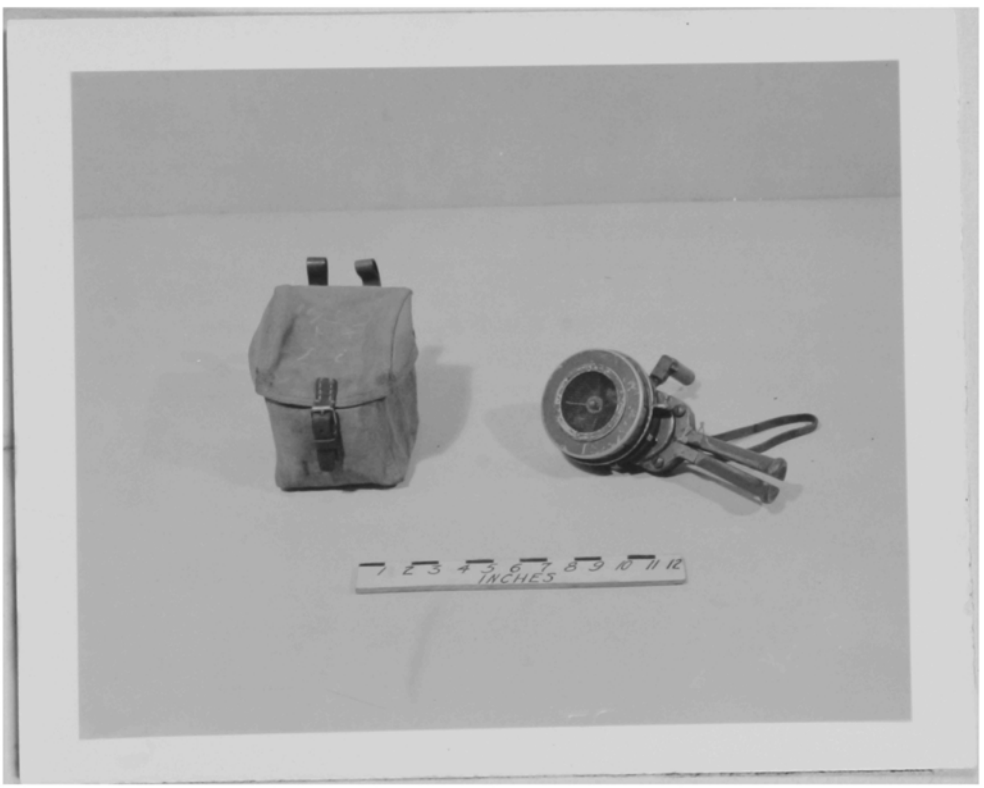
Description: The flap of the canvas carrier fastens in front with a leather strap and a metal buckle. Two leather loops make it possible to carry the siren on a waist belt. A piece of leather stiffens the back of the carrier.

The siren handle is split and folds against the wind chest. The overall length of the alarm with the handles open is 10". The wooden crank handle is of the collapsible type. A seven inch leather loop is fastened to the bottom of the siren.

The circular wind chest measures 4½" in diameter. Inside the chest, the metal disk rotates when the crank is turned. The eight blades of the disk correspond with the eight apertures around the periphery of the chest. The size of these apertures can be regulated by pressing the thumb against a lever; a spring brings it back in place and keeps the holes closed when there is no pressure on the lever. The air-inlet is a circular opening 2½" in diameter on the flat side of the chest and is covered with wire mesh.

Remarks: For additional information use reference TNL #4-page 163.





198-SIREN, SMALL

601-SIREN, PORTABLE

General:

Color:	Brown canvas carrier
Markings:	Japanese characters in black flap
Dimensions:	12" long, 12" wide, 9" high.
Weight:	15.8 lbs.

Description: The flap of the canvas carrier fastens in front with two leather straps and two metal buckles. Two small side flaps fold underneath and tie together. The inside is reinforced with leather, four, triangular pieces in the bottom corners and a 6" long, 5" wide piece in front and back. Two pockets in the upper left hand corner of the back are empty, but these were evidently intended for spare parts. The Japanese characters printed on the flap read, "Small Sound Alarm Bag". Two adjustible leather shoulder straps facilitate carrying the siren as a pack.

The siren, supported by its two twelve inch bipods, stands twenty-two inches high. The wind chest has a diameter of nine inches and measures two and three quarter inches across. The elipsoidal crank-shaft housing measures 6" long, 4" wide, 2⅝" thick. A red tag indicates that the alarm was manufactured in Sept., 1933 by the Ichihara Manufacturing Co., Tokyo.

Inside the wind chest, the metal disk rotates when the crank is turned. The size of the eight apertures around the periphery of the chest, which correspond to the eight blades of the disk, can be regulated by a knob located at the top of the chest. The air-inlet is a circular opening, 5¼" in diameter, in the flat side of the wind chest, and the opening is covered with wire mesh.

For compactness, the wooden crank handle is of the collapsible type, and bipods pivot against the wind chest. The bipods are held in place, opened or closed, by a three inch pin, which is chained to the bipod.

[redacted]



- [redacted]M, PORTABLE

[redacted]

649-GA. ALARM STICKS

General:

Color:	Oak wood.
Markings:	A white paper label is glued to each stick.
Components:	A pair of rectangular, bevel edged, oak sticks tied together with a length of twine
Dimensions:	Each stick is 10½ inches long by 1-3/8 in. square on the cross section.
Weight:	1 lb. per pair.

Description: This item is composed of two rectangular, bevel edged, hardwood sticks which are tied together with a short length of twine. They are operated by striking one stick sharply against the other. They emit a distinctive sound tone when struck.

Remarks: The label translation indicates that these alarm sticks were intended for civilian defense. Similar sticks have been used by the Japanese civilian population for fire alarms.



[redacted]

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