

**TB 10-405-1**

**WAR DEPARTMENT TECHNICAL BULLETIN**

**COFFEE  
BREWING**

*Ref.: TM 10-405, The Army Cook*

**WAR DEPARTMENT • 2 MARCH 1944**

### **Take only amount needed**

1) Determine how many men are to be served and make only the proper amount of coffee needed for a meal. Seven and one-half gallons of coffee are sufficient for 100 men. To make this amount use 3 pounds of ground coffee  $7\frac{1}{2}$  gallons of water.

2) Don't make more coffee than will be consumed at any one meal. Stale coffee is bitter and has lost its aroma. Never add old coffee to new brew. This will ruin the flavor of the fresh coffee.

### **Discard coffee grounds**

Ground coffee cannot be used more than once. Coffee grounds from which coffee has been made must be immediately discarded. Never use any portion of a second time. Once coffee grounds have been used for brewing coffee, a maximum amount of coffee brew has been derived from them. It is impossible to make good coffee from used grounds.

### **Time the preparation of coffee**

1) Accurately time the preparation of coffee so that the brew is ready more than 15 minutes before it is served. Maintain the coffee brew at a uniform temperature below the boiling point ( $175^{\circ}$  to  $185^{\circ}$  F.) until and during the time required for actual service.

2) Coffee loses both flavor and aroma when permitted to stand for long periods after it is brewed. The cook who makes the coffee should follow a timetable indicating specific times when steps in coffee brewing are to be taken. When this is done, coffee can be ready for serving at exactly the proper time.

### **Keep equipment clean**

1) All coffee-making equipment must be cleaned carefully, immediately after it is used. Coffee contains certain elements which attach themselves to the equipment. These elements develop a rancid taste upon contact with the equipment in the air. Within 24 hours they will have an objectionable odor and that will be apparent in the next brew, if the equipment is not carefully cleaned.

2) If a filter cloth, bag or sack is used in making the coffee brew, it must be washed out in clear, cold water immediately after use and left submerged in water, until time to use it again. This keeps the filter sweet. If a filter cloth, bag or sack is allowed to dry, it will sour and ruin the flavor of the next brew. Never use soap or other cleaners on a cloth filter.

3) Note: Discoloration of the filter cloth, bag or sack does not affect its use, provided the cloth has been properly cared for.

### **3. RECIPE FOR COFFEE**

#### **Ingredients necessary for making a coffee brew are:**

- 1) Freshly-roasted and ground coffee.
- 2) Fresh boiling water.

### **b. To make the most satisfactory brew**

The coffee must be fresh and the water freshly-boiling. Water that has boiled for a long time has a flat taste. If this water is used for making coffee, the flat taste will be imparted to the brew.

### **c. Coffee for 100 men**

- 3 pounds ground coffee (3-#56 dippers, heaping full)
- $7\frac{1}{2}$  gallons freshly-drawn water

This recipe makes  $7\frac{1}{2}$  gallons of coffee, sufficient for 100 men for one meal. Always use the proportion of 1 pound of coffee to  $2\frac{1}{2}$  gallons of water, no matter what method of preparation is used. (One #56 dipper, heaping full, holds 1 pound of ground coffee.) The addition of egg shells, salt or any other foreign substance does not in any way improve the quality of the finished brew.

### **d. Table of proportions**

NUMBER OF MEN TO BE SERVED	REQUIRED AMOUNT OF COFFEE BREW	NECESSARY AMOUNT OF GROUND COFFEE
33	$2\frac{1}{2}$ gallons	1 pound
66	5 gallons	2 pounds
100	$7\frac{1}{2}$ gallons	3 pounds
133	10 gallons	4 pounds
166	$12\frac{1}{2}$ gallons	5 pounds
200	15 gallons	6 pounds
233	$17\frac{1}{2}$ gallons	7 pounds
266	20 gallons	8 pounds
300	$22\frac{1}{2}$ gallons	9 pounds
333	25 gallons	10 pounds
366	$27\frac{1}{2}$ gallons	11 pounds
400	30 gallons	12 pounds
433	$32\frac{1}{2}$ gallons	13 pounds
466	35 gallons	14 pounds
500	$37\frac{1}{2}$ gallons	15 pounds
533	40 gallons	16 pounds

### **4. IMPORTANCE OF PROPER BREWING**

a. It takes no great skill to make coffee, but good coffee is not a matter of chance. For satisfactory results, it must be made carefully, by persons who are familiar with the product and the brewing equipment.

b. If proper care is taken, good coffee can be made in any one of several ways, depending upon the equipment available. Different types of coffee brewing equipment are now in use by the Army. The cook must know how to brew coffee in all types.

## 5. METHODS OF COFFEE BREWING

### Making coffee in an open kettle

#### 1) Equipment

a) *Stock pot.* Stock pots vary in size. If possible, choose a pot that most nearly approximates the amount of coffee to be brewed for each meal. If a pot has a draw-off faucet at the bottom is available, the faucet will be very useful in serving the coffee. The stock pot selected for brewing coffee should be reserved exclusively for this purpose.

b) *Brewing sack.* 1. If possible, use the 50-lb. muslin sack in which coffee has been shipped from the roasting plant to the camp. If sacks of this type are not available, a 100-lb. sugar sack may be used.

2. In the event that neither coffee nor sugar sacks are available, flour, rice, or any sacks of *similar material* can be used. Never use a burlap sack.

3. Sacks must be thoroughly washed and rinsed before being used.

#### 2) Directions

*Step 1.* Measuring carefully, put required amount of freshly-drawn water into stock pot, allowing 2½ gallons of water for each pound of coffee. (Fig. a.) For one and one-half gallons of coffee serve 100 men for one meal. For each 100 men to be served, measure 7½ gallons of water into the pot. Place stock pot over fire to boil the water.

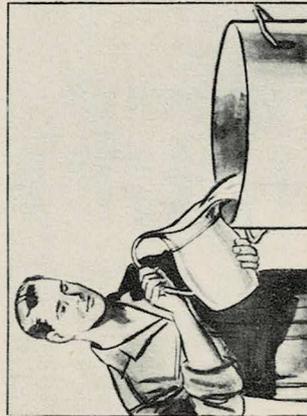


Fig. a.

*Step 2.* Measure ground coffee and place in sack. (Fig. b.) Use one pound of coffee for each 2½ gallons of water (one #56 dipper, heaping full, is 1 pound of coffee). Tie top of sack securely with a cord long enough to be fastened to handle of container to facilitate removal. (Fig. c.) Leave as much slack as possible. Tying the sack in this manner makes it easier to empty. No more than 15 lbs. of ground coffee should be placed in any one sack. Sufficient room must be allowed in the sack to permit the water to circulate through it, and to allow for expansion of the coffee. By allowing sufficient room in the sack, extraction is obtained from all the grounds. Water-logged bags of used grounds are more easily removed after the completion of brew when they are not over-filled.



Fig. b.



Fig. c.

*Step 3.* As soon as the water in the stock pot comes to a furious boil, push the pot away from direct heat to reduce the temperature of the water to just below the boiling point.

*Step 4.* Immediately insert the sack containing the grounds into the water. (Fig. d.) Using a stick or paddle, push sack up and down in the water, forcing water to pass through the grounds. (Fig. e.) Do this frequently during brewing period—otherwise, full extraction cannot be reached and a weak brew results.

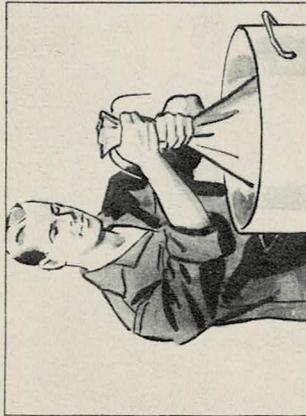


Fig. d.



Fig. e.

*Step 5.* In 12 to 15 minutes, lift sack out of the brew, permitting all water to drain into pot. (Fig. f.) Then remove sack entirely.

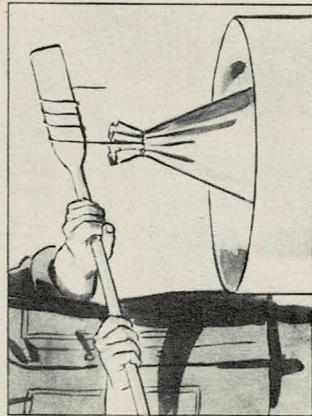


Fig. f.

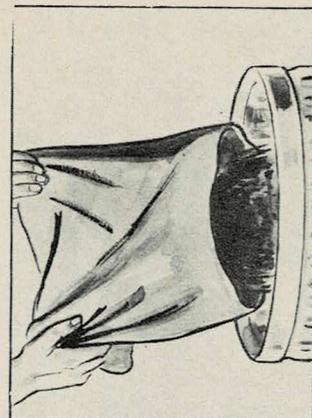


Fig. g.

*step 6.* Serve coffee at once. As boiling destroys flavor, do not allow brewed coffee to boil. Until and during the time required for actual service, maintain coffee brew in the stock pot at a uniform temperature below the boiling point (175° to 185° F.).

*step 7.* Empty sack containing grounds immediately after it is removed from the pot. (Fig. g.) Wash the sack thoroughly in cold water (Fig. h.), and if submerged in cold water until the next time it is used. (Fig. i.) Never let the sack to dry. Keeping it wet keeps it sweet. If a sack does become dry, use it again.

Do not wash sack with soap; some soap particles will be absorbed by the sack and will impart a foreign taste to the next brew.

For best results in brewing coffee it is recommended that sacks be replaced at least once a week. Discoloration of the filter sack does not affect its utility, provided the sack has been properly cared for.

*step 8.* Scour kettle immediately after use, and rinse carefully. Scrub the kettle with a special small brush. (Fig. j.) If the coffee utensil is not thoroughly cleaned, a disagreeable taste will be imparted to the next brew.

**3) Emergency method**  
If, in an emergency, no filter sack is available, coffee can be made in a stock kettle by the following procedure:

*step 1.* As in regular kettle method, measure required quantity of freshly-brewed coffee in cold water into stock pot and bring to a vigorous boil.

*step 2.* As soon as water comes to a vigorous boil, push the pot away from the heat, to reduce temperature of the water to just below the boiling point.

*step 3.* Immediately add measured amount of ground coffee in correct proportion to amount of water used. Use 1 pound of coffee (one #56 dipper, or 1 cup full) for each 2½ gallons of water.

*step 4.* Allow coffee to brew for 10 to 12 minutes, stirring occasionally. Do not permit the brew to boil.

*step 5.* After the brewing period, if the grounds have not settled, sprinkle a small quantity of cold water (not to exceed one cup for each pound of coffee) on the brew to settle the grounds.

*step 6.* Serve the coffee as soon as it is made, carefully ladling it out without stirring up the grounds. This method of brewing prohibits the use of a siphon for drawing the coffee.

*step 7.* Scour kettle carefully immediately after use, and rinse thoroughly;



Fig. h.

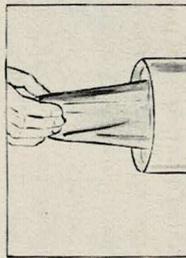


Fig. i.



Fig. j.

otherwise the next brew will have a disagreeable taste. Do not use the pot or kettle in which the coffee is brewed for any other purpose.

### b. Making coffee in urns

#### (1) Definition

A coffee urn is a device designed for making coffee, and keeping the coffee brew at a uniform temperature while it is being served.

#### (2) Equipment (Fig. k.)

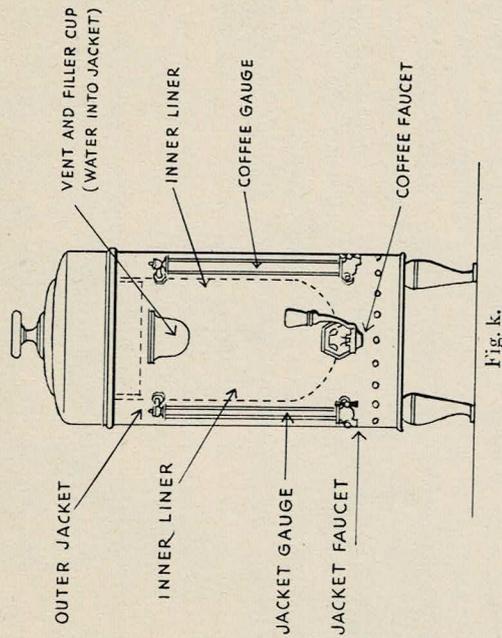


Fig. k.

(a) A coffee urn consists of:

1. Inner liner or crock, where coffee is brewed and kept hot until served.

2. Outer jacket, which is filled with hot water to keep the coffee in the crock hot.

3. Two draw-off faucets; one for drawing coffee from the crock, one for drawing water from the outer jacket.

4. Two gauge glasses; one registering the amount of brewed coffee in the crock, one registering the amount of water in the outer jacket.

(b) A battery of coffee urns (pressure type) (Fig. l) consists of two coffee urns, one on each side of a large hot water boiler in which the water for making coffee is boiled. This boiler has a gauge glass registering the amount of water it contains. It is connected to the general water supply by a valve to facilitate filling. In a 3-piece battery of this type, there are two connecting pipes from the boiler to each urn. The top pipe or syphon transfers the water from the boiler into the inner crock of the adjacent coffee urn. The lower pipe or syphon transfers water from boiler to urn when the water in the boiler reaches the boiling point and is forced over by pressure.

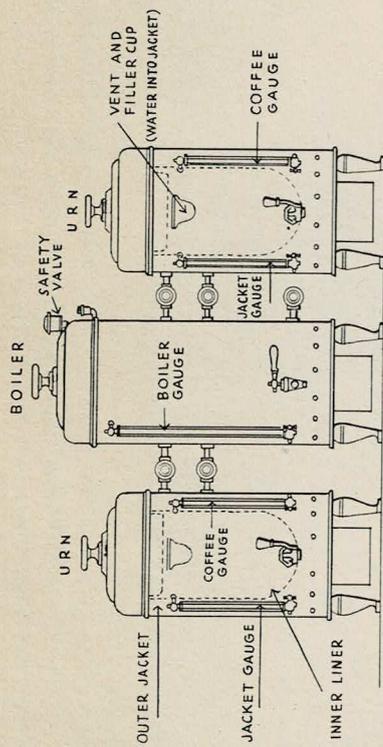


Fig. 1.

(c) A battery of coffee urns (gravity type) (Fig. m.) is built like a pressure type battery, except that the center boiler is elevated above the two urns only ONE pipe connects the boiler to each urn. The pipe leads from the boiler to the inner crock of each urn and water is transferred from the boiler by gravity. The outer jackets of the urns are filled through valves connected to the cold water supply. All boilers in gravity type batteries are equipped with thermometers to determine the temperature of water in the boiler. Do not connect valves between boiler and urns to allow transfer of water. Water in boiler is actually boiling.

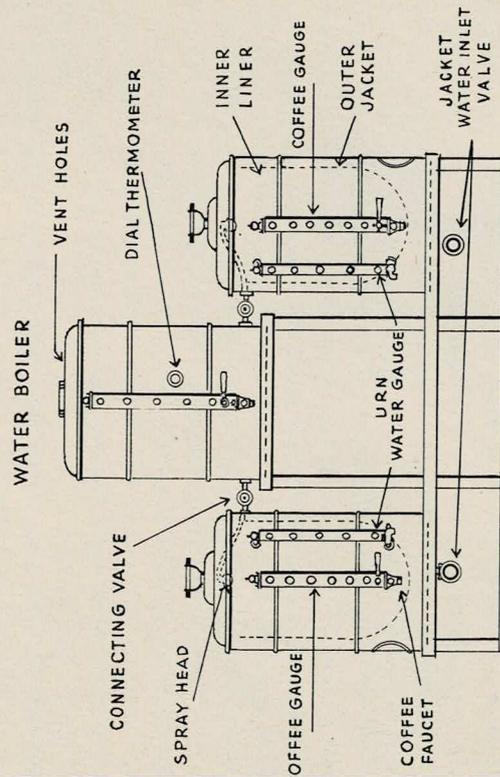


Fig. m.

(d) A combination urn (Fig. n.) consists of: Two coffee urns and a boiler combined into one large device. In a combination urn, the two inner liners or crocks have a common water jacket, and tank, which serves the dual purpose of boiling the water used in making the brew, and holding the brew at a uniform temperature.

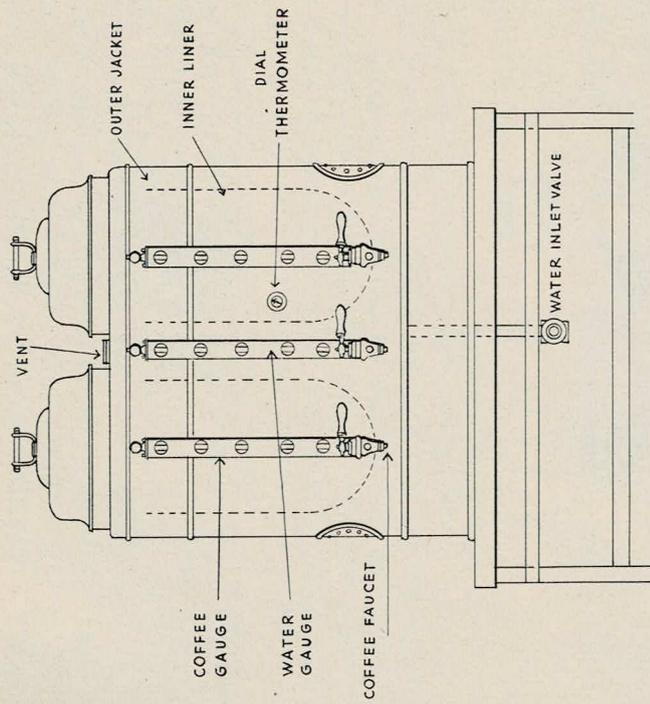


Fig. n.

### (3) Urn bag method

- (a) In this method an urn bag is used with the equipment. The urn bag is made of muslin and has a hem which slips over a metal ring. The ring rests on the top of the inner liner or crock of the coffee urn.
- (b) The ring must be the correct size for the urn, and the bag must be the correct size for the ring. Bag sizes are determined by the diameter of the ring. If the diameter of the ring is 16 inches, a 16-inch urn bag should be used.
- (c) Urn must not be used to more than 80% of its capacity. If urn is used to full capacity, the bottom of the bag will be submerged in the brew, and cause the brew to become bitter.

ollow this table:

Capacity of Urn	Maximum Amount of Coffee That Can Be Brewed
5 gallons	4 gallons
10 gallons	8 gallons
15 gallons	12 gallons
20 gallons	16 gallons
30 gallons	24 gallons
40 gallons	32 gallons

*Step 1.* After closing all other valves and faucets, fill the boiler with drawn water by opening the valve from the cold water supply. When glass on boiler registers that the boiler is full, close inlet valve and turn at. Do not turn on heat under the boiler before it contains water.

*Step 2.* By opening valves on lower pipes connecting boiler to urns, fill urn jackets  $\frac{3}{4}$  full of water. (In gravity type battery fill outer jackets by opening water inlet valves.) Turn on heat so that inner liners will be well when coffee is ready to be brewed. Do not fill urn jackets to capacity; steam from the heat will cause the water to overflow.

*Step 3.* Rest the ring with urn bag attached (seam side in) on top of crock of urn, making certain crock is clean and contains no water. (Fig. o.) Use proper amount of ground coffee into the bag. Allow 1 pound of (one #56 dipper, heaping full) for each  $2\frac{1}{2}$  gallons of water. Seven one-half gallons of coffee serve 100 men for a meal. For each 100 men to be served, use 3 pounds of coffee and  $7\frac{1}{2}$  gallons of water.



Fig. o.

*Step 4.* When the water in the boiler comes to a vigorous boil, the safety in the pressure type battery will blow steam, or in the gravity type battery the thermometer attached to the boiler will register  $212^{\circ}$  F. As soon as the boils, open the faucet on the boiler and draw the required amount of water from the boiler in a gallon measure, one gallon at a time. Pour water over the grounds in the urn bag, using a circular motion to insure saturation of all grounds. (Fig. p.) Pour water into bag slowly, being careful not to overflow the bag. As the water drips through the coffee into

the crock of the urn, continue to pour boiling water over grounds until the required amount has been transferred.

The boiling water may also be transferred into the urn bag through the syphon leading from the boiler to the top of the crock of the urn. The operator measures the amount of water transferred by watching the gauge glass on the boiler. (Fig. q.) The level of water and grounds in the urn bag must also be watched to avoid an overflow of the bag. An overflow would cause some of the grounds to fall into the brew.

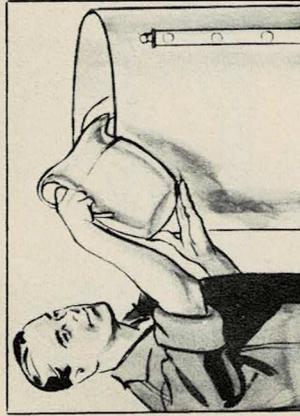


Fig. p.

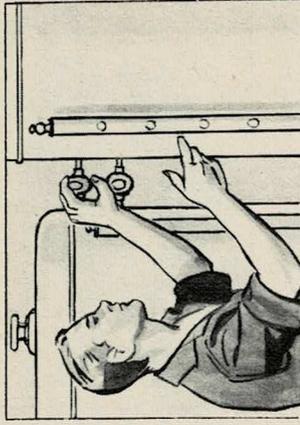


Fig. q.

*Step 5.* When the correct amount of boiling water has been transferred from boiler to urn bag by either method, repour brewed coffee through the grounds in the ratio of 50% of the amount of water originally transferred. (Fig. r.) For instance: If 10 gallons of water have been used, repour 5 gallons of brewed coffee through the grounds, one gallon at a time. Care must be taken to prevent an overflow of the bag.



Fig. r.



Fig. s.

*Step 6.* When all the coffee has dripped through the grounds into urn, remove urn bag and ring immediately. (Fig. s.)

*Step 7.* Empty urn bag containing used grounds immediately after it is removed from urn. It is not necessary to remove the bag from the ring after each use. Wash the bag thoroughly in cold water (Fig. t.) and keep it submerged in cold water until the next time it is used (Fig. u.). Never permit the bag to dry. Keeping it wet keeps it sweet. If a bag does become dry, do not use it again.

do not wash bag with soap; some soap particles will be absorbed by the and impart a foreign taste to the next brew.

For best results in brewing coffee it is recommended that urn bags be re-used at least once a week. Discoloration of the bag does not affect its utility and the bag is properly cared for.



Fig. t.

Fig. u.

Step 8. Serve the coffee at once.  
 Step 9. Coffee urns must be cleaned thoroughly after each use, according to instructions given in paragraph 5 b (6).

(c) Metal basket drip method  
 (d) In this method of brewing coffee in an urn, a metal basket and filter are supplied with the equipment. The metal basket is a separate device that fits down into the upper part of the coffee urn. The filter paper is of a standard type and must be the exact size of the bottom of the metal basket.

(e) Note: Some devices are equipped with a fine mesh sieve instead of filter paper. If this is the case, follow the same procedure of brewing outlined above, omitting the use of the filter paper. Do not omit use of filter paper in equipment designed for use *with* paper. If filter paper is omitted in this equipment coffee grounds will seep through into the finished brew.

(f) Step 1. After closing the other valves and faucets, fill the boiler with city-drawn water by opening the valve from the cold water supply. When the glass on boiler registers that the boiler is full, close inlet valve and turn off heat. Do not turn on heat under the boiler before it contains water.

Step 2. By opening valves on lower pipes connecting boiler to urns, fill urn jackets  $\frac{3}{4}$  full of water. (In gravity type battery, fill outer jackets by opening water inlet valves.) Turn on heat so that the inner liners will be well heated when coffee is ready to be brewed. Do not fill urn jackets to capacity; expansion from the heat will cause the water to overflow.

Step 3. Place the filter paper inside thoroughly dry metal basket, on top of bottom metal sieve. If a ring is provided for locking the filter paper in place, insert the ring carefully and lock it.

Step 4. Measure the proper amount of ground coffee into the metal basket and tamp it down with the filter paper. Allow one pound of coffee (one #56 dipper, heaping

full) for each  $2\frac{1}{2}$  gallons of water. Seven and one-half gallons of coffee serve 100 men for a meal. For each 100 men to be served use 3 pounds of coffee and  $7\frac{1}{2}$  gallons of water.

A small quantity of coffee cannot be made by this method in large equipment. For example: 5 gallons of coffee cannot be made in equipment designed to make 20- or 40-gallon batches. In such cases the insufficient quantity of ground coffee in relation to the diameter of the basket allows the water to go through the grounds too quickly, resulting in a weak brew.

Likewise, an extra large quantity of coffee cannot be made by this method in small equipment. For example: 20 gallons of coffee cannot be made with a metal basket designed to make 5-gallon batches. The depth of grounds in the metal basket device retards the free flow of water through the grounds. This results in over-extraction and bitter coffee. Also, the brewing time is prolonged for an unreasonable period. In some cases, filtration may be stopped altogether, and the water will overflow from the device into the crock without having passed through the grounds.

Step 5. Insert water spreader, which is another metal sieve that locks in place just above the coffee grounds in the basket.

Step 6. Fit the metal basket containing the grounds into the top of the crock, making certain the crock is clean and contains no water.

Step 7. When the water in the boiler comes to a vigorous boil, the safety valve in the pressure type battery will blow steam, or in the gravity type battery the thermometer attached to the boiler will register  $212^{\circ}$  F. As soon as the water boils, open the faucet on the boiler and draw the required amount of boiling water from the boiler in a gallon measure, one gallon at a time. Pour the water into the metal basket slowly, being careful not to overflow the basket.

Water should not be transferred into the metal basket through the syphon that leads from the boiler to the top of the crock of the urn, unless there is an extension on this pipe allowing the water to flow into the center of the basket. If the equipment is provided with such an extension, the operator may transfer the water by opening the valve on this pipe. Amount of water transferred is measured by watching the gauge glass on the boiler. The level of water and grounds in the metal basket must be watched to avoid an overflow of the basket.

Step 8. When the correct amount of water has been transferred from the boiler to the metal basket, and all the water has dripped through the grounds, remove the basket entirely from the urn. Draw off  $\frac{1}{4}$  of the brewed coffee and repour this amount directly into the crock. This serves to equalize the strength of the finished brew. Use a circulatory pump if the coffee-making device is so equipped.

Be certain to remove the basket *before* repouring. In this method of brewing it is not necessary to repour any coffee back through the grounds.

Step 9. Empty the used grounds and the filter paper from the metal basket immediately after it is removed from the urn.

Step 10. Serve coffee at once.

Step 11. Coffee urns must be cleaned thoroughly after each use, according to instructions given in paragraph 5 b (6).

#### Dunking method

In this method, a filter sack is used with the equipment. If possible, use a filter the 50-lb. muslin sack in which coffee has been shipped from the plant to the mess hall. If sacks of this type are not available, a 100-lb. sack may be used. In the event that neither coffee nor sugar sacks are available, flour, bean, rice or any sacks of similar material can be used. Sacks should be thoroughly washed and rinsed before being used. Never use a burlap sack.

Step 1. After closing all other valves and faucets, fill the boiler with city-drawn cold water by opening the valve from the cold water supply. Use a gauge glass on boiler registers that the boiler is full, close inlet valve and stop heat. Do not turn on heat under the boiler before it contains water.

Step 2. By opening valves on lower pipes connecting boiler to urns, fill urns with  $\frac{3}{4}$  full of water. (In gravity type battery fill outer jackets by opening valves.) Turn on heat so that inner liners of the urns will be well heated. Coffee is ready to be brewed. Do not fill urn jackets to capacity; expansion of the heat will cause the water to overflow.

Step 3. Measure ground coffee and place in filter sack (Fig. v.). Allow one pound of coffee (one #56 dipper, heaping full) for each  $2\frac{1}{2}$  gallons of water. For each 100 men and one-half gallons of coffee serve 100 men for a meal. For each 100 men to be served use  $7\frac{1}{2}$  gallons of water and 3 pounds of coffee. Tie the top of sack securely with a cord long enough to facilitate removal (Fig. w.).



Fig. v.

Fig. w.

Step 4. When the water in the boiler comes to a vigorous boil, the safety valve in the pressure type battery will blow steam, or in the gravity type battery the thermometer attached to the boiler will register  $212^{\circ}$  F. As soon as this temperature is reached, insert the sack containing the grounds into the inner liner or crock of the urn, making certain the crock contains no water and is clean.

Step 5. Open the faucet on the boiler and draw the required amount of boil-

ing water from the boiler in a gallon measure, one gallon at a time (Fig. x.). Pour the water into the crock of the urn (Fig. p.).

The boiling water may also be transferred into the crock through the syphon leading from the boiler to the top of the crock of the urn. In this method, the operator measures the amount of water transferred by watching the gauge glass on the boiler (Fig. y.).



Fig. x.

Fig. y.

Step 6. As the water is being transferred into the crock, dunk the sack containing the grounds up and down in the water. Use a stick or paddle, forcing the water through the grounds (Fig. z.). Do this frequently during the brewing period—otherwise full extraction cannot be reached and a weak brew results.

Step 7. In 12 to 15 minutes, raise sack out of the brew, permitting all water to drain off (Fig. aa.). Then remove sack entirely.

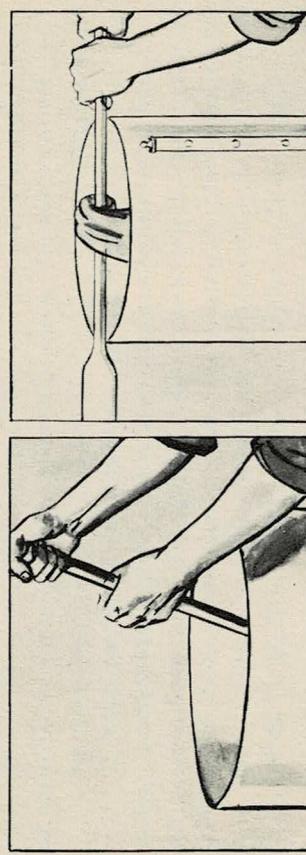


Fig. z.

Fig. aa.

Step 8. Serve coffee at once.

Step 9. Empty sack containing the grounds immediately after it is removed from the crock (Fig. ab.). Wash the sack thoroughly in cold water (Fig. ac.), and keep it submerged in cold water until the next time it is used (Fig. ad.). Never permit the sack to dry. Keeping it wet keeps it sweet. If a sack does become dry, do not use it again.

Do not wash sack with soap; some soap particles will be absorbed by the cloth and will impart a foreign taste to the next brew.

A filter sack, properly cared for, will last until it is torn. However, for best results in brewing coffee, it is recommended that sacks be replaced at least

a week. Discoloration of the filter sack does not affect its utility, if the sack is properly cared for to keep it sweet.

Step 10. The coffee urn should be cleaned thoroughly after each use, according to instructions given in paragraph 5 b (6).



Fig. ab.

5) Care of coffee urns

a) After each use to protect coffee flavor, coffee urns must be cleaned and rinsed after each coffee serving.

b) Follow this regular routine:

1. After all brewed coffee has been drawn from urn, fill the crock with two gallons of fresh hot water, and thoroughly brush it out with a long-handled, bristled urn brush.

2. Drain the water off and again fill the crock with two gallons of fresh hot water; brush it out and drain it again.

3. If urn is not going to be used again immediately, leave several gallons of water in the crock. Do not drain this water off until just before making the coffee brew.

b) Twice a week

1. Coffee urns must have a special scouring at least twice a week. To scour the urn thoroughly:

a) Fill outer jacket  $\frac{3}{4}$  full of water and turn on heat under urn.

b) Fill crock with several gallons of water and  $\frac{1}{4}$  cup of coffee cleaning compound. If special urn-cleaning compound is not available, use trisodium phosphate. Allow this solution to remain in the crock for approximately 30 minutes. During this time, heat should be on in full.

c) Scrub inside of crock and inside of cover with long-handled, stiff-bristled urn brush (Fig. ae.). Drain water off.

d) Remove clean-out cap at end of the coffee faucet and scrub thoroughly with long, thin brush (Fig. af.). Run brush through coffee gauge glass.

e) Use long, thin brush to clean plug, at bottom of crock, leading to pipe connected to coffee faucet (Fig. ag.).



Fig. ac.

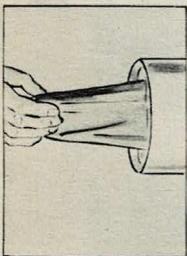


Fig. ad.

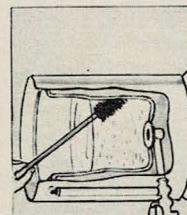


Fig. ae.

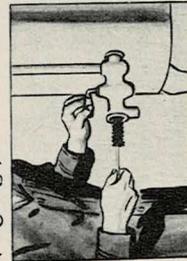


Fig. af.

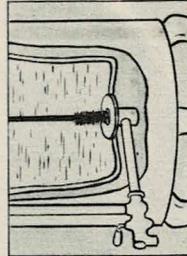


Fig. ag.

6. Rinse crock three or four times with fresh hot water, again brushing inside of crock, faucet, pipes, gauges, etc. Taste the last rinsing water to make certain that all foreign taste has been cleaned out. If the water does not taste clean, the crock must be scrubbed out and rinsed again until it does.

### c. Making coffee in small quantities

(1) A small utensil should be used in every mess for making hot coffee for cooks, members of the guard and small details, who desire coffee earlier or later than the regular serving time for the mess. In order to insure coffee for small details, some cooks make coffee for the mess as soon as the fire is started in the morning. The use of a small utensil does away with this necessity, and permits the cook to follow the time-table correctly and to serve coffee to the mess as soon as it is made.

#### (2) Methods

##### (a) Drip method

1. Preheat the device with hot water. Measure drip grind coffee into the upper chamber, using one heaping tablespoonful of coffee for each cup of water, and one extra tablespoonful. Pour proper quantity of briskly boiling water over the grounds. When dripping is completed, remove the upper chamber, dispose of the coffee grounds, and serve the brew at once. If it is not possible to serve the coffee immediately, keep it warm over low or indirect heat.

2. The coffee-brewing device must be cleaned thoroughly and rinsed after each brew. If this is not done, the next brew will have a disagreeable taste.

##### (b) Vacuum glass method

1. Fill lower bowl with fresh cold water to within one inch of the neck and place on heat. Insert filter cloth into upper bowl, and add measured quantity of finely ground coffee, using one heaping tablespoonful of coffee for each cup of water, and one extra tablespoonful. When water in the lower bowl boils (bubbles briskly), insert upper bowl with a slight twist to insure tight connection. When half the water has risen into upper bowl, reduce heat, stir water and grounds in upper bowl. Remove from heat when all but about one inch of water has risen into upper bowl. Remove upper bowl as soon as all the coffee has been drawn into lower bowl. Serve coffee at once. If it is not possible to serve the coffee immediately, keep it warm over low or indirect heat.

2. Clean the device carefully after each use. Wash filter cloth in cold water and leave it submerged in cold water until the next time it is used. Do not use soap on filter cloth, and do not permit cloth to dry out. Keeping it wet keeps it sweet.

##### (c) Percolator method

1. Fill device with proper quantity of fresh cold water and place on heat. Measure regular grind coffee into the basket, using one heaping tablespoonful of coffee for each cup of water, and one extra tablespoonful. When water boils, insert basket into percolator and allow brew to percolate for six minutes. Re-

basket, dispose of grounds, and serve coffee at once. If it is not possible  
we the coffee immediately, keep it warm over low or indirect heat.

Clean and rinse the percolator thoroughly after each use. If this is not  
the next brew will have a disagreeable taste.

) *Coffee pot method*

Measure proper quantity of ground coffee into preheated coffee pot.  
ne heaping tablespoonful of coffee for each cup of water, and one extra  
spoonful. Pour on measured quantity of fresh, briskly-boiling water. Stir  
nts for one minute. Allow to settle three minutes, then pour the brew  
h a filter into a preheated container. Serve coffee at once. If it is not  
le to serve the coffee immediately, keep it warm over low or indirect heat.  
Clean coffee pot thoroughly after each use, and rinse carefully. If cloth  
d as a filter, wash it at once in cold water and leave it submerged in  
water until the next time it is used. Do not use soap and do not permit  
oth to dry. Keeping it wet keeps it sweet.

) *Ice Coffee*

Iced coffee is made exactly like hot coffee, but *twice* as strong. For  
g iced coffee, use twice as much ground coffee to the same amount of  
as is used for hot coffee. Making coffee double strength for iced coffee  
ompensate for the dilution caused by melting ice.

For example:

<i>Hot Coffee</i>	<i>Water</i>	<i>Iced Coffee</i>
1 lb.	2½ gal.	2 lbs.
2 lbs.	5 gal.	4 lbs.
3 lbs.	7½ gal.	6 lbs.

Remove coffee brew from urn or kettle and place in a dispenser with  
ent ice to keep coffee well chilled until served.

