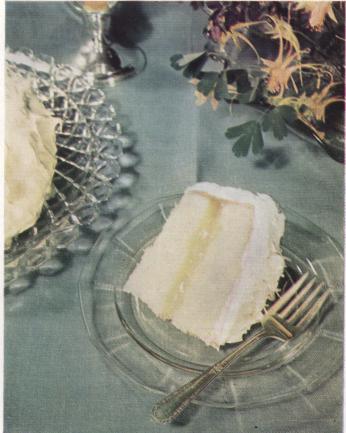
MILE-HIGH

Bulletin B-180 May, 1950









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The material in this bulletin was reprinted from Colorado A & M College Technical Bulletin 40 to meet the many requests received from homemakers.

Texas Agricultural Extension Service Texas A. & M. College System

> G. G. Gibson, Director College Station

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Recipes for High Altitudes



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MILE-HIGH Cakes

Recipes for High Altitudes

Success in baking has often been considered a measure of one's ability as a cook. A newcomer to Colorado may discover to her dismay that her favorite recipe does not produce the fine cake to which she has been accustomed. She may find that her cake rose too high and flowed over the top of the pan, or rose and then fell. Perhaps she noted a more porous and crumbly product than she had baked before. Since failures often can be explained by differences in altitude, the purpose of this bulletin is to present selected and tested recipes for altitudes of 5,000 feet, 7,500 feet, and 10,000 feet.

As the altitude increases the air pressure becomes less, and changes in recipes must be made to compensate for the difference. The usual modification in a cake containing shortening is to reduce the baking powder for each 2 cups of flour approximately ½ to ½ teaspoon for every rise in altitude of 2,500 feet. A reduction in sugar and an increase in liquid as the altitude increases may also improve the cake. However, contrary to popular opinion, there is no set rule for a homemaker to use in modifying a sea-level recipe to adapt it to high-altitude use. The modifications depend upon the amounts of and relationship between the various ingredients of the original recipe. Therefore, we have designed recipes which are particularly suitable to Colorado, and have not tried to modify the innumerable good recipes which are in use at sea level.

Types of Cakes

A variety of recipes has been included in this bulletin. These recipes may be modified to produce other interesting products.

The first group consists of cakes in which egg whites, egg yolks, or whole eggs are the only leavening agents. Angel food and sponge cakes belong in this class. Another group is composed of those which contain shortening and which are leavened with baking powder or soda. These may contain either whole eggs or egg whites. For variety, additional types of cakes such as sour-cream cakes, gingerbread, and applesauce cake, have been fincluded.

¹ By Elizabeth Dyar, Chief Home Economist, and Elizabeth Cassel, Special Assistant, with the technical assistance of Miriam Hummel, Assistant Home Economist, Elizabeth Twomey, Research Assistant, and Elsie Slayton, Research Assistant, of the Home Economics Section, Colorado Agricultural Experiment Station, Colorado A & M College.

Ingredients

Cake flour was used in all the recipes except those for ginger-bread. Cake flour is manufactured particularly to produce light and tender cakes. All-purpose flour will not yield as fine or light a product. If it must be used, 2 tablespoons of flour should be removed from each cup and 2 tablespoons of cornstarch added.

Double-acting baking powder has been used in developing these recipes but other types may be used. According to experiments in this laboratory, one and one-half times as much single-action baking powder as a given amount of double-action baking powder should be used to produce the same amount of leavening action.

Eggs should be relatively fresh, and stored in the refrigerator or other cool place until almost ready to use. They should be allowed to warm to room temperature before beating. Eggs handled in this manner produce a better spongetype cake than is obtained from eggs which have been stored at warm room temperatures.

The recipes have been adapted to three types of shortening which the homemaker finds on the market. These are: margarine² or butter, hydrogenated shortening with an emulsifying agent added, and hydrogenated shortening without an emulsifying agent.

The latter two types of shortening are not specifically labeled at

the present time so that the homemaker can distinguish between them. The emulsifying agents are usually glyceride compounds and may be named on the label. The emulsified types of shortening are to be preferred for quick-mix cakes or "streamline cakes," as they have been termed in this laboratory. The other shortenings may be used for streamline cakes if the recipe so indicates, but the volume of the cake may be somewhat less.

It has been found that more creaming should be used in the conventional-type mixing method when margarine or non-emulsified shortenings are used. It may also be necessary to reduce the liquid slightly. Special directions are included in the recipes.

Mixing Directions

General Instructions. — At increased altitudes, recipes have been found to be more sensitive to slight changes. Therefore, it is important to follow carefully the directions given for each recipe. Be sure that measurements are exact and note especially the adding or subtracting of amounts by table-spoons from cups of flour or liquid. Always use measuring spoons or cups when definite amounts of ingredients are specified.

When measuring flour and baking powder, do not pack, but spoon lightly and level off. Always sift flour before measuring. Brown sugar and fat should be packed in cup or spoon to give accurate measurements. All ingredients

² Vegetable oleomargarine.

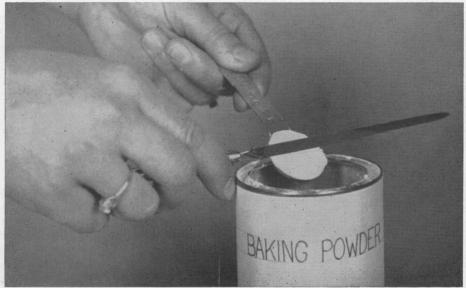


Figure 1.—Measuring a level teaspoon of baking powder.

should be at room temperature for best results.

Cakes are easier to remove from pans if waxed paper, cut to fit the bottom of pans, is used. The pan should be greased, then fitted with waxed paper and the paper greased. If preferred, the pan may be dusted with flour after greasing. Do not grease the sides of the pan. After the batter has been poured into the pan it is well to cut through it several times with a knife to release the large pockets of air which may be trapped in it. Otherwise, the air pockets may cause large holes to appear in the cake. When the cake is removed from the pan, lift off the waxed paper immediately.

A pan of definite size has been suggested for each recipe, although other sizes of pans may be used if the total area of each is the same. Mixing Methods.—Four mixing methods have been used in this investigation, and are explained below with special instructions for each.

The choice of the method of mixing depends upon the recipe and the preference of the homemaker. The quick-mix or streamline method works better with cakes which are fairly high in sugar and liquid content. Some homemakers are accustomed to the conventional type of mixing and prefer to use it. The streamline method of mixing cakes takes less time and will give a successful cake wherever it is listed for a given recipe.

Conventional Method.—This is the usual type of hand mixing. Sift the dry ingredients together. Cream the shortening until it is softened; add the sugar quite gradually, creaming until the mixture is very fluffy. Margarine or butter requires much more creaming than hydrogenated shortenings for good results. Add the flavoring at this point, as it is soluble in fat and is better distributed.

Eggs may be added one at a time and the batter beaten vigor-ously after each addition, or they may be beaten together before they are added. In some recipes, the eggs are separated and the whites added at the end of the mixing to give increased lightness.

Add the dry ingredients and the liquid in three parts. Flour is usually added first. The amount of mixing at this stage should be carefully controlled because too much mixing will yield a less tender, dry cake with tunnels and a peaked or cracked top. Too little mixing may cause a coarse-grained cake with some large holes. Counting the strokes may be helpful, especially for the beginner. For a standard cake, about 225 to 250 strokes are used for adding dry ingredients and liquid. Counting for those given in this bulletin was started after the first few strokes necessary to gently mix in the ingredients so they would not "splash." In making a rich cake, such as the chocolate or fudge cake, more strokes are needed. Since the number of strokes varies from cake to cake, a number is suggested in each recipe. However, this will vary with each individual's type of mixing. With some experimentation one can find the optimum number to use for her own technique.

When egg whites are to be added separately, beat them until they are stiff but moist. At this stage peaks will form but will bend over slightly. Fold into batter lightly and quickly.

Streamline Method. — This is a quick method for combining ingredients which recently has become popular. It also may be called either the "one-bowl" or the "mixeasy" method. There are slight variations depending upon the recipe, but usually all dry ingredients, including sugar, as well as the fat, and part of the milk are placed in a bowl and beaten for a definite length of time or corresponding number of strokes. Then the eggs and remaining liquid are added and the batter mixed a shorter length of time.

This method is especially adapted to shortenings containing special emulsifiers as discussed above. It results in a light, tender cake that is very acceptable.

Mechanical Mixer Methods.— Time and labor may be conserved by using an electric mixer for cake making, but the directions must be carefully followed to obtain best results. Since any electric mixer beats much more powerfully than can be done by hand, times of mixing and speeds recommended should be carefully observed.

Either conventional or streamline methods may be used with good results. The directions are similar to those discussed above. Use medium or high speed (the number will depend upon the make of your mixer) for creaming shortening and sugar and for adding eggs. Use low speed (number 1, the lowest speed, was used in these experiments) for adding dry ingredients and liquid. Scrape down sides of bowl frequently with a rubber scraper.

Cakes made with an electric mixer will be uniform every time they are made if care is taken in measuring ingredients, mixing times are carefully watched, and baking conditions are the same.

Baking Times and Temperatures. -Baking times for recipes may vary, depending upon the accuracy of the oven. Remove the cake when it appears to be done whether or not the exact time specified in the recipe has expired. To test for doneness, press the surface of the cake lightly and if it springs back, the cake may be removed from the oven. Another indication that a cake is done is that it pulls away from the sides of the pan. Remove the cake from the pan after it has cooled several minutes and immediately pull off the waxed paper. Let it cool on a rack before frosting or storing it.

The oven regulator on some ovens varies so it is always wise to check the temperature with an oven thermometer. If the oven temperature is either too high or too low, have the regulator adjusted by the dealer or learn what setting is necessary to obtain the temperature needed inside the oven.

The baking temperatures given were used in electric and natural-

gas ovens. For ovens heated by wood or bottled gas, such as butane, it may be necessary to lower the temperature given in the recipe in order to prevent temporary overheating or burning during additions of fuel or fluctuating pressures. The side of the oven next to the firebox in some stoves may also be hotter and uniform heating may not result. The amount of correction or lowering of the baking temperature depends on the particular stove and must be determined by the individual homemaker.

What to Expect from a Recipe

If directions are followed carefully, each of the recipes below will yield an excellent cake in relation to the ingredients used. A "butter" cake with relatively larger amounts of sugar and shortening will give a finer, more velvety type of cake than a less rich recipe. However, cakes from less rich recipes will be very acceptable.

The sponge cakes should be light, springy, slightly moist and with relatively large air cells. The shortening-type cakes should have slightly rounded tops, a light-brown surface and velvety fine-grained interior.

The recipes are arranged below according to altitude. If the altitude at which you live is not exactly 5,000 feet, 7,500 feet or 10,000 feet, use the recipe adapted for the nearest altitude.

Recipes for Altitudes of 5,000, 7,500 and 10,000 Feet

ANGEL FOOD CAKE

A fine, moist cake with large volume.

Method	-5,000 Feet-	—7,500 Feet—	—10,000 Feet—
Mix and sift together 3 times	{ 1 cup sifted cake flour 1/2 cup sugar	1 cup sifted cake flour 1/4 cup plus 2 tablespoons sugar	{ 1 cup sifted cake flour 1/4 cup sugar
Beat until foamy	$\begin{cases} 1\frac{1}{2} \text{ cups egg whites } (10-12\\ \text{ large eggs})^{1} \end{cases}$	$\begin{cases} 1\frac{1}{2} \text{ cups egg whites } (10-12\\ \text{ large eggs})^1 \end{cases}$	$\begin{cases} 1\frac{1}{2} \text{ cups egg whites } (10-12\\ \text{ large eggs})^1 \end{cases}$
Add to egg whites	$\left\{ \begin{array}{l} 1\frac{1}{2} \text{ teaspoons cream of tartar} \\ \frac{1}{2} \text{ teaspoon salt} \end{array} \right.$	{ 1½ teaspoons cream of tartar ⅓ teaspoon salt	$ \left\{ \begin{array}{l} 1\frac{1}{2} \text{ teaspoons cream of tartar} \\ \frac{1}{2} \text{ teaspoon salt} \end{array} \right. $
Continue beating until egg whites are glossy and fine grained, and form peaks which just barely fall over			
Fold in with about 25 folding strokes	{ 1 cup sugar	{ 1 cup sugar	{ 1 cup sugar
Add by fourths, using about 15 folding strokes after each addition. After last addition of flour, fold 10 additional strokes	dry ingredients	dry ingredients	dry ingredients

Fold in with 10 strokes

1/2 teaspoon vanilla 1/2 teaspoon almond extract or 1 teaspoon vanilla 1/2 teaspoon vanilla 1/2 teaspoon almond extract or 1 teaspoon vanilla 1/2 teaspoon vanilla 1/2 teaspoon almond extract or 1 teaspoon vanilla

Pour into ungreased, dry, 10-inch, tube pan. Cut through batter with knife to release air bubbles. Bake in a moderate oven (350° F.) for 45 to 50 minutes. Invert pan on rack and allow cake to cool before removing from the pan.

CHOCOLATE ANGEL FOOD CAKE

This perennial favorite is a high, light and fluffy cake which melts in your mouth.

Remove 2 tablespoons of cake flour from the recipe for angel food cake and add ½ cup of cocoa to the remaining flour. Proceed exactly as with the angel food recipe except use 1½ teaspoons of vanilla for flavoring.

OTHER VARIATIONS

A topping of whipped cream mixed with crushed peanut brittle, crushed peppermint candy, fresh or frozen fruit is delicious on slices of angel food cake.

SPICE ANGEL FOOD CAKE

This unique variation of the plain angel food is nice for an autumn dessert when served with whipped cream.

Use the angel food cake recipe and sift with the flour 1/2 teaspoon nutmeg, 1/4 teaspoon cloves and 1 teaspoon cinnamon. Omit vanilla or almond extract and after last addition of flour fold 20 additional strokes.

¹ For best results have egg whites at room temperature.



EGG-YOLK SPONGE CAKE

This fine-grained cake is a good base for fruit shortcake. The combination of vanilla and lemon extracts is pleasing.

Method	—5,000 Feet—	7,500 Feet	—10,000 Feet—
Beat with rotary beater until blended	8 egg yolks 1/4 teaspoon salt 1/4 teaspoon cream of tartar 1/2 teaspoon vanilla 1/2 teaspoon lemon extract	8 egg yolks 1/4 teaspoon salt 1/4 teaspoon cream of tartar 1/2 teaspoon vanilla 1/2 teaspoon lemon extract	8 egg yolks 1/4 teaspoon salt 1/4 teaspoon cream of tartar 1/2 teaspoon vanilla 1/2 teaspoon lemon extract
Add gradually	{ ½ cup minus 2 tablespoons water	{ ½ cup minus 2 tablespoons water	{ ½ cup minus 1 tablespoon water
Add slowly and continue beating until thick and lemon colored	{ 2/3 cup sugar	{ 2/3 cup sugar	{ 2/3 cup sugar
Sift 1/4 of flour over mixture and fold in with about 15 strokes	{ 1 cup plus 1 tablespoon sifted cake flour	{ 11/4 cups plus 1 tablespoon sifted cake flour	1½ cups minus 1 tablespoon sifted cake flour

Repeat for remainder of flour.

After the last addition of

flour, use 10 additional fold-

ing strokes

Bake in an 8-inch tube pan in a moderate oven $(340^{\circ} \text{ F. at} 5,000 \text{ or } 7,500 \text{ feet} \text{ and } 350^{\circ} \text{ F. at } 10,000 \text{ feet})$ for 40 to 50 minutes.

WHOLE-EGG SPONGE CAKE

A tender moist cake. Sprinkle confectioner's sugar through a paper doily for an attractive topping.

Method	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—
Beat slightly	← 6 egg yolks	6 egg yolks	6 egg yolks
Add	1½ tablespoons water 1 teaspoon vanilla ½ teaspoon salt	{ 1½ tablespoons water 1 teaspoon vanilla ½ teaspoon salt	{ 1½ tablespoons water 1 teaspoon vanilla ½ teaspoon salt
Add gradually and continue beating until thick and lemon colored	$\left\{\begin{array}{c} 1_{\!\!\!/2} \ {\rm cup \ sugar} \end{array}\right.$	{ ½ cup sugar	{ ½ cup sugar
Beat until foamy	6 egg whites 1½ teaspoon cream of tartar	6 egg whites ½ teaspoon cream of tartar	6 egg whites ½ teaspoon cream of tartar
Add gradually to egg whites. Beat until peaks form and fall over slightly when beater is removed from mixture	1/	{ ½ cup sugar	{ ½ cup sugar
Fold yolk mixture into egg- white meringue			
Add by fourths, using 15 strokes after each addition. After last addition, mix 10 additional strokes	11/4 cups plus 1 tablespoon	11/4 cups plus 1 tablespoon sifted cake flour	1½ cups plus 2 tablespoons sifted cake flour
Fold in	{ 1½ tablespoons lemon juice 1 tablespoon grated lemon rind, if desired	1½ tablespoons lemon juice 1 tablespoon grated lemon rind, if desired	1½ tablespoons lemon juice 1 tablespoon grated lemon rind, if desired
	nch tube pan in a moderate oven et and 350° F. at 10,000 feet) for	40 to 50 minutes. Invert pan before removing from pan.	on rack and allow cake to cool

TWO-EGG CAKE

A good foundation cake.

Hand	-5,000 Feet-	—7,500 Feet—	—10,000 Feet—	Mixer
Mix and sift together 3 times	2 cups sifted cake flour 1½ teaspoons baking powder	2 cups sifted cake flour 1¼ teaspoons baking powder	2 cups sifted cake flour 1 teaspoon baking powder	Mix and sift together 3 times
	1 teaspoon salt	1 teaspoon salt	1 teaspoon salt	MEDIUM SPEED
Soften	½ cup shortening	½ cup shortening	½ cup shortening	Soften for 1 minute
Add gradually to short- ening and cream until light and fluffy	1 cup sugar 1 teaspoon vanilla	1 cup sugar 1 teaspoon vanilla	1 cup sugar 1 teaspoon vanilla	Add gradually to short- ening, cream 5 minutes. Scrape bowl often.
Beat, add to creamed mixture and mix thoroughly	2 eggs	2 eggs	2 eggs	Add, beat 1 minute
Add alternately by thirds. Beat 25 strokes after each addition of flour; 50 strokes after each addition of liquid	dry ingredients 3/4 cup plus 1 table- spoon milk	dry ingredients 1 cup minus 1 table- spoon milk	dry ingredients 1 cup minus 1 table- spoon milk	Add together by thirds. Mix a total of 4 minutes.

COCOA CAKE

A simple and economical cake may be made by substituting 1/2 cup of cocoa for 1/2 cup of flour in the two-egg cake.

For baking directions, see bottom of page 13.

SPICE CAKE

A subtle blend of spices provides an appetizing variation of the above cake. Mix and sift with the flour and dry ingredients, ½ teaspoon nutmeg, ¼ teaspoon cloves, and 1 teaspoon cinnamon. Raisins may be added to the batter or frosting if desired.

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SOUR-CREAM CAKE

This cake has a distinctive flavor preferred by many.

Hand	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—	Mixer
Mix, sift together 3 times	2 cups sifted cake flour 1/2 teaspoon baking powder 1/2 teaspoon soda 1/2 teaspoon salt	2 cups sifted cake flour ½ teaspoon baking powder ½ teaspoon soda ½ teaspoon salt	2 cups sifted cake flour 1/4 teaspoon baking powder 1/4 teaspoon soda 1/2 teaspoon salt	Mix, sift together 3 times HIGH SPEED
Beat until thick	3 eggs	3 eggs	$\left\{ \begin{array}{c} 3 \text{ eggs} \end{array} \right. <$	Beat for 4 minutes or until thick and lemon colored
Add gradually to eggs, continue beating until mixture is thick and lemon colored	1½ cups sugar	11∕3 cups sugar .	$\left\{\begin{array}{c} 1\frac{1}{4} \text{ cups sugar} \end{array}\right.$	MEDIUM SPEED Add gradually to eggs, mix 3 minutes
Fold in	1 teaspoon vanilla	1 teaspoon vanilla	1 teaspoon vanilla	Add
Add alternately by thirds. Beat about 10 strokes after each ad- dition of flour and 15 strokes after each addi- tion of liquid	dry ingredients 1 cup sour whipping cream into which ½ cup cold water is stirred	dry ingredients 1 cup sour whipping cream into which ½ cup cold water is stirred	dry ingredients 1 cup sour whipping cream into which 1/4 cup cold water is stirred	LOW SPEED Add together by thirds, mix for ½ minute after each addition (total 1½ minutes)

Bake in two 8-inch layer pans which have been greased and either floured or lined with greased waxed paper. Cut through batter 3 or 4 times in each direction to release large air pockets. Bake in moderately hot oven (375° F.) for 25 to 30 minutes.

YELLOW CAKE

A fine velvety cake, good with lemon filling.

CONVENTIONAL METHOD

Hand	-5,000 Feet-	-7,500 Feet-	—10,000 Feet—	Mixer
Mix and sift together 3 times	3 cups sifted cake flour 2½ teaspoons baking powder 1 teaspoon salt ¹	3 cups sifted cake flour 17/8 teaspoons baking powder 1 teaspoon salt ¹	3 cups sifted cake flour 11/8 teaspoons baking powder' 1 teaspoon salt ¹	Mix, sift together 3 times
				MEDIUM SPEED
Soften	1 cup shortening	1 cup shortening	1 cup shortening	Soften
Add gradually to short- ening and cream 500 - strokes	1½ cups sugar 2 teaspoons vanilla	1½ cups sugar 2 teaspoons vanilla	1½ cups sugar 2 teaspoons vanilla	Add gradually to short- ening and mix 5 min- utes
Add, beat 300 strokes	4 egg yolks	4 egg yolks	4 egg yolks	Add, mix 2 minutes
Add alternately by fourths. Beat about 25 strokes after each addi- tion of flour and 50 strokes after each addi- tion of liquid	dry ingredients 1 cup milk	dry ingredients 1½ cups milk²	dry ingredients 1½ cups milk²	LOW SPEED Add together by fourths and mix 1 minute after each addition (total 4 minutes)
Fold in with 75 strokes	4 stiffly beaten egg whites	4 stiffly beaten egg whites	4 stiffly beaten egg whites	Add, mix 1 minute

Bake in three 8-inch, layer pans which have been greased and either floured or lined with greased waxed paper. Bake in a moderately hot oven (375° F.) for 25 to 30 minutes.

¹ Decrease salt to ³/₄ teaspoon when using margarine or butter.
² Decrease milk to 1 cup plus 2 tablespoons when using margarine or butter.

YELLOW CAKE

A fine velvety cake, good with lemon filling.

STREAMLINE METHOD

Hand				Mixer
	-5,000 Feet-	—7,500 Feet—	—10,000 Feet—	LOW SPEED
Soften	1 cup shortening ¹	1 cup shortening ¹	1 cup shortening ¹	Soften
Mix, sift together twice. Then sift into bowl containing shortening	3 cups sifted cake flour 2½ teaspoons baking powder 1 teaspoon salt ² 1½ cups sugar	3 cups sifted cake flour 1% teaspoons baking powder 1 teaspoon salt ² 1½ cups sugar	3 cups sifted cake flour 1½ teaspoons baking powder 1 teaspoon salt² 1½ cups sugar	Mix, sift together twice. Then sift into bowl containing shortening
Add, beat 300 strokes	3/4 cup milk 2 teaspoons vanilla 4 egg yolks	1 cup milk³ 2 teaspoons vanilla 4 egg yolks	1 cup milk ⁸ 2 teaspoons vanilla 4 egg yolks	Add, mix 2 minutes
Beat until stiff	4 egg whites	4 egg whites	4 egg whites	Beat until stiff
Add beaten egg whites and milk. Beat for 150 < strokes	1/4 cup milk	1/4 cup milk	{ 1/4 cup milk	Add beaten egg whites and milk, mix for 1 minute

Bake in three 8-inch layer pans which have been greased and either floured or lined with greased waxed paper. Bake in a moderately hot oven (375° F.) for 25 to 30 minutes.

¹ When using hand streamline method use emulsified hydrogenated shortening.

² Decrease salt to ³/₄ teaspoon when using margarine or butter.

⁵ Decrease milk to 1 cup minus 2 tablespoons when using margarine or butter.

WHITE CAKE

This is a delicate fine-grained cake. Vary by using half almond extract.

STREAMLINE METHOD

Hand	-5,000 Feet-	—7,500 Feet—	—10,000 Feet—	Mixer
Soften	½ cup shortening¹	½ cup shortening¹	1/2 cup shortening ¹	Soften LOW SPEED
Mix, sift together twice. Then sift into bowl containing shortening	2 cups sifted cake flour 2 teaspoons baking powder 1 teaspoon salt 1 cup sugar	2 cups sifted cake flour 1½ teaspoons baking powder 1 teaspoon salt 1 cup sugar	2 cups sifted cake flour 1 teaspoon baking powder 1 teaspoon salt 1 cup sugar	Mix, sift together twice. Then sift into bowl containing shortening
Add, beat 300 strokes	1 teaspoon vanilla 3⁄4 cup milk	1 teaspoon vanilla 3⁄4 cup milk	1 teaspoon vanilla 3/4 cup milk	Add, mix 2 minutes
Beat until foamy Add, beat until stiff Add meringue and milk to batter. Beat 150	4 egg whites 1/4 cup sugar 3 tablespoons milk	4 egg whites 1/4 cup sugar 3 tablespoons milk	4 egg whites 1/4 cup sugar 3 tablespoons milk	Beat until foamy Add, beat until stiff Add meringue and milk to batter. Beat 1 min-
strokes For baking directions, see bottom	m of page 17.		The state of the s	Lute

MARBLE CAKE

This is an old favorite which makes a delicious variation of the white cake. It is especially good with fudge frosting.

Follow the recipe and directions for the white cake until ready to pour into pans. Then pour 2/3 of the batter into two 8-inch cake pans which have been greased and either floured or lined with greased waxed paper.

Mix together and then blend well with remaining batter 1 square unsweetened chocolate (melted over hot water) 1/4 teaspoon soda 2 tablespoons warm water

Pour chocolate batter over white in pans and cut in with a spoon. Bake in a moderately hot oven (375° F.) for 30 to 35 minutes.

¹ When using hand streamline method use hydrogenated shortening.

WHITE CAKE

CONVENTIONAL METHOD

Hand	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—	Mixer
Mix, sift together 3 times	2 cups sifted cake flour 2 teaspoons baking powder 1 teaspoon salt	2 cups sifted cake flour 1½ teaspoons baking powder 1 teaspoon salt	2 cups sifted cake flour 1 teaspoon baking powder 1 teaspoon salt	Mix, sift together 3 times
			(Trenspoon suit	MEDIUM SPEED
Soften	½ cup shortening	½ cup shortening	½ cup shortening	Soften
Add gradually to short- ening and cream until light and fluffy	11/4 cups sugar 1 teaspoon vanilla	1½ cups sugar 1 teaspoon vanilla	1½ cups sugar 1 teaspoon vanilla	Add gradually to short- ening, beat 5 minutes
Add alternately by thirds. Beat about 25 strokes after each addi- tion of flour and 75 strokes after each addi- tion of liquid	dry ingredients 1 cup minus 1 table- spoon milk	dry ingredients 1 cup minus 1 table- spoon milk	dry ingredients 1 cup minus 1 table- spoon milk	Add together by thirds, mix a total of 6 minutes
Beat until stiff, but not dry. Fold carefully, but thoroughly into batter	4 egg whites	4 egg whites	4 egg whites	Beat until stiff, but not dry. Add, mix I minute

Bake in two round, 8-inch cake pans which have been greased and either floured or lined with greased waxed paper. Cut through the batter 3 or 4 times in each direction to release

large air pockets. Bake in a moderately hot oven (375° F.) for 30 to 35 minutes.

BURNT-SUGAR CAKE

This tender, fluffy cake has a delicate flavor. The strength of flavor depends on darkness of the sugar syrup.

CONVENTIONAL METHOD

Hand	-5,000 Feet-	—7,500 Feet—	—10,000 Feet—	Mixer
Mix, sift together 3 times	2½ cups sifted cake flour 1% teaspoons baking powder ½ teaspoon salt	2½ cups sifted cake flour 1¼ teaspoons baking powder ½ teaspoon salt	2½ cups sifted cake flour % teaspoon baking powder ½ teaspoon salt	Mix, sift together 3 times
Soften	½ cup shortening	½ cup shortening	½ cup shortening	Soften. MEDIUM SPEED
Add gradually to short- ening, cream well	1½ cups sugar 1 teaspoon vanilla	1½ cups sugar 1 teaspoon vanilla	1½ cups sugar 1 teaspoon vanilla	Add gradually to short- ening, mix 6 minutes
Add, beat thoroughly	2 egg yolks	2 egg yolks	2 egg yolks	Add, mix 1 minute
Add alternately by thirds. Beat about 20 strokes after each ad- dition of flour mixture and 30 strokes after each addition of liquid	dry ingredients 1 cup cold water	dry ingredients 1 cup cold water	dry ingredients 1 cup cold water	Add together by thirds. Mix a total of 3 minutes
Stir in with about 50 strokes	3 tablespoons burnt- sugar syrup ¹	3 tablespoons burnt- sugar syrup ¹	3 tablespoons burnt- sugar syrup¹	{ Add, mix 1 minute
Beat until stiff but not dry. Fold carefully into batter	2 egg whites	2 egg whites	2 egg whites	Beat until stiff but not dry. Add to batter. Mix 1 minute

For baking directions, see bottom of page 19.

BURNT-SUGAR CAKE

STREAMLINE METHOD

Hand	—5,000 Feet—	—7,500 Feet—	10,000 Feet	Mixer LOW SPEED
Soften	1/2 cup shortening	{ ½ cup shortening	{ ½ cup shortening	Soften
Mix, sift together twice. Then sift into bowl containing shortening	2½ cups sifted cake flour 1½ teaspoons baking powder ½ teaspoon salt 1¼ cups sugar	2½ cups sifted cake flour 1¼ teaspoons baking powder ½ teaspoon salt 1¼ cups sugar	2½ cups sifted cake flour ½ teaspoon baking powder ½ teaspoon salt 1 cup sugar	Mix, sift together twice. Then sift into bowl containing shortening
Add, beat 300 strokes	2 egg yolks 1 teaspoon vanilla 3/4 cup cold water 3 tablespoons burnt- sugar syrup ¹	2 egg yolks 1 teaspoon vanilla 3/4 cup cold water 3 tablespoons burnt- sugar syrup ¹	2 egg yolks 1 teaspoon vanilla 3/4 cup cold water 3 tablespoons burnt- sugar syrup ¹	Add, beat 2 minutes
Beat until foamy	2 egg whites	2 egg whites	2 egg whites	Beat until foamy
Add gradually to egg whites and beat until stiff	{ 1/4 cup sugar	{ 1/4 cup sugar	{ 1/4 cup sugar	Add gradually to egg whites and beat until stiff
Add to batter, beat 150 strokes	egg white meringue '4' cup cold water	{ egg white meringue 1/4 cup cold water	egg white meringue ½ cup cold water	Add to batter, beat 1 minute

Bake in two 9-inch layer pans which have been greased and either floured or lined with greased waxed paper. Cut through the batter 3 or 4 times in each direction to release large air pockets. Bake in moderately hot oven (375° F.) for 25 to 30 minutes.

¹ Burnt-sugar syrup: Stir and melt slowly in a heavy skillet ½ cup sugar. Allow it to brown slightly. Add ½ cup boiling water and cook until smooth. Cool before using. Left-over syrup may be used in frosting or stored in covered container in refrigerator.

CHOCOLATE CAKE

This cake has an especially rich flavor when made with butter.

CONVENTIONAL METHOD

Hand	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—	Mixer
Mix, sift together 3 times	2 cups sifted cake flour 2 teaspoons baking powder 3/4 teaspoon salt	2 cups sifted cake flour 1½ teaspoons baking powder ¾ teaspoon salt	2 cups sifted cake flour 1 teaspoon baking powder 3/4 teaspoon salt	Mix, sift together 3 times
Soften	2/3 cup shortening	2/3 cup shortening	2/3 cup shortening	MEDIUM SPEED Soften 1 minute
ening, cream until light < and fluffy	1½ cups sugar 1 teaspoon vanilla	1½ cups sugar 1 teaspoon vanilla	1½ cups sugar 1 teaspoon vanilla	Add gradually to short- ening, cream 7 minutes
Add 1 at a time, beat well	$\left\{ egin{array}{ll} 3 ext{ eggs} \end{array} ight. ight.$	3 eggs	3 eggs	Add with melted choc-
Stir in	2½ squares unsweet- ened chocolate (melt- ed over hot water and cooled slightly)	2½ squares unsweet- ened chocolate (melt- ed over hot water and cooled slightly)	2½ squares unsweet- ened chocolate (melt- ed over hot water and cooled slightly)	olate, cream 1 minute longer
Add alternately by thirds. Beat 25 strokes				LOW SPEED
after each addition of flour; 50 strokes after each addition of liquid. Beat an additional 75 strokes at the end	dry ingredients 1 cup minus 1 table- spoon milk	dry ingredients 1 cup plus 1 table- spoon milk	dry ingredients 1 cup plus 3 table- spoons milk	Add together by thirds, mixing a total of 6 minutes

CHOCOLATE CAKE

STREAMLINE METHOD

Hand	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—	Mixer
Soften	\int \frac{2}{3} cup shortening ¹ \int \int	2/3 cup shortening ¹	2/3 cup shortening ¹	LOW SPEED Soften
Mix, sift together twice. Then sift into bowl containing shortening	2 cups sifted cake flour 2 teaspoons baking powder 3/4 teaspoon salt	2 cups sifted cake flour 1½ teaspoons baking powder ¾ teaspoon salt	2 cups sifted cake flour 1 teaspoon baking powder 3/4 teaspoon salt	Mix, sift together twice. Then sift into bowl containing shortening
	11/3 cups sugar	11/3 cups sugar	11/3 cups sugar	
Add these ingredients, beat 300 strokes	3 eggs 2½ squares unsweet- ened chocolate melted over hot water and cooled slightly² ½ cup milk 1 teaspoon vanilla	3 eggs 2½ squares unsweet- ened chocolate melted over hot water and cooled slightly² 2⁄3 cup milk 1 teaspoon vanilla	3 eggs 2½ squares unsweet- ened chocolate melted over hot water and cooled slightly ² ¾ cup milk 1 teaspoon vanilla	Add these ingredients, mix 2 minutes
Add more milk, beat 150 strokes	$\left\{\begin{array}{cc} 1/4 \text{ cup milk} \end{array}\right.$	½ cup minus 1 table- spoon milk	1/2 cup minus 1 table- spoon milk	Add more milk, mix 1 minute

Bake in two round, 9-inch pans which have been greased and either floured or lined with greased waxed paper. Cut through the batter 3 or 4 times in each direction to release large air pockets. Bake for 25 to 30 minutes in moderately hot oven (375° F.)

¹ Use of hydrogenated shortening is recommended with the hand streamline method.

² When adding chocolate, pour chocolate on one side of flour mixture in bowl and pour milk on the other side. This will prevent chocolate from cooling too quickly and hardening.

FUDGE CAKE

This cake, with a rich brownie-like texture, is particularly delicious. CONVENTIONAL METHOD

Hand	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—	Mixer
Mix, sift together 3 times. (Reserve 1 tablespoonful for flouring nuts)	2 cups sifted cake flour 2 teaspoons baking powder 1 teaspoon salt	2 cups sifted cake flour 1 teaspoon baking powder 1 teaspoon salt	2 cups sifted cake flour 1 teaspoon baking powder 1 teaspoon salt	Mix, sift together 3 times MEDIUM SPEED
Soften	½ cup shortening	1/2 cup shortening	½ cup shortening	Soften for 1 minute
Add slowly to shortening, begin creaming	2½ cups sugar	2½ cups sugar	2 cups sugar	Add gradually to short- ening
Add and cream until fluffy	4 tablespoons milk 2 teaspoons vanilla	4 tablespoons milk 2 teaspoons vanilla	4 tablespoons milk 2 teaspoons vanilla	Add, mix for 5 minutes
Add, beat well	3 egg yolks	3 egg yolks	3 egg yolks	Add, mix for 1 minute
Add, mix well	4 squares unsweetened chocolate (melted over hot water and cooled slightly)	4 squares unsweetened chocolate (melted over hot water and cooled slightly)	4 squares unsweetened chocolate (melted over hot water and cooled slightly)	Add, mix for 1 minute
Add alternately by thirds. Beat 25 strokes after each addition of flour; 75 after each ad- dition of liquid	dry ingredients 1¼ cups milk	dry ingredients 1¼ cups milk	dry ingredients 1¼ cups milk	Add together by thirds and mix 1 minute after each addition (total 3 minutes)
Add, mix until well distributed	1 cup chopped nuts, floured	1 cup chopped nuts, floured	1 cup chopped nuts, floured	Add, mix until well distributed
Fold in	3 stiffly beaten egg whites	3 stiffly beaten egg whites	3 stiffly beaten egg whites	Add, mix 1 minute

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For baking directions, see bottom of page 23.

FUDGE CAKE

STREAMLINE METHOD

Hand	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—	Mixer
Melt together in double boiler. Beat with rotary beater until smooth. Cool	1½ cups milk 4 squares chocolate	1½ cups milk 4 squares chocolate	1½ cups milk 4 squares chocolate	Melt together in double boiler. Beat with rotary beater until smooth.
Soften	½ cup shortening	½ cup shortening	½ cup shortening	Soften—LOW SPEED
Mix, sift together 3 times and add to short- ening. (Reserve 1 table- spoonful for flouring nuts)	2 cups sifted cake flour 2 teaspoons baking powder 1 teaspoon salt 21/4 cups sugar	2 cups sifted cake flour 1 teaspoon baking powder 1 teaspoon salt 2½ cups sugar	2 cups sifted cake flour 1 teaspoon baking powder 1 teaspoon salt 2 cups sugar	Mix, sift together 3 times and add to shortening
Add these ingredients and beat 300 strokes	3 egg yolks 1 cup of the milk and chocolate mixture as prepared above 2 teaspoons vanilla	3 egg yolks 1 cup of the milk and chocolate mixture as prepared above 2 teaspoons vanilla	3 egg yolks 1 cup of the milk and chocolate mixture as prepared above 2 teaspoons vanilla	Add these ingredients and mix 2 minutes
Add, beat 150 strokes	Remainder of the milk and chocolate mixture	Remainder of the milk and chocolate mixture	Remainder of the milk and chocolate mixture	Add, mix 1 minute
Beat until stiff but not dry	3 egg whites	3 egg whites	3 egg whites	Beat until stiff but not dry
Fold egg whites and nuts into batter	1 cup nuts, chopped and floured	1 cup nuts, chopped and floured	1 cup nuts, chopped and floured	Fold egg whites and nuts into batter
Bake in 9x13-inch pan which has been greased and either in a moderate oven (350° F.). floured or lined with greased waxed paper. Bake 45 minutes				Page 23

CHOCOLATE SOUR-CREAM CAKE

For variety, bake half the recipe in a loaf pan and use the other half for cup cakes.

Hand	5,000 Feet	—7,500 Feet—	—10,000 Feet—	Mixer
Mix, sift together 3 times	1¾ cups sifted cake flour ¾ teaspoon soda ½ teaspoon salt	13/4 cups sifted cake flour 3/4 teaspoon soda 1/2 teaspoon salt	13/4 cups sifted cake flour 1/2 teaspoon soda 1/2 teaspoon salt	Mix, sift together 3 times HIGH SPEED
Beat until thick and lemon colored	$\left\{ ight. 3 \ \mathrm{eggs} \ \left\{ ight. ight.$	3 eggs	3 eggs	Beat for 4 minutes or until stiff and lemon colored
Add gradually, beat until mixture is thick and light	1½ cups sugar	1½ cups sugar	11/4 cups sugar	MEDIUM SPEED Add gradually, beat for 3 minutes
Add and blend in	2 squares unsweetened chocolate melted in ½ cup hot water over low heat and cooled	2 squares unsweetened chocolate melted in ½ cup hot water over low heat and cooled	2 squares unsweetened chocolate melted in ½ cup hot water over low heat and cooled	LOW SPEED Add gradually, mix for 1 minute
Fold in	1 teaspoon vanilla	1 teaspoon vanilla	1 teaspoon vanilla	Add, mix slightly
Add alternately by thirds. Beat 10 strokes after each addition of flour; 15 after each ad- dition of liquid	dry ingredients 1 cup sour cream (20%)	dry ingredients 1 cup sour cream (20%)	dry ingredients 1 cup sour cream (20%)	Add together by thirds, mix for ½ minute after each addition (total 1½ minutes)

Bake in two round, 8-inch cake pans which have been greased and either floured or lined with greased waxed paper. Cut through the batter 3 or 4 times in each direction to release

large air pockets. Bake in a moderate oven (350° F.) for 25 to 30 minutes.

GINGERBREAD

Raisins may be added for a pleasing variation.

Hand	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—	Mixer
Mix, sift together 3 times	2½ cups sifted all- purpose flour ¾ teaspoon soda ½ teaspoon salt ¼ teaspoon cinnamon ¼ teaspoon nutmeg ¼ teaspoon allspice 1 teaspoon ginger	2½ cups sifted all- purpose flour ½ teaspoon soda ½ teaspoon salt ¼ teaspoon cinnamon ¼ teaspoon nutmeg ¼ teaspoon allspice 1 teaspoon ginger	2½ cups sifted all- purpose flour ½ teaspoon salt ½ teaspoon cinnamon ¼ teaspoon nutmeg ¼ teaspoon allspice I teaspoon ginger	Mix, sift together 3 times
Soften	½ cup shortening	\[\frac{1}{2} \text{ cup shortening}^1 \]	\{ \frac{1}{2} \text{ cup shortening}^1 \rightarrow	MEDIUM SPEED Soften
Add gradually to short- ening and cream until light and fluffy	½ cup sugar	{ 1∕2 cup sugar .	{ ½ cup sugar	Add gradually to short- ening and cream 6 min- utes
Add 1 at a time and beat well after each addition	2 eggs	$\left\{egin{array}{ll} 2 ext{ eggs} \end{array} ight.$	$\left\{\begin{array}{c} 2 \ \mathbf{e} \mathbf{g} \mathbf{g} \mathbf{s} \end{array}\right.$	Add, mix 1 minute
Add, mix thoroughly	3/4 cup molasses	³ / ₄ cup molasses	{ 2/3 cup molasses	Add, mix 1 minute
Add alternately by fourths. Beat about 20 strokes after each addition of flour and 30 strokes after each addition of liquid	dry ingredients ² / ₃ cup boiling water	dry ingredients 2/3 cup boiling water	dry ingredients 2/3 cup boiling water	LOW SPEED Add together by thirds, mixing a total of 3 minutes
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Pour into pan about 9 inches square, 21/2 inches deep, which has been greased and either floured or lined with greased

waxed paper. Bake in a moderate oven (350° F.) for 45 to 50 minutes.

¹ Use of hydrogenated shortening is recommended at 7,500 and 10,000 feet.

APPLESAUCE CAKE

A moist cake which keeps well.

Hand	—5,000 Feet—	—7,500 Feet—	—10,000 Feet—	Mixer
Mix, sift together 3 times (Reserve 2 tablespoons for flouring nuts and raisins)	2 cups sifted cake flour 1½ teaspoons soda ½ teaspoon salt ½ teaspoon cinnamon ¼ teaspoon nutmeg ½ teaspoon cloves	2 cups sifted cake flour 1½ teaspoons soda ½ teaspoon salt ½ teaspoon cinnamon ¼ teaspoon nutmeg ½ teaspoon cloves	2 cups sifted cake flour 1 teaspoon soda ½ teaspoon salt ½ teaspoon cinnamon ¼ teaspoon nutmeg ½ teaspoon cloves	Mix, sift together 3 times (Reserve 2 tablespoons for flouring nuts and raisins) MEDIUM SPEED
Soften	1/3 cup shortening	1/3 cup shortening ¹	1/3 cup shortening ¹	Soften
Add gradually to short- ening, cream until fluffy	1 cup sugar 1 teaspoon vanilla	1 cup sugar 1 teaspoon vanilla	1 cup sugar 1 teaspoon vanilla	Add gradually to short- ening, cream 4 minutes
Add beaten egg, mix well	1 egg	1 egg	{ 1 cgg	Add, mix 1 more min- ute
Add alternately by thirds, using milk after first addition of flour mixture and ½ of applesauce after each of the other two additions of flour mixture. Beat about 25 strokes after each addition of flour and 50 strokes after each addition of liquid	dry ingredients 1 cup applesauce² ½ cup sour milk³	dry ingredients 1 cup applesauce ² ½ cup sour milk ³	dry ingredients 1 cup applesauce ² ½ cup sour milk ³	Add together by thirds, using milk with first addition of flour mixture and ½ of applesauce with each of the other two additions of flour mixture. Mix 1 minute after each addition (total 3 minutes)

 $\begin{cases} & 1 \text{ cup raisins, floured} \\ & i \text{ cup chopped nuts,} \\ & floured \end{cases}$

1 cup raisins, floured 1 cup chopped nuts, floured 1 cup raisins, floured 1 cup chopped nuts, floured

Stir in

Pour into pan about 9 inches square and 2½ inches deep which has been greased and either floured or lined with greased waxed paper. Bake 45 minutes in a moderate oven (350° F.). It may also be baked in a loaf pan about 9½x5½x3 inches.



¹ When using margarine or butter omit milk at this altitude.

² Use applesauce that has been slightly sweetened and of medium thickness.

³ If you have no sour milk, use ½ cup sweet milk and 1 teaspoon vinegar.

Acknowledgments

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