SOLDIERS' ATTITUDES TOWARD FOODS IN A TROPICAL ENVIRONMENT

Part 2

Pilot Experiment

Methods for Inducing Favorable Attitudes Toward Novel and Familiar Foods In a Tropical Environment

Interim Report

August 1963

ARMED FORCES FOOD AND CONTAINER INSTITUTE
U.S. ARMY QUARTERMASTER RESEARCH AND ENGINEERING CENTER
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by

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Introduction

In 1962 a special project was initiated for studying the use of and attitude toward Quartermaster material by men operating under tropical conditions. The major purposes of the project were to evaluate food, clothing, and other equipment currently issued, to test new or prototype items, and to locate areas of man-equipment incompatibility. Panama was selected as the site for conducting preliminary observations since it met certain pre-established criteria: tropical climate, sufficient number of soldiers available, and a situation where studies could be conducted with a minimum interference with the men's regular duties.

The characteristics of the site and of the men's training activities were described in Soldiers' Attitudes Toward Foods in a Tropical Environment: Part 1 (McCoy 1963) which also reported acceptance data on certain experimental foods intended for use in future operational rations.

The specific location of the site was the Jungle Warfare Training Center at Ft. Sherman. Observations of a preliminary nature had been accomplished over two training cycles during August and September of 1962. At that time a tentative research plan was conceived which was adaptable to the rigorous training schedule of the school and which could be accomplished at a later training period during January and February of

1963. In addition to the observations on man-equipment incompatibilities, it was felt that the situation presented a unique opportunity to collect field data on attitude change.

In a previous experiment on shaping soldiers' attitudes toward Quick-Serve Meals (Kamen, 1962) carried out among 400 enlisted men at Ft. Lee, Virginia, a mass communication was shown to be effective both in inducing immediate favorable reactions and in preventing later development of unfavorable attitudes. However, all soldiers in the experiment were given samples of individual ration components to taste at the time the communication was presented. There was no way of determining whether the effect of these taste experiences was positive or negative; nor was there any indication as to whether a communication dealing with a familiar ration would be as effective as a comparable one concerned with a new or novel ration.

Purpose

The purpose of the research reported here was to determine the effects of each of two variables -- verbal communication vs. no communication, and concomitant taste experience vs. no taste experience. Two experiments were conducted during the same period of training and on similar groups of soldiers:

(1) A prototype meal consisting of recently developed freeze-dried foods unfamiliar to the soldiers, referred to throughout this report as "novel" foods.

(2) C Ration items which all had previously experienced, otherwise referred to as "familiar" foods.

In each experiment the relative effectiveness of four conditions of influence was studied:

(1) A verbal communication presenting practical information about the foods.

(2) A taste experience with the food items prior to their consumption in the field.

(3) A combination of these conditions.

(4) A no-attempt-to-influence situation.

Method

Subjects

The Instructional Committee of the Jungle Warfare Training Center had assigned all training personnel into 16 squads, each consisting of 12 students. Eight of these 16 squads were selected, for the Familiar Foods (C Rations) Experiment and for the Novel (freeze-dried) Foods Experiment. Two factors influenced selection. Squads containing Navy or Air Force personnel were eliminated since they were likely to be less homogeneous than those consisting entirely of Army men. It was felt that mixtures of service background would constitute an additional source of variation. Further, Army personnel were more likely to be familiar with C Rations.

The secord basis of selection was the physical separation of groups. Squads were chosen which were most separated from each other in tactical formation, bivouac, and patrolling activities. This was done because the situation during patrolling was such as to encourage soldiers in adjacent squads to communicate. This would have represented "cross contamination,"

to some unknown degree, of the independent communication variable. Each squad received a different experimental treatment.

Experimental Design

The experimental design is shown in Table 1. In each experiment positive action was taken to influence three squads, while the fourth served as a control.

Table 1

Experimental Design*

Prior Verbal Communication	Prior Taste Test: Yes	Prior Taste Test: No
Yes	Talk-Taste	Talk
No	Taste	No Influence

*In each cell there were two squads. One squad received the Novel Foods treatment while the other received the Familiar Foods treatment.

For each cell (treatment) of the basic design one squad was assigned to the Novel Foods Experiment and another was assigned to the Familiar Foods Experiment. For example, one squad received the "Talk-Taste" treatment about freeze-dried foods while another squad received a parallel treatment about C Rations.

Procedures for Influence Attempts

Influence attempts were administered on the 10th day of training in the jungle at a convenient break between the reconnaissance and combat patrols. The lapse between the two exercises was selected because it permitted the application of the experimental treatments at a time when the subjects were preparing their bivouac and camp areas. In addition, the patrol problem presented a realistic setting for consumption of the foods similar to the kind of situation that would occur under conditions of actual jungle warfare.

A base of patrolling operations had been established in a section of the rain forest from which the reconnaissance patrols conducted their missions. All patrols began in early morning but returned at different periods of the afternoon since the distance to their assigned objectives varied. As individual squads returned they were given routine debriefings by their platoon leaders and commanders and asked to report to a pre-designated area for further briefings. At that time the preassigned experimental treatment was applied. All treatments for both experiments were administered during a four hour period on a humid afternoon during the dry season.

Sessions were conducted by the experimenter and an assistant, both graduates of the JWTC. However, because of differences that could result if presentations were made by different persons, all talks were made by the experimenter.

Experimental Variations

The conditions and methods of influence were essentially the same for both experiments, and are described briefly as follows:

Talk-Taste. Depending upon the experiment, the men were given a brief talk (see Appendix A) about the novel foods or about C Rations. For each of the talk conditions, emphasis was given to packaging, utility, design, and limitations of the field-feeding situation. During the discussions, the foods were displayed before each of the experimental groups. Immediately following verbal communications, Subjects reconvened at a nearby table and tasted the freeze-dried foods or C Rations. Freeze-dried foods were sampled in both the dry and rehydrated versions with utensils provided by the experimenter so that Subjects would not be inconvenienced by having to use their own equipment.

Talk. Subjects were given one of the two verbal communications as described above but did not taste any of the foods.

Taste. Only the taste phase condition was administered. Subjects were convened at the table where the freeze-dried foods were displayed or else at another table where the C Rations were displayed. They were then asked to sample the items. The experimenter did not answer any questions about the foods.

No Influence Attempt. The two squads which acted as controls differed from each other only by the type of foods each consumed in the field on the day following the application of treatments.

Foods Consumed Following the Application of Treatments

Immediately following each of the experimental treatments all squads, including the two controls, were issued foods for consumption during the noon hour of combat patrol on the following day.

Squads which had received Familiar Foods treatments were issued the equivalent of one meal assembled from items taken from the Ration, Individual, Combat. This meal included one can each of meat, fruit, B-1 unit, and an additional accessory package.

Subjects in the Novel Foods Experiment received a prototype meal of freeze-dried foods. Meals were assembled from various components into four basic menu combinations and each menu was systematically issued to three men in each squad. The freeze-dried foods from which meals were assembled included the following: Meats -- beef, ham, and fish patties, and meat loaf slices; Fruits -- strawberries, peaches, pears, and apples. Bread was furnished in the form of individually baked rolls. Two beverage items included were an instant orange-grapefruit mix, and an instant cocoa powder. Two candy items, a chocolate bar and a starch-jelly bar, were also provided.

The meat, fruit, and bread items were packaged in polyethylene-foil-polyester envelopes. The entire meal of one item each of meat, fruit, and bread, and the two each of beverage and candy items were assembled along

with an accessory package and placed in an unsealed polyethylene-polyester bag. Each bag contained printed suggestions for use.

Questionnaires

Attitude questionnaires were administered at three times during the training period: (1) immediately following an orientation assemby on the day of arrival at Ft. Sherman from the Continental United States; (2) 10 days later in the jungle at the area of reconnaissance patrol operations immediately following the application of experimental treatments; (3) 11 days later back in garrison on the final day of training. All attitude questions required responses to 9-point rating scales whose categories ranged from "extremely favorable" down to "extremely unfavorable." Two basic questions repeated at each of the three sampling periods were singled out for the focus of the analysis (See Questionnaire in Appendix B). Subjects in both experiments were asked to rate their degree of favorableness on each of the questions: "How favorable or unfavorable are you to the idea of living on C Rations during jungle operations?" and, "How favorable or unfavorable are you to the idea of living on dehydrated foods during jungle operations?" This procedure was carried out regardless of the experimental condition so that the Subjects involved in each of the experimental situations always answered the same questions at each of the three periods described above. Note that the questionnaire also contained a series of other questions. Subjects who received novel foods were further asked a series of questions on the final questionnaire concerning packaging, general opinions, and hedonic ratings of the freeze-dried components (McCoy, 1963). In addition,

all subjects completed items on background, personal history, and the extent to which the novel foods were thought about and discussed.

Findings

Tables 2 and 3 list the means for Subjects' willingness to live on novel and familiar foods for each of the two experiments. Note that posttreatment and final posttest mean ratings were adjusted by analyses of covariance (Brownlee, 1961) to take into account initial differences among mean pretest ratings.

Novel Foods Experiment

No significant differential changes occurred in attitudes among treatments (Table 4). However, there was a trend ($p < .08$) at the final posttest period, for the squad which received the "talk" treatment showed at the final posttest period, but not at the posttreatment period, a greater willingness to live on the novel foods than did the others. Also note that the squads did not at any time differ significantly among themselves concerning their attitudes toward familiar foods.

Familiar Foods Experiment

Inducement attempts were generally ineffective in improving attitudes toward familiar foods, but were about equally effective for retarding the deterioration of attitudes immediately following the application of experimental treatments. Note in Table 3 that the control squad had a less favorable attitude toward familiar foods than did any of the others, which in turn did not differ significantly from each other. However, at the final posttest period, this difference was no longer apparent:

the squads were not statistically different from each other in attitudes toward these items.

Groups subjected to influence attempts concerning familiar foods were found to be significantly different from each other ($p < .001$) in attitudes toward the novel foods (Table 3). This was true immediately after the application of experimental treatments and at the final post-test period. The squad which received only the Talk about familiar foods was less favorable toward the novel foods immediately following the Talk than were any of the other groups. However, the difference was not as great at the final posttest period where the same squad was found to differ only from the squad which had received the combination of "Talk and Taste." No other significant differences occurred among the squads receiving treatments.

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Table 2

Mean Ratings on Willingness to Live on Novel Foods and on Familiar Foods for Groups in the Novel Foods Experiment*

Treatment	N	Novel Foods Attitudes			Familiar Foods Attitudes		
		Pretest	Posttreatment test	Final Posttest	Pretest	Posttreatment test	Final Posttest
Talk-taste	10	5.90	8.10	6.80	7.10	5.12	5.88
Talk	11	5.91	7.54	8.45	4.09	4.51	3.95
Taste	11	6.00	7.34	6.47	5.00	4.53	5.11
Control	10	5.80	6.94	6.15	5.70	4.15	4.64

* Posttreatment and final posttest mean ratings were adjusted to compensate for initial differences among mean pretest ratings by analyses of covariance.

Table 3

Mean Ratings on Willingness to Live on Familiar Foods and on Novel Foods for Groups in the Familiar Foods Experiment*

Treatment	N	Familiar Foods Attitudes			Novel Foods Attitudes		
		Pretest	Posttreatment test	Final Posttest	Pretest	Posttreatment test	Final Posttest
Talk-Taste	12	6.67	6.73^{a}**	6.05	7.33	6.92^{a}**	7.16^{a}**
Talk	11	6.73	7.13^{a}	6.33	4.45	3.98^{b}	3.85^{b}
Taste	10	6.20	6.55^{a}	6.24	6.30	6.26^{a}	6.04^{ab}
Control	9	5.56	4.59^{b}	6.52	5.00	6.67^{a}	4.84^{ab}

* Posttreatment and final posttest mean ratings were adjusted to compensate for initial differences among mean pretest ratings by analyses of covariance.

** Based on the Duncan Method for separating means. Averages identified by the same letter of the alphabet do not differ significantly at the 5% level. Compare only means which appear in the same column.

Table 4

Analysis of Covariance of Attitudes Concerning Novel and Familiar Foods After Attempts to Influence Attitudes on Novel Foods and After Actual Field Experience with Novel Foods

	Posttreatment				Final Posttest			
	Adjusted df	Adjusted Mean Square	F	P	Adjusted df	Adjusted Mean Square	F	P
Novel Food Attitudes	Treatments 3	2.3712	<1	n.s.	Treatments 3	11.6129	2.51	0.08
	Error Term 37	2.4031			Error Term 37	4.6213		
Familiar Food Attitudes	Treatments 3	0.3036	<1	n.s.	Treatments 3	5.4494	<1	n.s.
	Error Term 37	3.8000			Error Term 37	6.3117		

Table 5

Analysis of Covariance of Attitudes Concerning Familiar and Novel Foods After Attempts to Influence Attitudes on Familiar Foods and After Actual Field Experience with Familiar Foods

	Posttreatment				Final Posttest			
	Adjusted df	Adjusted Mean Square	F	P	Adjusted df	Adjusted Mean Square	F	P
Familiar Food Attitudes	Treatments 3	12.2875	3.88	0.05	Treatments 3	0.5174	<1	n.s.
	Error Term 37	3.1660			Error Term 37	4.1737		
Novel Food Attitudes	Treatments 3	27.3872	10.6	.001	Treatments 3	27.4509	6.94	.001
	Error Term 37	2.5787			Error Term 37	3.9566		

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Table 6

Extent to Which Subjects Thought and Talked About Novel Foods

	(1 = Thought, Talked Much 4 = No, Not at all)			
	Extent of Thoughts		Extent of Talk	
	Subjects Who Received Dehydrated Foods	Subjects Who Received C Rations	Subjects Who Received Dehydrated Foods	Subjects Who Received C Rations
Talk-Taste	2.10	1.58	2.60	2.42
Talk	1.64	2.55	1.82	2.45
Taste	1.82	2.40	2.09	3.10
Control	2.20	2.89	2.10	3.67

Implications

In interpreting the findings of the two pilot experiments particular difficulties related to communication within and between groups need to be made explicit. Observation suggested information leakage about the novel foods into squads which had not received experimental treatments about them.

Squads experienced different degrees of difficulty on the reconnaissance patrol which may have influenced their individual responses to the experimental variations they received shortly after their return. If the number of squads had been larger; i.e. two or more per treatment the problem would have been partly alleviated. The problem becomes more salient because the pretest occurred 10 days prior to the posttreatment measurements. The small N's in each of the squads, plus the possibility of inter-squad and intra-squad communication serves to further limit discussion of findings to development of a series of working hypotheses rather than the statement of firm conclusions.

Novel Foods

The finding that the verbal communication was more effective for increasing favorable attitudes after consumption of the foods in the jungle then either of the taste preview conditions, might be explained in two ways. Both are associated with the development of acceptance incentives. One focuses attention on those factors concerned with the "sleeper effect" of the verbal communication (Hovland, 1954). The other is that the verbal communication may have acted as a device to stimulate further expectations which were fulfilled when the foods were later

consumed. In contrast, the taste previews may have been premature expectations of the foods which were unfulfilled by actual experience with the items.

The development of acceptance incentives can also be explained by the introduction of an additional variable, referred to as "anticipation" (Gottlieb, 1959), which would concern the feelings subjects held about the appropriateness of the foods for the particular jungle conditions. High or low anticipation might be related to the type of introduction used. Hence, the more revealing the circumstances of introduction, such as a taste-preview, the higher would be food anticipations; and the less revealing the introduction, such as a solitary verbal communication, the lower would be the level of anticipation. The development of subsequent attitudes would be affected by the interaction of food anticipation and later experience. It may be hypothesized that later experience will have greater positive influence on attitude formation if anticipation is fulfilled, i.e., if the product measures up to what the soldier was led to accept and expect. These results suggest that it may be better to limit initial experience with a new product than to introduce it under the most favorable conditions because of the danger of its being over-sold. It may be difficult to fulfill high consumer expectations even if the product is a generally superior one. It may be better to introduce the product in an inferior form so as to develop low anticipations, than to create high anticipations by using a superior type of product. There are, of course, obvious variations of introduction which could be explored in future experiments and which would contain various elements related both to product quality and to the anticipation of its future uses. For

example, superior products could be limited in number, while inferior ones could be given a more extensive coverage.

There were several factors which may have enhanced favorableness in the taste-preview situation, thus causing the novel foods to be viewed in a better light than in the field experiences which followed.

First, although the foods were novel they were of a generally recognized superior quality as was indicated by their mean hedonic ratings (McCoy, 1963).

Adding to these generally superior qualities were the unique situational elements of the presentation. All influence attempts were administered in a relaxed atmosphere. Subjects had recently returned from patrol and were probably relieved over having completed the mission and having a temporary recess from the harassing jungle environment. They may have perceived the opportunity to taste the foods as a type of reward which was further enhanced by their own feelings of fatigue and hunger. Other elements in the situation included the use of utensils which were furnished by the experimenter so that subjects would not be inconvenienced by the use of their own gear.

Contrasted with these conditions, the food consumed in the field might have been perceived as less desirable. Subjects who rehydrated the items indicated an inconvenience because of a lack of spoons. Others who rehydrated did not do it as had been done by the experimenter in the taste-preview. The items were consumed hastily during a trail break while subjects were in pursuit of the "enemy." Thus, those who had experienced the taste-preview were likely to find their field experiences less pleasant. Contrasting with these conditions, subjects who had only

the verbal communication were not likely to have perceived differences between the elements of the introduction and their later experience. The verbal communication might have transmitted less information and thus would not have allowed for the development of high food anticipations which could lead to later disappointment.

Familiar Foods

When influence attempts similar to those used in the Novel Foods Experiment were used with familiar foods, they were generally ineffective for increasing favorableness but were about equally effective for retarding the deterioration of attitudes. A possible explanation may be that subjects held prior-developed opinions about the foods which had long been part of their regular field dietary regardless of the kind of field operations or its location. With experienced troops, C Rations may likely be seen as having short-comings but are nevertheless acceptable items of equipment. Under such circumstances it would seem difficult to stir up any new interest. Furthermore, the effect of retarding attitude deterioration was short-lived, probably because it was difficult to sustain interest in items which had strong value attachments and for which counter-arguments were easily developed. The rationale concerned with the level of food anticipation may also serve as an explanation; e.g., the influence attempts with familiar foods aroused a low level of anticipation. Food experiences followed which neither enhanced nor detracted from the elements of their "introduction," because, in a sense, attempts to influence were not really an introduction but a reminder of what subjects already knew. C Rations have long ceased to be unfamiliar items

of equipment and the attitudes of all men were likely to have been influenced previous to jungle training by their buddies, the press, and their own increasing experience.

Familiar Foods and Novel Foods Expectations

Perhaps one of the more interesting findings was the evidence that the squads which had received a taste-preview of the familiar foods indicated a significant willingness to live on the novel items. Two explanations seem feasible. One is that the question about the novel items, alone, was enough to arouse interest. The other is the possibility that a taste reminder of familiar foods, may have actually invited a strong interest in the unique foods and may have acted to arouse high food anticipation. This seems possible because all of the men had listened to rumors passed through the columns about the novel foods. The squad which had received only a talk about the familiar items had no immediate taste-reminder, and had no reason to expect a taste of the novel foods. The taste experience, alone, may have served as a reminder of what the men did not have.

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Appendix A

Example of Verbal Orientation

New Foods for Jungle Operations

In the next few days of your training here at Ft. Sherman you may have the opportunity to try some new f ods which Army scientists are now developing to meet the special needs of those soldiers who have to live and operate under difficult conditions.

You have probably already seen enough to realize that living and operating in jungle areas can be difficult and troublesome for a number of reasons. These new foods were designed to help you overcome these stresses by making things a little easier.

One of the most important factors in jungle operations is the weight you must carry. You must have equipment, food weapons -- yet these things are heavy and cumbersome and make it harder to get around in the jungle. The less you carry, the faster and easier you can cover the ground. As you know, speed and agility are vitally important in accomplishing your mission, whether you are pursuing the enemy or trying to stay out of his way.

In order to increase your jungle efficiency the Army scientists are trying to cut down on weight and bulk in several different ways. For example, they are trying to work out lighter and better pack carrying systems and they are developing new fabrics that will make stronger, lighter clothing.

But the important thing here is that they are also developing new dehydrated foods and some of these are ready to be tried out in the field.

What are dehydrated foods? They are the same kinds of foods you normally eat; the only difference is they have all, or almost all, of the water removed. Nothing else is removed except the water. All of the proteins, vitamins, and minerals which are necessary for your health and energy are still there. Since they are dry, most of the weight is gone so you have less to carry. Also, they are compact.

They will go into a small space and leave room in your pack for other things. For example, the foil envelopes in which these foods are packaged can easily be slipped into one of your pockets.

Dehydrated foods can be eaten either dry, that is, just as they come out of the envelope, or else water can be added to make them more like normal foods. You will probably want to try them both ways.

These foods are not intended to be used over long periods of time. Nor are they intended to take the place of hot meals brought out to the field. They are for special purposes and special missions where you have to travel light and fast and may be isolated from the normal lines of supply.

We have described the new dehydrated food system and indicated that the development and adoption of these foods will depend upon their evaluation by men like yourself. Consider this question: How well do these foods suit the needs of infantrymen who must operate in jungle areas? This is a question which only soldiers like you can honestly answer. It's up to you.

Example of Verbal Orientation

C Rations

During your training at Ft. Sherman you have been using a ration which is in common use throughout the Army all over the world. I am talking about, of course, what is known to most of you as the C Ration. I thought it might be a good idea to review with you some of the characteristics of this item and its application to conditions as they exist here in the jungle.

First, you should bear in mind that the C Ration is designed to keep you healthy and physically fit. It contains all of the proper vitamins and calories to keep you physically and mentally alert. Second, you all know that it is designed for universal use and for operational situations which make difficult, or prevent altogether the consumption of A Rations, that is, the kinds of foods you receive in the mess-hall.

The C Ration is a very flexible ration. It can be eaten in all kinds of climates and terrain, from high mountains and swamplands to the hot desert and cold icy Alaskan wilderness.

For Army scientists to build into this ration this kind of wide-range capability and flexibility, a few sacrifices have to be made. For example, the ration has to be developed so that it can withstand more than the ordinary degree of stress: extremes of hot and cold, and still be safe for you to eat. This may, or may not have some effect on the flavor. Since the foods are canned, we should not expect them to have the fresh-taste of similar items you may sometimes find in the

mess-hall, or at your favorite restaurant.

The can, to date, is still one of the best containers we can offer you, and you may be interested to know that Army scientists are now busy on new developments in this area, too. You can expect some future change in the shape and type of ration containers. C Rations cans have additional uses for storage of personal items. I have noticed some of you making use of cans in this way. You can heat your rations in the evening with one of the heat pellets, or else, over a small fire. I am sure you will agree that a little heat goes a long way in improving some of them.

Now, I am sure you all know that C Rations are not designed to be used over particularly long periods of time. They are special rations designed for special purposes. How well you adapt this ration to the particular area in which you operate is really up to you.

Appendix B

New Foods Questionnaire - 1

This questionnaire and others which you may be asked to complete are intended for research purposes only. Research personnel only will see your answers. Your answers will be shown to no one else. You own honest opinions, regardless of how favorable or unfavorable they may be, are necessary for valid conclusions.

EXPLANATION: A series of new foods are now being introduced to soldiers. These foods are precooked and then dehydrated.

These dehydrated foods are intended to be used in the field, similar to the conditions under which C Rations and 5-in-1 Rations are now used. They are not intended to be used in mess halls.

QUESTIONS: 1. In you opinion, how good or how poor is the idea of a new food system consisting mainly of dehydrated items? Circle one of the nine points.

Very good idea		Good idea		Neutral		Poor idea		Very poor idea

2. How favorable or unfavorable are you to the idea of living on these new dehydrated foods during jungle operations? Circle one of the boxes.

Extremely favorable	Very favorable	Moderately favorable	Slightly favorable	Neither favorable nor unfavorable	Slightly unfavorable	Moderately unfavorable	Very unfavorable	Extremely unfavorable

Appendix B

C Ration Questionnaire - 1

This questionnaire and others which you may be asked to complete are intended for research purposes only. Research personnel only will see your answers. Your answers will be shown to no one else. Your own honest opinions, regardless of how favorable or unfavorable they may be, are necessary for valid conclusions.

EXPLANATION: The C Ration has been in use throughout the Army for several years. These rations are cooked and then canned.

C Rations are intended to be used in the field under conditions which make more conventional feeding systems difficult.

QUESTIONS: 1. In your opinion, how good or how poor is the idea of a food system consisting of C Rations? Circle one of the nine points.

Very good idea		Good idea		Neutral		Poor idea		Very poor idea
'		'		'		'		'

2. How favorable or unfavorable are you to the idea of living on C Rations during jungle operations? Circle one of the boxes.

Extremely favorable	Very favorable	Moderately favorable	Slightly favorable	Neither favorable nor unfavorable	Slightly unfavorable	Moderately unfavorable	Very unfavorable	Extremely unfavorable

Appendix B

New Foods Questionnaire - 2

A short time ago you were given a talk on dehydrated foods which are now being introduced to soldiers throughout the army. We are interested in finding out how you feel about these new foods.

QUESTION 1. How favorable or unfavorable are you to the idea of living on these new dehydrated foods during jungle operations? Circle one of the boxes.

Extremely favorable	Very favorable	Moderately favorable	Slightly favorable	Neither favorable nor unfavorable	Slightly unfavorable	Moderately unfavorable	Very unfavorable	Extremely unfavorable

Appendix B

C Rations Questionnaire - 2

A short time ago you were given a talk on C Rations. We are interested in finding out how you feel about them.

QUESTION: 1. How favorable or unfavorable are you to the idea of living on C Rations during jungle operations? Circle one of the boxes.

Extremely favorable	Very favorable	Moderately favorable	Slightly favorable	Neither favorable nor unfavorable	Slightly unfavorable	Moderately unfavorable	Very unfavorable	Extremely unfavorable

Appendix B

New Food Questionnaire - 3

EXPLANATION: Several days ago you answered some questions about dehydrated foods. Now you have actually tried some of these while you were training in the jungle. We want to find out whether you have though about these foods since you first started using them.

QUESTIONS:

1. Did you think about these foods during your jungle training? Check one of the following:

_____Yes, much
_____Yes, some
_____Yes, but very little
_____No, not at all

2. Did you talk about these foods with your buddies during you jungle training? Check one of the following:

_____Yes, much
_____Yes, some
_____Yes, but very little
_____No, not at all

3. How favorable or unfavorable are you to the idea of living on these new dehydrated foods during jungle operations? Circle one of the nine boxes.

Extremely favorable	Very favorable	Moderately favorable	Slightly favorable	Neither favorable nor unfavorable	Slightly unfavorable	Moderately unfavorable	Very unfavorable	Extremely unfavorable

Appendix B

New Food Questionnaire - 3
(continued)

4. Generally, how favorable or unfavorable are you to the ways these new foods are packaged? Circle one of the boxes.

Extremely favorable	Very favorable	Moderately favorable	Slightly favorable	Neither favorable nor unfavorable	Slightly unfavorable	Moderately unfavorable	Very unfavorable	Extremely unfavorable

5. You probably have a few questions or comments in your mind about the packages or wrappers which contain these foods. Write down your questions and comments here.

6. Generally how favorable or unfavorable are you to the taste of these new foods? Circle one of the boxes.

Extremely favorable	Very favorable	Moderately favorable	Slightly favorable	Neither favorable nor unfavorable	Slightly unfavorable	Moderately unfavorable	Very unfavorable	Extremely unfavorable

7. You probably have a few questions or comments in your mind about the taste of these new dehydrated foods. Write down your questions or comments here.

Appendix B

New Food Questionnaire - 3
(continued)

8. The Army is seriously considering adopting these new dehydrated foods for use in tropical regions. However, before this change occurs, Army scientists are interested in finding out your own personal feelings about the way the new dehydrated foods compare with the C Ration which is now in current use.

How much better or how much worse are these new dehydrated foods compared to the C Ration ? Check one of the following:

_____ Dehydrated foods are very much better than C Rations.

_____ Dehydrated foods are much better than C Rations.

_____ Dehydrated foods are somewhat better than C Rations.

_____ Dehydrated foods are neither better nor worse than C Rations.

_____ Dehydrated foods are somewhat worse than C Rations.

_____ Dehydrated foods are much worse than C Rations.

_____ Dehydrated foods are very much worse than C Rations.

Appendix B

QUESTION: 1. How favorable or unfavorable are you to the idea of living on C Rations during jungle operations? Circle one of the boxes.

Extremely favorable	Very favorable	Moderately favorable	Slightly favorable	Neither favorable nor unfavorable	Slightly unfavorable	Moderately unfavorable	Very unfavorable	Extremely unfavorable

FOOD PREFERENCES:

Circle the phrase which best tells how much you like or dislike a food. If you have never tried the food circle "not tried."

X		9	8	7	6	5	4	3	2	1
not tried	Beef Patty (eaten dry)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Beef Patty (eaten rehydrated)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Fish Patty (eaten dry)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Fish Patty (eaten rehydrated)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Ham Patty (eaten dry)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Ham Patty (eaten rehydrated)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Meat Loaf (eaten dry)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Meat Loaf (eaten rehydrated)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Apples (eaten dry	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Apples (eaten rehydrated)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely

CAC Form
21 JULY 58 12 - 455

X		9	8	7	6	5	4	3	2	1
not tried	Peaches (eaten dry)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Peaches (eaten rehydrated)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Pears (eaten dry)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Pears (eaten rehydrated)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Strawberries (eaten dry)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Strawberries (eaten rehydrated)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Orange-Grapefruit Juice (instant)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Cocoa-Beverage (instant)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Bread Rolls (flexi-packed)	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Starch-Jelly Bars	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely

CAC Form
21 JULY 58 12 - 455

Personal Information and Opinions

1. Age: _____(To the nearest year)

2. Education: Check one of the following:

(1)_____Did not complete 8th grade
(2)_____Completed 8th grade
(3)_____Completed first year high school
(4)_____Completed second year high school
(5)_____Completed third year high school
(6)_____Completed fourth year high school
(7)_____Attended college
(8)_____Completed college

3. Business or trade school. Check one of the following:

(1)_____Never attended business of trade school.
(2)_____Attended business or trade school, but did not graduate.
(3)_____Graduated from business or trade school.

4. In all, how long have you been on active duty in the Army?

(1)_____No active duty
(2)_____Less than six months
(3)_____Between six and eighteen months
(4)_____Between eighteen and 36 months
(5)_____Three years or more

5. Considering your experience with, or knowledge of the Army, how would you rate your general attitude toward the Army?

(1)_____Extremely favorable
(2)_____Very favorable
(3)_____Moderately favorable
(4)_____Slightly favorable
(5)_____Slightly unfavorable
(6)_____Moderately unfavorable
(7)_____Very unfavorable
(8)_____Extremely unfavorable

6. What is your present rank?_____

7. What is your M.O.S.?_____

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