

Reprinted From *Activities Report* Volume 2 No. 2 May 1948

2716

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Quartermaster Corps Inspection Service

Subsistence

by Major P. P. Maiorano*, VC, and Major E. J. Sunderville**, VC

With the establishment of a central inspection system for subsistence, the Quartermaster Corps Inspection Service (QMCIS), the Armed Forces have now adequately complemented the central purchasing system for subsistence which has been developed over the years. OQMG Circular No. 33, 1 April 1948, which placed inspection responsibility with the QMCIS, accomplished two major objectives: (1) responsibility for subsistence inspection was delegated to a single agency, and (2) efficiency of inspection operations was correspondingly improved.

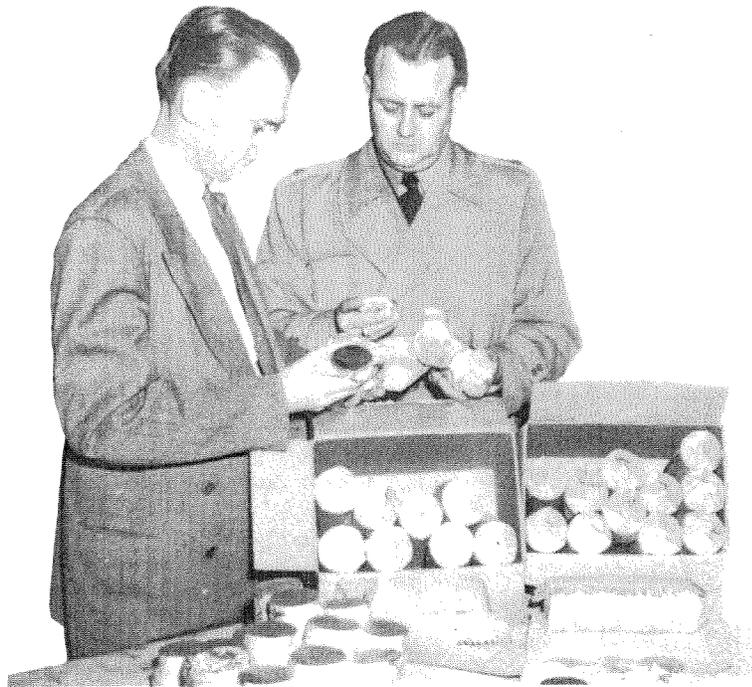
As formerly conducted, inspection of non-animal subsistence was the responsibility of each major procuring depot. Inevitably, there was not uniform inspection.

Decentralization of non-animal subsistence inspection, as it existed prior to 1948, produced conditions of ambiguity and uncertainty among procuring agencies, inspectors, and, equally important, among food processors and manufacturers. No unity of inspection policies and procedures existed, no adequate manuals or instructions except those established by individual depots, had been published; there were no overall training policies, no standards of quality control. Acceptance of supplies was, in the main, made at destination with advisory inspection in contractors' plants. Nevertheless, such an inspection system, inadequate and loosely jointed as it was, was better than none at all. This was quickly evidenced by the improvement in the quality of subsistence supplies issued to troops. However, inspection procedures fell far short of what was needed. The fact that there was no coordinated national inspection system resulted in numerous and varied procedures of inspection and required a large number of personnel with attendant high cost. The recently initiated reorganization of inspection procedures is designed to eliminate the faults of the older system.

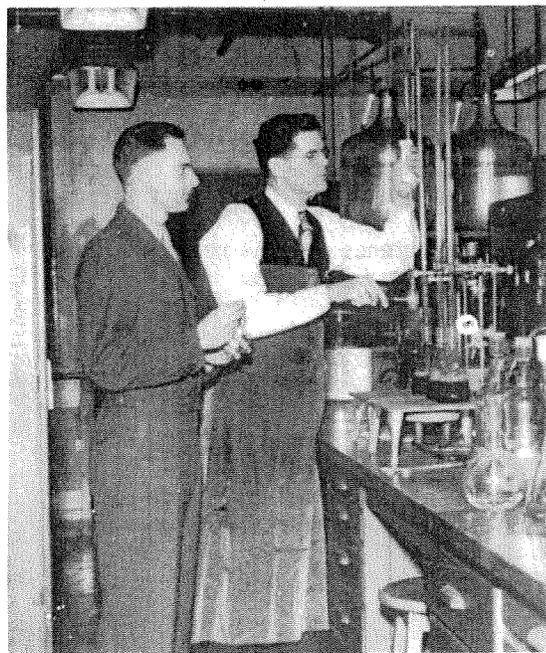
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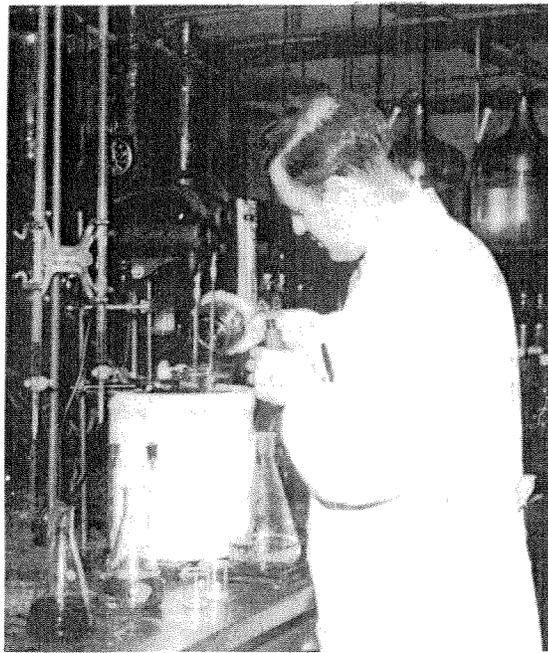
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CHOCOLATE BARS FOR OPERATIONAL RATIONS ARE EXAMINED IN MANUFACTURER'S PLANT. LEFT TO RIGHT: MR. THOMAS B. KENNEDY, INSPECTOR, AND MAJOR HAROLD F. JENKS, QMC, QUARTERMASTER CORPS INSPECTION SERVICE, CHICAGO BRANCH OFFICE.



QUARTERMASTER CORPS SUBSISTENCE TESTING LABORATORY, CHICAGO. LEFT TO RIGHT: MAJOR EDWIN J. SUNDERVILLE, VC, OFFICER IN CHARGE, AND MR. JOHN E. DESPAUL, CHIEF CHEMIST.



MR. ALBERT WEINSTOCK, QUARTERMASTER CORPS SUBSISTENCE TESTING LABORATORY, CHICAGO, PERFORMING ANALYSIS OF SOYBEAN MEAL PROCURED BY THE ARMED FORCES.

Drastic reorganization of the inspection system during World War II was not considered a first priority project. Both the Quartermaster Corps and industry were faced with the necessity of getting foodstuffs into supply channels as quickly as possible; inspection took a secondary role. In 1942 the Quartermaster Corps, with no organization with which to conduct subsistence inspection, yet confronted with a tremendous buying program, leaned heavily on the United States Department of Agriculture for its inspection of subsistence supplies. With the aid of a rapidly expanded force, inspection by the U. S. Department of Agriculture continued throughout the war and subsequent years under the nominal supervision of the procuring agencies. This condition was obviously not conducive to maximum quality assurance.

Growth of Subsistence Service

The development of the central purchasing system currently used by the Armed Forces made necessary the establishment of an inspection system which would operate along parallel lines. Army-wide controlled purchasing required Army-wide controlled inspection. Therefore, the Quartermaster General assigned subsistence inspection responsibility to an already existing organization, the Quartermaster Corps Inspection Service (QMCIS).

Because subsistence inspection procedures, as they existed prior to April 1, 1948, were loosely knit, it was necessary for the QMCIS to formulate two statements of policy:

(1) The purpose of the Army-wide subsistence inspection plan is to delineate the duties and responsibilities of each agency concerned with the establishment and enforcement of quality and condition of subsistence stores from the time procurement plans are instituted until such plans are consummated.

(2) In order that necessary channels of control, liaison and communication will be apparent, the function of each agency in the overall program in the inspection of overall stores must be considered in its relationship to each of the other agencies included in this program.

Further need for a subsistence inspection program was based upon six considerations:

(1) The critical nature of foodstuffs with respect to the health and welfare of the Armed Forces.

(2) The perishable nature of items which require close control from the time of assurance of quality standards at origin through each of the transit and storage phases up to and including its issue to troops.

(3) The magnitude and cost of the subsistence supply program and the consequent requirement for due care and economy.

(4) The lack of assurance that the Army was getting its full dollar value consistent with the quality standards and specifications.

(5) The lack of protection for the unsuccessful bidder who intended to furnish a product that complied with the specification.

(6) The need for a workable device by which the adequacy of subsistence specifications might be measured.

Since subsistence inspection on such a large scale was something new, the inspection service immediately set up a fact finding survey. Visits were made to the Quartermaster Purchasing Offices, Quartermaster Market Centers, General Depots, Food Plants, Medical Department and Quartermaster Laboratories, and Liaison Offices with the Veterinary Service and the U. S. Department of Agriculture to examine and discuss the operations of the various systems of subsistence inspection.

After this survey, responsible inspection personnel formed a task force committee charged with the development of an Army-wide subsistence inspection plan. The committee included representatives from the Research and Development Branch, Military Planning Division; the Subsistence Branch, Supply Division; the Headquarters Market Center System; and the Veterinary Corps.

At the conclusion of the task force committee meeting, a proposed outline for Army-wide subsistence inspection was submitted with the following objectives which were accepted as basic policy of the Inspection Service:

- (1) Maximum utilization of civilian personnel of the Quartermaster Corps for the inspection of subsistence stores.
- (2) Broadening the utilization of the Veterinary Corps and the U. S. Department of Agriculture.
- (3) Integrated use of schools operated by the Quartermaster Corps and Medical Department.
- (4) Free interchange of laboratory services by the seven existing Medical Department laboratories and the present Quartermaster Corps laboratory organization.
- (5) Effecting savings by reducing storage, transit, and spoilage losses.
- (6) Conservation of inspection manpower by the use of statistical sampling methods.
- (7) Central control and coordination of the Inspection function.

Organization

As previously mentioned, the mission, responsibilities and organization of the QMCIS for controlling and effecting the inspection of non-perishable subsistence and establishing policies and procedures related thereto were established by OQMG Cir. No. 33, 1 April 1948 and Department of the Army Supply Bulletin 10-119, 27 July 1948. The administrative procedures for handling perishable subsistence appear in a revised Department of the Army Supply Bulletin 10-117.

The QMCIS (Subsistence) consists of:

- (1) A headquarters responsible for standardization, control, and direction of field installations.
- (2) The following branch offices responsible for inspection of subsistence, both perishable and non-perishable, purchased by Central Purchasing Offices:

QMC INSPECTION SERVICE OFFICE

New York Branch Office
Quartermaster Corps Inspection Service
111 East 16th Street

Chicago Branch Office
Quartermaster Corps Inspection Service
1819 West Pershing Road
Chicago 9, Illinois

CORRESPONDING PURCHASING OFFICE

For Non-Perishables: New York Quartermaster Purchasing Office
For Perishables: New York Quartermaster Market Center

For Non-Perishables: Chicago Quartermaster Purchasing Office
For Perishables: Hqs., QM Market Center System & Chicago QM Market Center

QMC INSPECTION SERVICE OFFICE

Oakland-San Francisco Branch Office
Quartermaster Corps Inspection Service
Oakland Army Base
Oakland 14, California

Fort Worth Branch Office

Denver Branch Office

New Orleans Branch Office

Los Angeles Branch Office

Seattle Branch Office

Richmond, Va. Branch Office

Columbia, South Carolina Branch Office

CORRESPONDING PURCHASING OFFICE

For Non-Perishables: Chicago Quartermaster
Purchasing Office Western Branch
For Perishables: San Francisco QM Market
Center

Fort Worth QM Market Center
(Perishables Only)

Denver QM Market Center
(Perishables Only)

New Orleans QM Market Center
(Perishables Only)

Los Angeles QM Market Center
(Perishables Only)

Seattle QM Market Center
(Perishables Only)

Richmond QM Market Center
(Perishables Only)

Columbia QM Market Center
(Perishables Only)

Methods of Operation

To accomplish its mission of centralized control the QMCIS coordinates all inspection; it utilizes and supervises its own staff of civilian inspectors, and in addition utilizes the inspection services of the Army Veterinary Corps, the U. S. Department of Agriculture and available Quartermaster Corps or other government laboratory services.

Each subsistence contract issued by the central purchasing office is assigned to the QMCIS Branch Office which is conveniently located in the immediate vicinity. Arrangements for inspection by the Veterinary Corps or outside agencies or by other branches of the QMCIS are made by the branch office having primary inspection responsibility for the contract.

When either the inspection service or the consignee (in cases of destination inspection) determines that supplies fail to meet contract requirements they will normally be rejected. Further questions regarding outright rejections or acceptance on a deviation from contract requirements, are resolved between the Inspection Service and the procurement office.

When the Branch office receives a contract from its corresponding Purchasing Office, the methods of inspection to be utilized are determined by the Chief Inspector of the appropriate subsistence commodity section.

Inspection details on contracts for products of animal origin are processed by the attending veterinarian.

For all other products a determination is made as to whether personnel of the Quartermaster Corps or of the U. S. Department of Agriculture will be utilized, depending upon economy, regulations, time factors, and the location of the inspection point or the contractor's plant.

When it is determined that the U. S. Department of Agriculture can perform an inspection job better or more economically (this applies mostly to canned fruits and vegetable products purchased on a grade basis), a request for inspection is sent immediately to the U. S. Department of Agriculture Field Office nearest the contractor's plant. The request for inspection includes not only grade determinations but also inspection for packaging, packing, and marking specifications.

On all contracts in which requirements are of a military nature or procured on military specifications such inspections are usually performed by the QMCIS personnel. Upon receipt of such a contract a plan for the inspection job is delegated to an inspection supervisor who personally visits the contractor's plant and makes a written record of the Working Agreement which includes mutual rights and obligations, sampling plan procedure, and, usually, a pre-production survey.

After the pre-production survey has been reviewed and concurred in by the Chicago Branch Office and the Purchasing Office, copies are sent to the contractor and to the inspector who is to perform the inspection job. The inspector is equipped with all contractual documents, bids, specifications, and the inspection procedures for the item he is to inspect. During the inspection job he draws his samples according to a systematic sampling plan, performing laboratory analyses in plants with proper facilities; when plants have no laboratory facilities, samples are forwarded to the QMC Subsistence Testing Laboratory, Chicago.

The development of this laboratory at the QM Food and Container Institute for the Armed Forces justifies some further elaboration. During World War I, a one-man Laboratory with limited scope was organized at the Chicago Quartermaster Depot. In 1934, after the CCC had been established, a second chemist was added to the staff, and during World War II, the staff grew considerably, the amount of laboratory equipment increased, the size of the laboratory and the scope of its activities were enlarged. On June 8, 1948, the laboratory was reorganized and was officially designated the Quartermaster Corps Subsistence Testing Laboratory. It is responsible for the analysis of non-perishable foods of non-animal origin.

The detection of faulty products, of materials that may be injurious to well-being of the Army, and the determination of the degree of conformity of products with government specifications for subsistence items purchased for the Armed Forces are the principal missions of the laboratory.

The laboratory considers food analysis from at least two different standpoints: first, it ascertains whether or not food is considered pure or free from adulteration; secondly, it determines the actual composition of the food from the economic point of view. Thus the Armed Forces are protected against fraud and injury, and necessary information is provided for intelligent buying.

The Quartermaster Corps realizes the necessity for protecting troops from impure or unsafe foods and is cognizant of the need for quality control for subsistence items. The development of new and special type rations or the improvement of rations as a whole is a continuing program. This in turn makes inspection at time of procurement far more complicated and infinitely more important, because no matter how diligently the research is performed to determine the requirements, nor how detailed and adequate the specifications, it is all to no avail unless this information is used properly by a competent and fully enlightened inspection service which interprets and enforces these specifications when subsistence items are offered to the Army in fulfillment of contracts.

QMCIS civilian subsistence inspectors in the field examine the subsistence items insofar as possible in the field. When time, facilities, and equipment are not available for the field inspector to accomplish all of the necessary tests or when he otherwise desires an Army Laboratory test, he withdraws and submits adequate samples for testing to the Army laboratory. The laboratory food analysts (those technically trained in chemistry, bacteriology, bio-

chemistry, microbiology, and filth determination) thereupon analyze the samples submitted in order to determine their composition and conformance with specifications. The laboratory is not authorized to conduct analyses of samples unless the request is received through established Armed Forces inspection agencies.

The methods used by the laboratory to analyze the samples are those officially recognized and available to the trade and set forth in the AOAC, Government Specifications, and/or purchase instruments. The samples, when received, are first given an identification number, prepared by thorough mixing, then analyzed. Upon completion of the analysis, the QMCIS is notified of the results.

Upon receipt by the Chicago Branch Office, QMCIS, of satisfactory laboratory reports, shipments are released to carrier facilities for transport to destination. If laboratory reports indicate an unsatisfactory condition, determination is made as to whether there is any loss in military value due to lack of the necessary requirements. If there is no loss in military value and the defects are of minor nature, such deviation will be mutually resolved between the Inspection Service and the Procuring Agency. Major defects usually result in outright rejections.

Quality Standards

The QMC Inspection Service is responsible that quality standards are maintained. Such activity serves as the "eyes and ears" for the procuring agencies and assists in the clarification of specifications by the use of Standard Inspection Procedures for each item to be inspected.

The adoption of a system of quality control and systematic sampling methods has materially improved the quality of merchandise submitted for Government acceptance. The number of rejections has decreased substantially, as attested by the fact that considerably fewer re-inspections are performed today than in the earlier stages of inspection control.

The evolution of statistical quality control had its origin in the Bell Telephone Laboratories. Dr. Shewhart of the laboratory developed this system for use throughout the American Telephone and Telegraph Company. He recognized that it was infeasible and impracticable to attempt to inspect all of the components that went into telephones. Each year the Western Electric Company and its subsidiaries and suppliers expended millions of dollars on inspection but had no knowledge of how much inspection was actually required or how much the inspection was actually worth. The Shewhart Method postulated that it was necessary to resort to sampling schemes. He knew that any sampling plan would involve two fundamental risks: one, that a bad lot would yield a good sample, and two, that a good lot would yield a bad sample. In order to control these risks, statistical studies were made and the probabilities determined. This provided management with the necessary tool to evaluate the worth of inspection. In its operation the same concepts that are used by actuaries in a life insurance company are used to control the quality of the product.

After the first publication of the Bell Telephone Technical Journal on Systematic Sampling Schemes, the Department of the Army became interested in its application to the Government Acceptance Program. The Ordnance Department was the first to actually apply the methods. The results were so successful that Army Service Forces in 1943 issued a directive that all technical services of the Army would exploit its possibilities to the maximum. The Quartermaster Corps, upon activation of its inspection service, established Quality Assurance as a Standard Inspection Procedure for all general supply items. In April, 1948, with the activation of subsistence inspection into the QMCIS, the same procedures that had proven themselves on other items were applied to non-perishable subsistence items.

Future Program

The effect of Quality Assurance Systems has been felt in all echelons of the Department of the Army concerned with procurement of supplies. In July, 1948, The Quartermaster General directed that "Headquarters QMCIS, will furnish the P & C Officer within 7 working days after receipt of this directive Acceptable Quality Levels and Defects Classification Chart to be included in the Invitation to Bid."

This statement is included in all Procurement Directives for commodities on which approved Standard Inspection Procedures have been prepared.

At present the Quality Assurance Section of the Chicago Branch Office, QMCIS is preparing and submitting Standard Inspection Procedures to the Quartermaster Food & Container Institute for approval. These Standard Inspection Procedures will prove a valuable tool in the evaluation of contractors' performance. The General Staff is now considering the use of the SIP as a possible means of determining responsibility of bidders who previously held contracts with the Army. The Research and Development Branch also will be able to use Quality Assurance methods and records to determine the ability of industry to produce to specification requirements.

Also benefited by the dissemination of the Standard Inspection Procedures will be members of the food industry who will have precise prior information as to the quality product expected by the Army. For these reasons the preparation of the SIP's for each subsistence commodity is expected to place subsistence inspection on a systematic, economical, expeditious footing and will prove helpful to procuring agencies for the Armed Forces.

