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REPORT ON IRREGULARITIES IN THE MARKETING OF GRAIN

An Evaluation of the Inspection and Weighing of Grain

PREPARED BY THE

UNITED STATES GENERAL ACCOUNTING OFFICE

FOR THE

COMMITTEE ON AGRICULTURE AND FORESTRY
UNITED STATES SENATE

AND THE

COMMITTEE ON AGRICULTURE
UNITED STATES HOUSE OF REPRESENTATIVES

FEBRUARY 17, 1976

NOTICE

THERE SHOULD BE NO RELEASE OF THIS DOCUMENT UNTIL TUESDAY A.M., FEBRUARY 17, 1976

Printed for the use of the Senate Committee on Agriculture and Forestry and the House Committee on Agriculture

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LETTER OF TRANSMITTAL

COMPTROLLER GENERAL OF THE UNITED STATES,
Washington, D.C.

Hon. THOMAS S. FOLEY,
Chairman, Committee on Agriculture,
House of Representatives.

Hon. HUBERT H. HUMPHREY,
Chairman, Subcommittee on Foreign Agricultural Policy, Committee on Agriculture and Forestry, U.S. Senate.

DEAR MR. CHAIRMAN: This report discusses fundamental weaknesses in the national grain inspection system which require action by the Congress and the Secretary of Agriculture to restore the system's credibility and attain its intended objectives. The report also discusses the need for the Secretary of Agriculture to improve the procedures for handling complaints from foreign buyers of U.S. grain and intensify research and development on the official U.S. grain standards.

We made our review pursuant to your joint request. Department of Agriculture officials and staff gave us their full cooperation during the review.

The Department's comments have been incorporated in the report and its letter is included as appendix VII.

As agreed, we are sending one copy to the Secretary of Agriculture with the understanding that the contents are not to be released until the report or its contents are released by either of you.

After the report is released, we plan to send copies to the Secretary of State; the Director, Office of Management and Budget; the Chairmen of the Senate and House Committees on Appropriations, the Budget, and Government Operations; and other interested congressional committees, Members of Congress, and individuals.

Sincerely yours,

ELMER B. STAATS,
Comptroller General
of the United States.

FOREWORD

Irregularities in the inspection of grain under the United States Grain Standards Act became widely known last May when newspapers reported the indictments of several licensed private inspectors in New Orleans and Houston.

Since that time, investigations have gone forward in several areas into allegations that grain has been misgraded and short-weighted, that bribes have been paid to inspectors, that grain has been stolen systematically, and that other Federal laws have been violated.

To date, grand juries in New Orleans, Houston, Dallas-Fort Worth, and Portland, Oreg., have returned 38 indictments charging 61 people and four companies with more than 280 criminal acts. Many of those indicted have pleaded guilty.

Since June of last year, the Senate Committee on Agriculture and Forestry and the House Committee on Agriculture have been looking closely at the entire grain inspection and handling system, especially that segment which exports grain.

At the onset of the Committees' investigations, it became apparent that the staff and resources of the Committees were not sufficient for the exhaustive investigation needed of the complex and far-ranging grain marketing system of the United States.

Therefore, we requested on June 24, 1975, that the Comptroller General of the United States undertake a high priority investigation of grain marketing and inspection, from farm field to foreign port, utilizing the expertise and staff of the U.S. General Accounting Office.

The Comptroller General responded admirably, and this report is the result of the painstaking work of over 40 investigators assigned by GAO to the most thorough investigation of our grain marketing and inspection system ever undertaken.

How important is our grain inspection system?

Last year, the United States exported $21.9 billion worth of agricultural products, most of it grain which is subject to inspection under the U.S. Grain Standards Act.

Earnings from commercial grain exports made an important contribution, not only to farm income, but also to jobs in the transportation and storage industries and to the overall economic recovery in this country in the latter part of 1975.

In addition, concessional sales under our Public Law 480 (Food for Peace) program made important contributions to farm income in this country and to the development of poorer countries and the war against hunger throughout the world.

The quality of American grain in world markets has been an important factor in the success of our commercial and humanitarian export programs.

We believe it essential to continued economic recovery, and for the economic position of the United States in the world for years to come, that the quality of American grain exports and the integrity of our grain inspection system be maintained at as high a level as possible.

Simply stated, grain customers in other countries will buy the best quality grain they can obtain, assuming that price, shipment terms, supply, and other factors are equal.

It is essential that our customers have faith in the integrity of our inspection and weighing system, and that they get the grade, quality, and quantity of grain for which they contract and pay.

Much attention to date has been directed at criminal violations, especially of the U.S. Grain Standards Act. But the concerns of the Committees are not limited to criminal violations.

It is essential that we understand the quality grades which are assigned to grain, the methods by which grain is graded and weighed, the adequacy of the transportation and handling system, and a wide range of elements which make up a total picture.

We must then look carefully at each element and make sound decisions which will facilitate improvements in inspection and weighing.

The findings of the General Accounting Office will be invaluable to the Committees as we move forward with legislation to improve our grain handling and inspection system.

While the Committees have not had an opportunity to study the GAO's conclusions and recommendations, and therefore are not in a position to endorse or comment in detail on them, we can give every assurance that they will be considered carefully as the legislative process moves forward.

We are indebted to the Comptroller General, who responded to our request with the urgency which we expressed, and to those staff members of the GAO who labored long and diligently to produce this comprehensive report.

We believe it is a report which will be studied carefully by farmers, elevator operators, those in the grain transportation and warehousing industries, exporters, shippers, and all who are concerned with the future of the basic industry of food and agriculture.

THOMAS S. FOLEY,
Chairman, Committee on Agriculture, U.S. House of Representatives.

HUBERT H. HUMPHREY,
Chairman, Subcommittee on Foreign Agricultural Policy.

Letter from Hon. Hubert H. Humphrey and Hon. Thomas S. Foley Requesting an Investigation By the General Accounting Office

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U.S. Senate,
Committee on Agriculture and Forestry,
Washington, D.C., June 24, 1975.

Hon. Elmer B. Staats,
Comptroller General of the United States, General Accounting Office,
Washington, D.C.

Dear Mr. Staats: The current grain inspection scandal is a matter that deserves the immediate attention of Congress. It threatens the credibility of the United States as the largest exporter of agricultural commodities in the world.

In 1974, the United States exported $22 billion of agricultural products. Of this amount $12.5 billion of products were subject to inspection under the U.S. Grain Standards Act.

The United States had a trade deficit of $5.8 billion in 1974. Had it not been for the fact that our net favorable balance of trade in agriculture was almost $12 billion, we would have had a devastating trade deficit of almost $18 billion.

Thus, it is imperative that we thoroughly examine and reform our grain export system, not only for the sake of American farmers, but for the strength of our entire economy.

We must have the resources and expertise of the General Accounting Office to accomplish this goal.

Specifically, we wish the General Accounting Office to assume the responsibility for a full and complete evaluation of the entire marketing chain for grain—from farm to foreign port. This evaluation must be directed at the impact of each aspect of the marketing process on the quality of U.S. grain.

This evaluation would include, but would not be limited to the following particulars:

(1) Determine the quality of grain at point of first sale and at each subsequent step in the marketing process.

(2) Determine the method of sale, handling, drying, and transportation and effect on quality at each such step.

(3) Determine the effectiveness of the organizational and management structure of the Federal inspection system and the reliability of its supervisory function on the entire inspection system. Include an evaluation of the contractual arrangements for inspector supervision by official inspection agencies. Determine the corporate relationship, if any, that exists between official inspection agencies and the firms for which inspection is performed.

(4) Determine the effectiveness and reliability of the present inspection system and weighing procedures from the farm to port. Evaluate the existing U.S. standards and grades for grain.

(5) Describe the legal and contractual responsibilities of buyers and sellers at each step in the marketing chain as they relate to quality and weights.

(6) Determine the operating procedures at port elevators both with respect to incoming and outgoing grain, particularly as they might affect quality of grain. In addition to general and specific treatment of management practices this should include data on surveillance, sampling, and loadings.

(7) Determine what happens on ships prior to, during, and after grain is loaded. Follow shipments from domestic port elevators to foreign ports and unloading. Also, determine the responsibilities of the ship owners and captains.

(8) Address the problems, if any, in P.L. 480 shipments and determine if they differ from commercial transactions.

(9) Evaluate the complaints received, method of handling, procedures, and responsiveness of the Federal government to such complaints, both formal and informal, regarding grain quality and weights for the last 10 years.

We suggest that you have investigators visit Canada or other major grain exporting nations for purposes of better evaluating the U.S. system.

The Senate Committee on Agriculture and Forestry and the House Committee on Agriculture desire to use the report of the General Accounting Office in their consideration of permanent changes in the existing U.S. Grain Standards Act, the U.S. Warehouse Act, and other statutes. Because of the importance of this subject to the national economy, it is imperative that this request receive priority rating and a final report be made to the Committees no later than February 15, 1976. We also anticipate that the General Accounting Office would keep the Committees posted at intervals by letter on the progress of the on-going investigation.

We appreciate your fine cooperation on prior investigations and look forward to an excellent effort on this investigation.

With best wishes.

Sincerely,

THOMAS S. FOLEY,
Chairman, Committee on Agriculture, U.S. House of Representatives.

HUBERT H. HUMPHREY,
Chairman, Subcommittee on Foreign Agriculture Policy.

DIGEST

Serious problems exist in the national grain inspection system authorized by the U.S. Grain Standards Act. The Department of Agriculture's role as overall supervisor has serious inherent limitations. It has not been able to insure the integrity of a system operated by a widely dispersed group of over 100 State and private agencies and trade associations.

Although some inspection services have been satisfactory, the system generally has

—operated without effective controls, procedures, or lines of authority;

—tolerated conflicts of interest between the grain inspection and merchandising operations; and

—not been responsive to the limited supervision provided by the Department's Agricultural Marketing Service.

Grain exports are an extremely important factor in the U.S. balance-of-trade position. The 1974 crop of U.S. grains covered by the act was valued at about $33 *billion*. During fiscal year 1975, U.S. exports of grain subject to inspection under the act totaled about $12.5 *billion*. (See p. 6.)

Weaknesses in the national inspection system have led to extensive criminal abuses, such as intentional misgrading of grain, shortweighing, and using improperly inspected carriers. (See ch. II.) Disclosure of these matters in the world press and in congressional hearings has resulted in an erosion of confidence in the system in the United States and internationally.

Action is needed to restore credibility in the system, promote orderly grain marketing, protect buyers' and sellers' interests, and build confidence in the quality and consistency of U.S. grain at home and in world markets. Accordingly, fundamental changes are required in the system. An essentially all-Federal inspection system is needed to:

—Restore integrity and confidence in the inspection system.

—Provide greater uniformity and consistency in inspection procedures and operations.

—Establish an independent system, eliminating actual and potential conflicts of interest.

—Increase foreign trade or at least reduce chances of customers choosing to buy from other sources.

—Develop an inspection force conforming to uniform hiring and training requirements.

—Permit rotation of the inspection force among specific localities.

—Provide for maximum use of standardized equipment and better maintenance of equipment.

—Reduce the number of multiple or duplicate inspections presently required.

—Reduce the number of inspection agencies to increase administrative efficiency.
—Place inspectors under direct control of Agriculture, to provide more effective authority to deal with inspector deficiencies.
—Eliminate present inequities whereby some inspectors earn annual salaries or incomes from $30,000 to, in some cases, $78,000.
—Give Agriculture direct responsibility and authority to deal with elevators whose complex grain-handling systems allow for easy circumvention of controls over drawing of representative samples.
(See p. 44.)

Recognizing that creating an essentially all-Federal system will take time and that, while some changes can be effected immediately, other changes, although urgently needed, will for practical reasons take more time to fully accomplish, GAO recommends that the system be established in phases as follows:

The Congress should

PHASE I

—provide Agriculture with authority to take over inspection services immediately from those States or firms where serious problems are disclosed,
—direct Agriculture to intensify surveillance over on-going inspection services being provided by the States, trade associations, and private agencies until phases II and III are implemented,

PHASE II

—authorize and direct Agriculture to assume responsibility at the earliest possible date for providing inspection services— sampling, grading, and weighing—and for issuing official inspection certificates at all port elevators,

PHASE III

—authorize and direct Agriculture to extend the Federal inspection system (including sampling, grading, and weighing) to the main inland terminals, after sufficient experience has been obtained at the ports, and
—direct Agriculture to provide inspection services, on a request basis and under contracting or licensing arrangements, at minor inland terminals and country elevators. Such services should be provided under Agriculture-prescribed standards and procedures and should be subject to departmental review and supervision.
(See p. 45.)

The Congress should also establish the system on a reimbursable basis whereby the fair costs of operating the system would be recovered through fees.

Legislation and regulations developing standards and procedures for the system should give appropriate consideration to the following matters:

—*Conflicts of interest.* The system should prohibit all of these, actual and potential, and should impose appropriate penalties

for violations on the part of grain handlers and inspection personnel. (See pp. 12 and 45.)

—*Sampling grain.* Adequate controls and procedures should be established for this process, including equipment operation and maintenance. Automated equipment should be mandatory to the extent feasible. (See pp. 14 and 45.)

—*Weighing grain.* Grain weighing should be made an integral part of the inspection system. Adequate controls, standards, and procedures should be established, including safeguards over equipment caliberation and maintenance. (See pp. 20 and 45.)

—*Grading grain.* The need for improved accuracy and uniformity should be met through continuing research and training. (See pp. 23 and 45.)

—*Personnel administration.* Uniform standards for recruiting, training, and supervising inspection personnel should be established and maintained, and a rotation program and work production standards for inspectors should be established. (See pp. 30 and 45.)

—*General administration.* Quick and thorough reviews and investigations of reported discrepancies and abuses should be required. (See pp. 36 and 45).

Inspection certificates should clearly show whether Agriculture or other agencies prepared them. (See p. 45.)

The provision that superseded certificates be surrendered when repeat inspections are requested should be stringently enforced. (See pp. 25 and 45.)

Instructions on examinations of stowage space in carriers should be revised to set forth training and performance requirements and to describe all situations where examinations should be required. (See pp. 27 and 45.)

Appropriate annotations should be made on inspection certificates for grain loaded at Great Lakes ports stating that such certificates are not valid for transshipped grain. (See pp. 29 and 45.)

To the extent practicable, grain inspection operations should be open to public scrutiny by foreign buyers or other interested parties. (See p. 45.)

Agriculture top officials reemphasized to GAO the Administration's desire to maintain the existing basic organizational structure for the national grain inspection system. Present problems and deficiencies, they maintained, can be corrected through improved administration, granting Agriculture additional authorities, and imposing more stringent penalties. Agriculture expressed agreement with most other aspects of GAO's recommendations. (See p. 46 and app. VII.)

GAO's view is that the Administration's proposal would retain many of the present system's fundamental disadvantages and limitations and that the deeply entrenched and pervasive problems of the past and present could not be dealt with effectively under such a system.

Foreign Buyers' Complaints About U.S. Grain

Inquiries in nine foreign countries revealed much dissatisfaction with U.S. grain sold abroad. Many customers believed they regularly received lower quality and weight than they paid for. The resulting cost in terms of diminished foreign sales and other effects is not calculable. Many buyers said the United States would continue to be their principal grain supplier but that they had reduced their purchases of U.S. grain and were buying more from other countries. A few said they had stopped buying U.S. grain altogether. (See pp. 51 to 56.)

Agriculture has not been sufficiently sensitive to foreign buyers' problems and has offered little assistance to them. Most Foreign Agricultural Service attaches GAO visited were not fully aware of the extent of foreign buyers' problems and said they lacked the authority, expertise, and resources for investigating complaints.

Procedures for handling foreign complaints were poorly defined and generally ineffectual. No central coordinating agency was designated to insure that all complaints were recorded, investigated, and responded to and that the combined results were analyzed for possible use in reexamining inspection procedures. (See pp. 56 to 61.)

Recommendations to the Secretary of Agriculture for improving the handling of foreign complaints are on page 62. Agriculture agreed with the recommendations and outlined actions it was taking or would take. (See p. 63.)

The U.S. Grain Standards

Many persons pointed out that the U.S. grain standards do not include certain important grain quality indicators but include other relatively unimportant or unreliable indicators. According to one authority, the standards were developed and amended over the years primarily to meet the minimal needs of grain merchandisers, and the needs of growers and food processors were not considered adequately.

Certain respondents said greater emphasis was needed on developing standards which (1) stressed qualities relating to grain's end use, such as protein in wheat and oil and protein in soybeans, and (2) provide incentives to farmers to produce higher quality grain. Before certain refinements or changes can be made to the grain standards, however, new equipment or inspection techniques must be developed to readily ascertain grade in accordance with the proposed standards. (See pp. 65 to 69.)

Agriculture has not been sufficiently concerned about the need for adequately directed and coordinated research on the grain standards by its several agencies. The Secretary should intensify research and development on the U.S. grain standards and provide for greater coordination among the departmental agencies with research and marketing responsibilities. (See p. 71.)

Agriculture concurred in the need for intensified research and development and said its agencies would jointly design and cost out priority research proposals. (See p. 71.)

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Abbreviations

AMS— Agricultural Marketing Service
ARS— Agricultural Research Service
BCFM— broken corn and foreign material
FAS— Foreign Agricultural Service
FBI— Federal Bureau of Investigation
GAO— General Accounting Office
USDA— U.S. Department of Agriculture

REPORT ON IRREGULARITIES IN THE MARKETING OF GRAIN

Chapter 1

INTRODUCTION

Properly inspecting and weighing grain is important for the smooth functioning of the U.S. grain-marketing system. Sellers and buyers from farms to foreign ports depend on the quality and quantity of grain as being represented fairly, accurately, and in accordance with applicable laws and regulations. In recent months, confidence in the integrity of the U.S. grain-marketing system has been shaken as many cases of improper inspections and shortweighing of grain have been disclosed and as federally licensed grain inspectors, grain handlers, and others involved in the system have pleaded guilty or been convicted of illegal activities.

Because of concern about the impact of these irregularities, particularly on foreign purchases of U.S. grain which must compete with the grain exports of other countries, the House Committee on Agriculture and the Subcommittee on Foreign Agricultural Policy, Senate Committee on Agriculture and Forestry, asked us to review the grain marketing system. Congressional committee staffs and other Federal agencies, namely, the U.S. Department of Agriculture (USDA), the Justice Department and its Federal Bureau of Investigation (FBI), the Federal Trade Commission, and the Internal Revenue Service, have also been reviewing and investigating certain aspects of the system and the activities of grain inspectors and others.

Grain-Marketing Chain

U.S. grain, grown predominantly in the Midwest (see app. I), moves from farms to domestic users or to export vessels generally through a system of grain elevators (warehouses). These elevators are owned by individuals or farmers' cooperatives or are part of an elevator chain owned by a grain company. They are located in rural farming communities (country elevators), at principal grain-marketing centers (inland terminals), and at export locations (port elevators). According to a USDA official, there are about 8,000 country elevators, 450 inland terminals, and 80 port elevators in the United States.

An elevator generally consists of two basic parts: storage tanks, or bins, and a workhouse. The workhouse contains machinery for receiving, loading out, weighing, and conditioning grain. When received, grain is dumped into an unloading pit. From there it is picked up by buckets attached to a vertical belt and is elevated. The grain then drops by gravity into a spout and moves either to a scale bin where it is weighed before storage or directly to a storage tank where it is generally stored commingled with other grain of the same type

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and with similar characteristics. Grain may be conditioned—cleaned, dried, or blended—in the elevator at any time before loadout.

For loadout, grain moves from the bottom of the storage tank by gravity onto a belt and is elevated. The grain then drops by spout into a conveyance, such as a railcar, or onto a conveyor belt for loading into a ship or barge. Before being loaded, grain may be routed to a scale bin for weighing. Illustrations of an elevator receiving and loading out grain are shown in appendixes II and III.

COUNTRY ELEVATORS

The country elevator, such as the one shown below, is the first link in the chain of moving grain from a farm to the ultimate user. About 84 percent of the grain marketed by U.S. farmers is delivered to country elevators, generally by truck. The grain may be sold to the country elevators or stored there for subsequent sale or use.



COUNTRY ELEVATOR

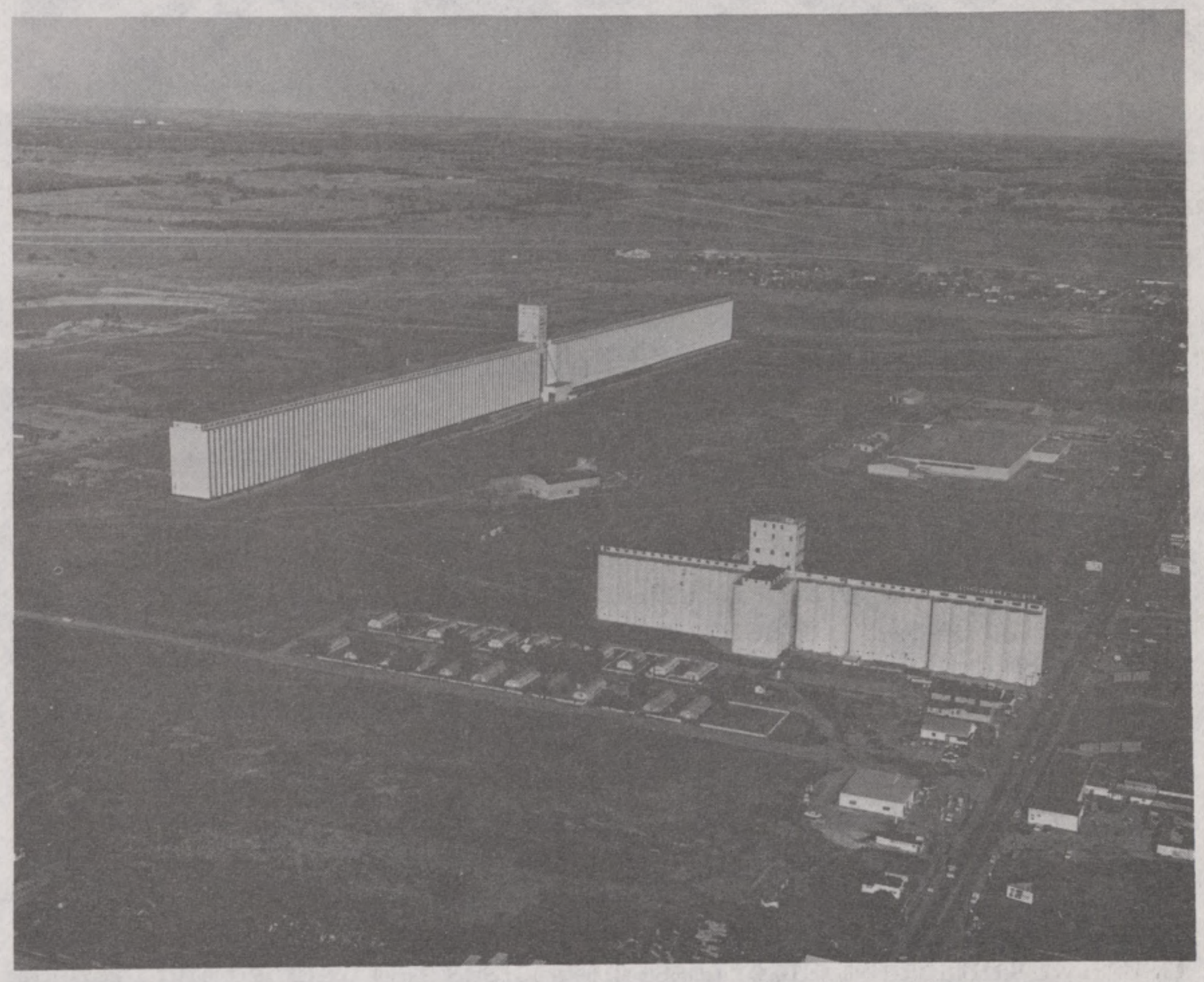
At the country elevators, the weight of the farmer-delivered grain is determined by comparing the weights of the truck before and after the grain is dumped into the elevator pit. Country elevators generally pur-

chase grain by weight at a local market price as adjusted for discounts and premiums on the basis of quality factors. To ascertain the grain's quality, a sample is taken either by a probe (see p. 16) before the grain is dumped or by a hand-held container while it is being dumped.

Grain is shipped from country elevators to inland terminals or port elevators in railcars, barges, or large trucks. The railcars carry about 2,000 to 3,500 bushels each, and the trucks carry about 750 bushels each.

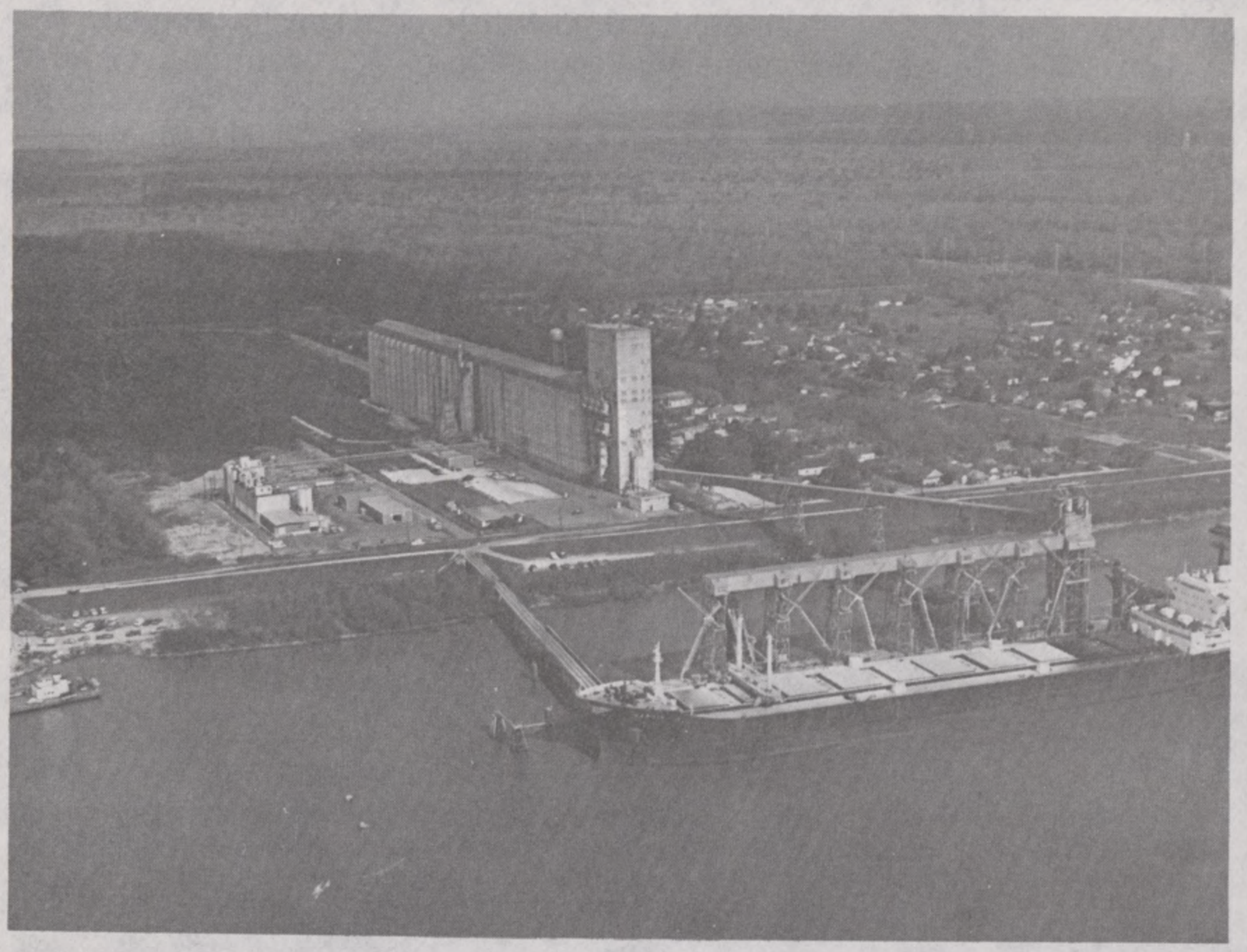
INLAND TERMINALS AND PORT ELEVATORS

Inland terminals, such as the ones shown below, are usually located at major transportation centers. They receive grain mainly from country elevators. The grain is stored or conditioned for the domestic market or for shipment to port elevators. Domestic users include manufacturers of flour, cereals, animal feeds, starch, and vegetable oils. Outgoing grain generally is shipped by rail or barge.



INLAND TERMINALS

Port elevators, such as the one shown below, are located at ocean, Gulf of Mexico, or Great Lakes ports.



PORT ELEVATOR

These elevators generally receive grain by rail and barge from country elevators and inland terminals. Grain may receive additional conditioning at a port elevator before being bulk-loaded into vessels for export. The port elevators' load-out capacities generally range from 40,000 to 80,000 bushels an hour.

Bulk carriers, tankers, tramp steamers, and other vessels are used for exporting grain. According to a steamship company official, the vessels' capacities vary widely but a vessel ordinarily can be loaded within a few days. He said that bulk carriers, with capacities ranging from about 700,000 to 1.3 million bushels, are generally used. Grain shipments to inland terminals and to port elevators are generally settled on the basis of incoming, or destination, weights and grades. Usually grain loaded out of these elevators is also weighed and graded. For export sales, settlement is normally made on the basis of weights and grades determined at the port elevator as the vessel is being loaded.

GRAIN SUPPLY AND DISPOSITIONS

The following table, based on USDA publications, summarizes the supply and dispositions of grain in the United States during the 1973–75 (1974 crop) marketing year.[1]

---

[1] Mostly during fiscal year 1975. The beginnings of the marketing years vary: Corn, October 1; wheat, July 1; soybeans, September 1; other grains, July 1 or October 1.

]In millions of bushels]

	Wheat	Corn	Soybeans [1]	Other	Total
Supply, beginning of year	247	483	171	449	1,350
1974 production	1,793	4,651	1,233	1,589	[2] 9,266
Imports	2	2	----------	20	24
Total supply	2,042	5,136	1,404	2,058	10,640
Dispositions:					
Domestic	683	3,628	797	1,487	6,595
Export	[3] 1,039	1,149	421	267	[3] 2,876
Total dispositions	1,722	4,777	1,218	1,754	9,471
Supply, end of year	320	359	186	304	1,169

[1] Soybeans, although technically oilseeds, are covered by the Grain Standards Act (see p. 8) and are included in the general term "grain" used in this report.
[2] As shown in app. I, the value of this 1974 production was about $33,000,000,000.
[3] Includes equivalent of 40,000,000 bushels of wheat in the form of flour and other wheat products.

During the 1974–75 marketing year, exports accounted for about 51 percent of the total wheat supply, 30 percent of the soybean supply, and 22 percent of the corn supply.

Grain Exports

In fiscal year 1975, the value of all agricultural exports was $21.6 billion on the basis of Bureau of the Census data. Of this, $12.5 billion, or 58 percent, was for wheat, soybeans, corn, and other grains that by law must be inspected before being exported if sold by grade. Agricultural imports totaled $9.6 billion, netting an agricultural trade balance of $12 billion which more than offset a nonagricultural trade deficit of $9.9 billion.

Of the $12.5 billion of inspected grain actually exported in fiscal year 1975, wheat and corn accounted for about 70 percent, as shown in the following table.

[In millions]

	Value	Bushels
Wheat	$4,797	999
Corn	3,988	1,122
Soybeans	2,951	404
Sorghum	616	191
Barley, oats, and rye	170	53
Total	12,522	2,769

The grain was exported by vessel, except for a small portion sent by rail and truck to Mexico and Canada.

Japan ($2.2 billion), the Netherlands ($1.2 billion), and West Germany ($859 million) were the major destinations, though not necessarily the final users. A large quantity of grain shipped to the Netherlands, for example, was unloaded and shipped to other countries. Appendix IV shows the values and quantities of grain shipments according to original destinations.

The largest volume of U.S. grain exports—about 60 percent of the national total—moves through Gulf port elevators. The following table summarizes, by area, the quantity of grain inspected for export from port elevators in fiscal year 1975, according to USDA data.

[Bushels in millions]

Area	Grain inspected for export in fiscal year 1975	
	Bushels	Percent
Gulf of Mexico	1,707	64.0
Atlantic coast	364	13.7
Pacific coast	361	13.5
Great Lakes [1]	234	8.8
Total	2,666	100.0

[1] Great Lake ports are closed during the winter.

Grain Inspection and Weighing System

Two Federal laws governing the management, marketing, and inspection of U.S. grain are the United States Grain Standards Act, as amended (7 U.S.C. 71), and the United States Warehouse Act, as amended (7 U.S.C. 241). These acts provide a uniform, nationwide system for inspecting, grading, weighing, and storing grain under the supervision of the Secretary of Agriculture.

Grain Standards Act Operations

Under authority of the Grain Standards Act, USDA's Agricultural Marketing Service (AMS) has established Federal (official) standards—numerical grades based on various quality factors—for wheat, corn, soybeans, sorghum, rye, oats, barley, flaxseed, and mixed grain. These standards facilitate mass trading in grain domestically and with other countries by enabling buyers and sellers to transact sales on the basis of the grain's grade rather than on personal observations.

Some of the quality factors are test weight per bushel, percent of damaged kernels, moisture content, and percent of foreign material. The standards for corn, for example, follow.

Grade	Minimum test weight per bushel (pounds)	Maximum limits of (percent)—			
		Moisture	Broken corn and foreign material	Damaged kernels	
				Total	Heat-damaged kernels
U.S. No. 1	56	14.0	2	3	0.1
U.S. No. 2	54	15.5	3	5	.2
U.S. No. 3	52	17.5	4	7	.5
U.S. No. 4	49	20.0	5	10	1.0
U.S. No. 5	46	23.0	7	15	3.0

Note: U.S. sample grade shall be corn which does not meet the requirements for any of the grades from U.S. No. 1 to U.S. No. 5, inclusive; or which contains stones; or which is musty, or sour, or heating; or which has any commercially objectionable foreign odor; or which is otherwise of distinctly low quality.

The Grain Standards Act also authorizes USDA to (1) license, and triennially relicense, qualified non-Federal individuals to carry out one or more of the official inspection functions, (2) review the licensees' work, and (3) resolve disputes about assigned grades. The inspection functions include:

—Examining the interior of the conveyance to be used for transporting the grain. This stowage examination is required for all export grain and for other lots of grain which are officially inspected at the time of loading.
—Obtaining one or more representative samples of the grain, depending on the size of the lot to be graded.
—Analyzing the sample through both objective and subjective tests and using the results as the basis for certifying the grade in accordance with official grain standards.
—Issuing the official inspection certificate showing the results of the inspection and the grain's type and grade.

There are about 815 licensed inspectors (individuals licensed to perform and certify the results of all inspection functions) and about 1,840 licensed samplers and technicians (individuals who, depending on the terms of their licenses, can take samples and/or perform laboratory tests needed to determine a grain's grade). Only a licensed inspector, however, can assign a grade or issue a certificate of grade and then only for the grains specified in his license.

The licensees are not USDA employees. They work for State departments of agriculture, trade groups, or privately owned grain inspection agencies designated by USDA to inspect grain at specific inspection points. In July 1975, there were 111 inspection agencies—23 State, 41 trade, and 47 private—designated to make inspections at 183 inspection points in the United States under the Grain Standards Act.[2] Of the 111 agencies, 26 inspected export shipments. Each agency is responsible for hiring, training, supervising, and directing the day-to-day work of its inspection personnel.

The agencies charge a fee for their services based on the quantities inspected. The fees must be nondiscriminatory and reasonable and cannot be used to pay for costs of any operation which is not related to official inspection.

AMS's Grain Division administers the Grain Standards Act through 32 field offices in the United States and 1 in Canada. When our review started, the Division had about 225 grain graders operating from its field offices. Under the Grain Standards Act, AMS graders review or supervise the licensees' work on an "as time permits" basis, conduct appeal inspections, and make initial inspections of some U.S. grain at Canadian ports. Fees for Federal inspection services are set by regulation.

Generally, grain is officially inspected at inland terminals and port elevators. The act provides that all grain shipped from the United States which is sold, offered for sale, or consigned for sale by grade must be inspected by a licensed inspector as it is loaded or while it is in the final carrier. Inspections are also required if grain is in a container—railcar, barge, truck, ship's hold, or other storage space or receptacle—which shows an official grade designation or an official inspection mark, or if the grain is represented to have been officially in-

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[2] Effective November 17, 1975, USDA canceled the designation of a private agency at the request of the agency's owner after AMS had sought action to revoke the designation for violations of the Grain Standards Act. On January 22, 1976, USDA filed a formal complaint seeking to revoke the designation of a State-commissioned agency.

spected. Inspections of other grain may be made at the request of any interested party. AMS estimated that about 3.4 million inspections were made in fiscal year 1975. Of these, about 6,000 involved export shipments.

According to USDA, grade standards and inspection and grading procedures were developed primarily to meet the needs of the grain industry, particularly the middleman, or grain merchandiser. Producers, in general, do not avail themselves of the inspection and grading service, and processors tend to supplement the service with their own tests.

WAREHOUSE ACT OPERATIONS

The Warehouse Act authorizes the Secretary of Agriculture to license, inspect, investigate, and otherwise regulate public storage warehouses, including grain elevators, that voluntarily apply for licenses and meet departmental standards. In June 1975, about 1,480 grain elevators were licensed under the act.

The act also provides for licensing persons to inspect, sample, classify, grade, or weigh grain stored or to be stored in a licensed elevator. The act, designed to protect grain depositors, authorizes issuance of warehouse receipts intended to be generally acceptable to bankers as loan collateral. The receipts are supported by inspection and weight certificates issued by warehouse graders and weighers licensed under the act. The licensed graders and weighers, of which there were about 7,600 at the time of our review, are usually employees of the licensed elevators but can be employees of a private agency. Their licenses enable them to perform duties only at specified licensed elevators. Their inspection certificates are valid for purposes of the Grain Standards Act only if they also hold grain inspectors' licenses under that act.

The Warehouse Act is administered by AMS's Transportation and Warehouse Division, but the daily operations of the warehouse graders and weighers are not supervised directly by AMS employees. Each licensed elevator, however, is examined about twice each year on an unannounced basis. The examiners, among other things, reconcile the elevator's inventory records to the quantity and quality of grain on hand.

CHAPTER 2

PROBLEMS WITH THE NATIONAL GRAIN INSPECTION SYSTEM

Many serious problems exist in the national grain inspection system. Although some inspection services have been satisfactory, the system has been operated through widely dispersed State and private agencies and trade associations without effective procedures, controls, or lines of authority. The system also has tolerated conflicts of interest between the grain inspection and grain merchandising operations and has not been responsive to USDA's limited supervision.

Weaknesses in control have led in recent years to extensive criminal abuses involving intentional misgrading of grain, shortweighing, and use of improperly inspected carriers. Disclosure of these matters in the world press and in congressional hearings has resulted in an erosion of confidence in the system, both domestically and internationally. Substantive remedial action will be needed to restore credibility and achieve the system's intended objectives, namely, the promotion of orderly grain marketing, the protection of buyers' and sellers' interests, and the building of confidence in the quality and consistency of U.S. grain in domestic and world markets.

In establishing the national grain inspection system, the Federal role was conceived as that of overall supervisor and appeal referee. Actual responsibility for day-to-day operation of the system in the form of grain sampling, grading, and inspecting and the issuance of inspection certificates attesting to the grade of grain was to be carried out by USDA-designated official inspection agencies. A skeletal force of Federal supervisors was to insure that the system functioned in accordance with requirements of the Grain Standards Act and implementing regulations, including the official U.S. grain standards.

Recent experience has shown that the inspection system can function only as well as the designated inspection agencies and the grain trade choose to make it function. Although increased Federal supervision, more severe penalties, and more intensive and extensive USDA investigations could contribute to more integrity in system operations, it is not feasible, in our opinion, to increase Federal supervision to a point where circumvention of the system by persons so inclined could be prevented.

The national inspection system requires a high level of consistency and uniformity in recruiting, training, and supervising inspection personnel; objectivity and the avoidance of conflicts of interest; a suitable rotation program and uniform standards of work production for in-

spectors; uniformity of controls and procedures, particularly in the case of grain sampling; uniformity, consistency, and accuracy in the grading process; and quick and thorough reviews and investigations of reported discrepancies and abuses.

Appropriate attention to these matters is made extremely difficult when, as in the existing system, there are over 100 separate agencies to be coordinated. Also, clear and effective lines of authority and responsibility are difficult to maintain, and work quality inevitably suffers in such circumstances.

A further shortcoming in the existing system is that USDA does not exercise control over the weighing of grain. Inspection and weighing of grain should be a coordinated operation, in our view, and both grading and weighing determinations should be shown on the inspection certificates.

The following sections discuss the problems involved in maintaining integrity in day-to-day inspection operations and the shortcomings of USDA supervision over those operations. The discussion focuses on—

—conflict-of-interest situations,
—grain sampling,
—grain weighing,
—grain grading,
—duplicative inspections,
—stowage examinations,
—inspection certificates issued at Great Lakes ports,
—personnel administration, and
—AMS administration and supervision.

We also discuss the Administration's recent proposal to strengthen the national grain inspection system.

Need To Tighten Restrictions on Conflict-of-Interest Situations

The Grain Standards Act and AMS regulations prohibit conflicts of interest on the part of grain inspection personnel, but conflicts on the part of grain merchandisers are either permitted or not specifically prohibited. Also tolerated are situations having the appearance of conflicts of interest. As a result, financial and other relationships between inspection agencies and those they deal with compromise or give the appearance of compromising the independence of the existing inspection system. Also USDA investigations and information provided by a grain company have disclosed numerous situations involving actual or apparent conflicts of interest.

The act prohibits official inspection personnel, including licensees and USDA employees, from having a direct or indirect financial interest in, being employed by, or accepting gratuities from any business entity which owns or operates a grain elevator or warehouse or which merchandises grain. AMS requires that inspection personnel certify that they have no conflicts of interest when they apply and reapply for a license. Further, AMS regulations prohibit an official inspection agency from owning or operating a grain elevator or warehouse and from engaging in the merchandising of grain or any other activ-

ity, either directly or indirectly, which would create a conflict-of-interest situation for its employees.

Neither the act nor the regulations, however, prohibit grain companies or their officers or employees from having a direct or indirect financial or other interest in an official inspection agency. Also, boards of trade and other groups in which grain companies hold memberships or influential positions can be designated as official inspection agencies. In such cases, conflicts of interest or the appearance of such conflicts are inherent and inevitable.

According to AMS officials, AMS had never tried to prohibit such arrangements because the legislative history of the Grain Standards Act cleary showed that the Congress wanted to maintain private agencies in the inspection system. Our review of the legislative history tended to confirm this view. (See app. V.) Because such situations are permitted to exist, individuals holding responsible positions in grain companies have acted as directors or committee members in the agencies which make inspections for the same grain companies. Some examples follow:

—Four of the seven members of a private inspection agency's board of directors were officials of grain companies, three of which were served by the inspection agency. The grain companies also owned shares of stock in the agency. The board appointed the agency's general manager and chief inspector and set the fees to be charged.

—Six of the seven members of a board of trade's inspection committee, which set inspection fees, approved hiring, and handled labor negotiations for the board's inspection agency, were officials or employees of grain firms served by the agency.

—Seven grain firms were members of a grain exchange which was designated as an inspection agency. The agency served all seven firms. Officials of five of these firms served as directors of the agency and appointed the agency's chief inspector.

USDA's Office of Investigation, which lcoked into possible conflict-of-interest situations, advised us in December 1975 that its investigations, although still in various stages of reporting or legal review, had disclosed situations similar to those noted above as well as the following kinds of conditions.

—Three inspection agencies were organized with the assistance of loans of $10,000 to $30,000 from grain companies for whom inspections were to be conducted.

—Officers or employees of four inspection agencies received annual bonuses of $500 to $6,000, supplementing regular salaries and, in some instances, overtime compensation.

—Expenditures by inspection agencies included entertainment and gratuities for grain company personnel and USDA employees, and some payments were related to actual inspection functions.

Also, a grain company disclosed to USDA and the Department of Justice that inspection agency personnel or USDA employees providing inspection services had been given gratuities, including cash, liquor, meals, tickets to sporting events, and office parties. It also said its

personnel had purchased from an inspection agency grain which had been drawn for sampling purposes and the proceeds had been divided among inspection agency personnel. Over a 10-year period, 17,743 bushels of grain were purchased for $47,523.

In effect, the grain company was buying back grain which, according to AMS regulations, belonged to the company.

To be effective, an inspection system must avoid any appearance of situations that compromise its independence. Under a system which tolerates actual or potential conflict-of-interest situations, there can be little confidence in the independence and credibility of those charged with inspection responsibilities. According to a United States Attorney, who testified during recent hearings on grain inspection irregularities and problems.

> The fault * * * throughout the system * * * is in the intimate relationship, the mutuality of interests, that has developed between the elevator companies and the inspection agencies, where the personnel of the inspection agencies, in effect, feel that they are servicing the elevator. We have yet to see any real recognition in the private inspection agency personnel that their loyality is to the United States of America. They don't realize that they are performing a very sensitive and important governmental function, that is, to make official inspections. This is a sad thing, a tragic thing.
>
> It has never been brought home to them. In fact, they seem, many of them, this is not true of all, but many of them seem to feel that their loyalty is to the elevator. Many of them show a downright open hostility toward the U.S. Department of Agriculture.

Improvements Needed in Obtaining and Preserving Representative Samples

Drawing a representative sample from a lot for grading and making sure that it is not switched or tampered with are essential to insuring that the grade assigned accurately describes the sampled lot. Also, because the number of samples to be drawn depends on the lot size, it is important that the sampler be aware of all quantities loaded.

Under the present inspection system, maintaining effective control over the taking and handling of samples is difficult. AMS must rely largely on the integrity of licensed personnel and elevator management to execute sampling procedures properly. As discussed beginning on page 18, conditions at nearly every location we visited compromised the integrity of the sampling operations. In some cases, deceptive practices had occurred without the knowledge of licensed inspectors or AMS supervisors.

SAMPLING PROCEDURES AND DEVICES

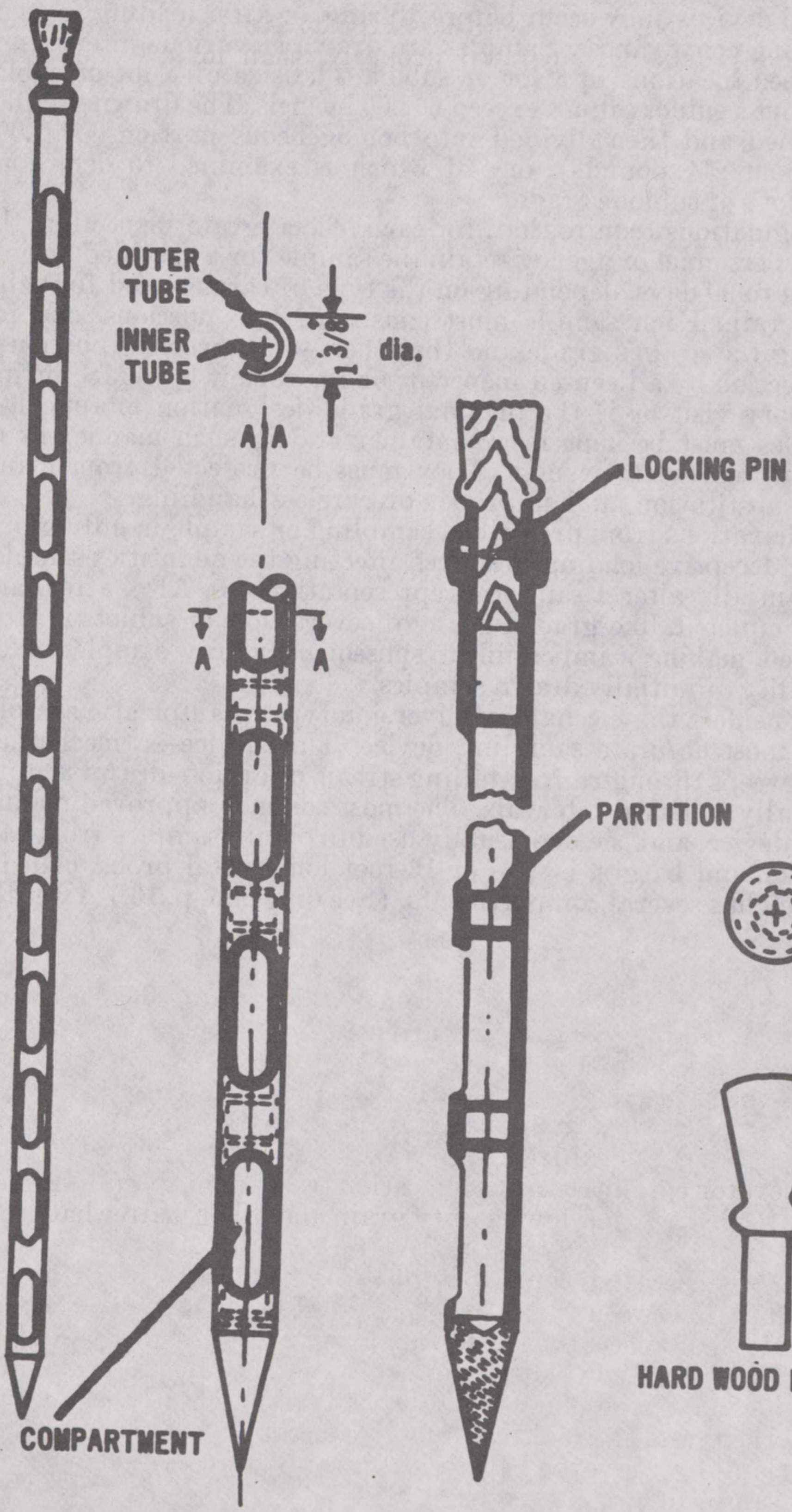
Sampling, which may be done either manually or by automatic mechanical devices, may occur before, during, or after loading from or into shipping conveyances. Samples are drawn at various intervals or at prescribed locations in a lot or sublot. The size of a lot or sublot may vary but a sublot cannot exceed 60,000 bushels. The drawn samples are combined and then divided into homogeneous portions of 1,000 grams (about 2¼ pounds), one of which is examined to determine the entire lot's or sublot's grade.

AMS regulations require that, for each official grain inspection, the inspection personnel or agency retain the sample for a specified period, generally 4 to 90 days, depending on the type of carrier used for shipping the grain. Each sample must consist of two portions, one for designating the grain's grade and the other—an unworked portion—for reinspection by a licensed inspector or for review by AMS during a supervisory visit or if the original grade designation is appealed. The samples must be kept in a container and in such manner as to retain their representativeness. They must be protected from manipulation, substitution, and improper or careless handling.

Minor deviations from prescribed sampling or sample-handling procedures or deceptive loading practices affecting the quantities sampled can substantially alter a sample's representativeness. Also, after sampling is completed, like-graded grain of several lots or sublots is often commingled, making it impossible to subsequently draw samples to test the reliability of initially drawn samples.

AMS considers the mechanical diversion type of automatic sampler to be the most accurate sampling device. This device—a mechanical arm that sweeps through a free-falling stream of grain—draws samples automatically at timed intervals. The most common approved manual sampling device, and the one usually used to obtain samples from railcars, trucks, and barges, is a 6- or 12-foot long metal probe, called a trier, which has several compartments. (See diagram, p. 16.) After the

SIX-FOOT, 12-COMPARTMENT GRAIN TRIER



trier is inserted into the grain being sampled, the compartments are opened and then closed to obtain grain from varying levels.

The use of automatic mechanical sampling devices has increased over recent years because they are both less expensive to operate and more accurate and reliable, if operated properly, than manual sampling methods. Manual samplers are often used, however, to sample incoming rail, truck, or barge shipments because the results can be obtained before unloading and can be used in deciding where the grain will be stored.

SAMPLING OR LOADING PRACTICES AFFECTING INTEGRITY OF SAMPLES

The following examples illustrate weaknesses or deceptive practices that we and others have observed in sampling or loading operations.

—Controls of automatic sampling devices were sometimes accessible to elevator personnel who could easily adjust them without attracting the sampler's attention. If the elevator management desired to produce grades higher than the actual quality of grain sampled, the automatic sampling devices could be adjusted to operate either slower when poor-quality grain was being sampled or faster when good-quality grain was being sampled. The samples drawn, therefore, would not be representative of the lot sampled. At a few locations, the inspectors placed sampling device controls under seals to prevent access to them by elevator personnel.

—Elevator personnel could adjust the speed of the conveyor belt from which samples were drawn to obtain results similar to those obtained by adjusting the frequency of the sampling device.

—At several locations, devices existed so that grain, which was to be loaded aboard vessels after sampling, instead could be diverted and returned to storage bins. Such diversions would not have been within the inspector's view and would have resulted in the quantities of grain loaded being misrepresented. According to AMS officials, AMS is considering requiring that automatic sampling devices be placed as close as possible to the end of the conveyor belts used to load vessels.

—Remote control devices were installed which allowed the drawing of biased samples or the circumventing of acceptable sampling practices. For example, at one location an electrical device permitted the infusion of foreign material or low-quality grain on a conveyor belt timed at intervals so as to avoid sampling by the automatic sampler which functioned at 27-second intervals. Several elevator employees at this location were indicted and pleaded guilty to charges that low-quality grain and other matter had been loaded in the bin closest to the diverter sampler and that the discharge of material from that bin had been timed to pass through the sampler between the taking of samples. At the instruction of the AMS field office, the inspection agency has assigned a man to inspect the conveyor belts periodically, to help insure that grain is not loaded in a manner which prevents representative sampling.

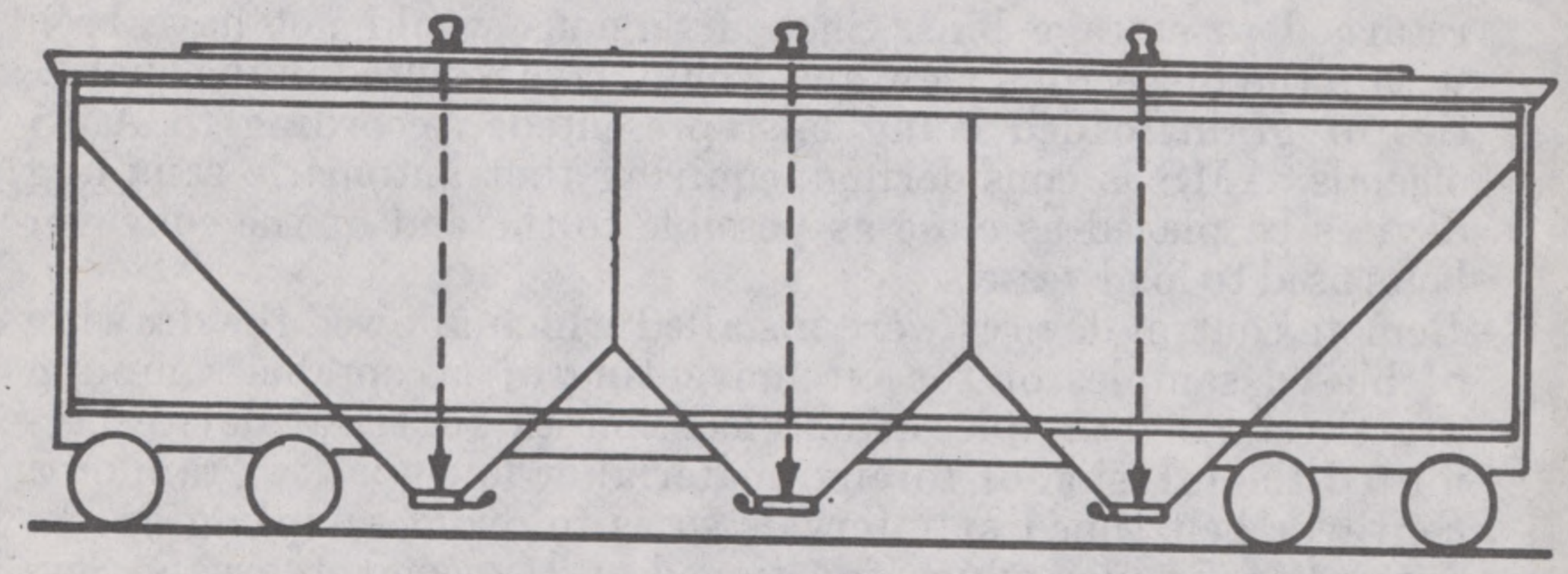
—In another case, an electrical remote control switch permitted the operation of a conveyor belt to load grain aboard vessels without being sampled.

—Elevators commonly used two or more conveyor belts to load export vessels. Separate samples were drawn from each belt and were combined into one composite sample used to determine the official grade. The belts, however, could be emptied either in the same vessel hold or in separate holds. If emptied into separate holds, one or more holds could be filled with grain of a lower quality that that of the composite sample. This situation would be particularly harmful to a buyer who received grain exclusively from the hold or holds containing the lower quality grain.

—Some river barges, with hold depths of about 15 feet, could be fully loaded by the shipper before being offered for inspection. Because a 12-foot probe was used to draw the official samples, it was not possible to sample the bottom 3-foot layer and, because inspectors generally were not present during loading, there was no assurance that the bottom layer was of the same quality as the rest of the lot. Although AMS regulations provide that certificates be annotated to show that the bottom was not sampled, this situation presents the opportunity for deceptive loading.

—AMS has prescribed the 12-foot probe as the manual sampling method for all hopper-type railcars. In transit, grain—especially soybeans—could become compacted at the bottom of the hopper. Inserting a 12-foot probe into the compacted grain requires extensive strength and effort and samplers often cannot reach the bottom layer. Also, on two occasions we observed inspection agency samplers using 6-foot, rather than the required 12-foot, probes.

—The physical structure of the hopper-type railcar and the prescribed probing pattern prohibits the drawing of a representative sample, as illustrated by the following diagram.



As the diagram illustrates, the samples are drawn evenly from top to bottom although the upper part of each compartment, or bay, holds more grain than the lower part. Thus, there is no assurance that a representative sample will be drawn. Also, the opportunity exists to bias samples by deceptively loading higher quality grain in the bottom parts and lower quality grain in the upper parts of the compartments.

—AMS prescribes that probe samples be drawn from boxcars according to predetermined, rather than random, patterns. Because a shipper may be aware of the patterns, it is possible to deceptively load a car, resulting in a biased sample. Also, by loading the boxcar unevenly or otherwise not leveling the load, a shipper can

impede and discourage proper sampling. A shipper will usually be requested to level the load but, if he refuses, the sampler usually tries to draw the best sample possible under the circumstances.

—Some working conditions can also impede proper sampling of boxcars. On hot or humid days, extremely high temperatures inside incoming boxcars, which arrive sealed, are common. In addition, railcars may be moved while the samplers are on or in them. This is extremely dangerous and could result in serious injury to the samplers. Given these difficult working conditions, samplers may be inclined to compromise prescribed sampling procedures.

Other ways in which manually drawn samples can be biased follow:

—Simultaneous use of two or more loading spouts up to several hundred feet apart is common. The sampler is required to sample all spouts, usually in 5-minute intervals. Elevator personnel are able to observe the sampler at all times, providing an opportunity to load lower quality grain from the unattended spouts.

—The sampler relies on sense of timing to secure representative samples from each spout. The samples are combined in equal portions into a composite sample for all spouts. By varying the flow of grain through the spouts, the elevator can influence the representativeness of the composite sample.

WEAKNESSES IN HANDLING SAMPLES

Controls and practices used in handling and preserving samples while awaiting inspection also were sometimes inadequate.

—Manually drawn samples were sometimes left unattended or were otherwise subject to inadequate security. For example, at one location, the sampler left samples unattended in the waiting area of the truckers delivering the grain.

—In some cases, sample inspection or storage rooms were left open and unattended during lunch periods and after close of business. In other cases, elevator personnel who retained keys for emergencies had access to samples and inspection equipment after close of business.

—Although some elevators had equipment, such as pneumatic tubes, to automatically transfer drawn samples to the inspection rooms, at others hand-carried containers were used to transport samples. In one case, badly worn equipment resulted in a potential loss of sample representativeness. Also, some containers had holes large enough to allow leakage of foreign particles.

AMS SUPERVISION OF SAMPLING

AMS's most common method of supervising sampling operations is called "over-the-shoulder" supervision. Its main objective is to evaluate through observation the competency of the licensed inspectors or samplers. The observations should be random, frequent, and unannounced. Past supervisions, however, covered only a small percentage of sampling operations, and licensed personnel and elevator management generally were aware when they were being observed. For example, some elevator managers ordered AMS supervisors to provide

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notice of their visits, and at some locations, AMS supervisors wore bright orange coveralls and helmets and were easily recognized.

Maintaining the supervisors' anonymity during sampling operations therefore was not highly effective, and AMS supervisors generally did not otherwise provide for effective supervision of prescribed sampling and sample-handling practices. AMS officials told us that efforts to prevent deceptive practices through increased or tighter supervision were usually countered by new deceptive practices or variations of them. The officials said that they cannot achieve a high degree of reliability in sampling operations through the existing level of supervision and that supervisory control would not be effective unless it were on a 100-percent basis.

To prevent elevator personnel from being able to interfere with sampling, better controls are needed over the movement of grain into, within, and from elevators; the operations of sampling equipment; and the weighing operations. Increased use of automatic, rather than manual, sampling methods and of devices to automatically transfer drawn samples would provide more accurate sampling and better control against tampering with samples.

AMS officials told us that AMS had advised export elevators that by May 1, 1976, all grain being loaded for export is to be sampled only with automatic diverter sampling devices. They also said long-range plans are to expand the use of diverter samplers to all official sampling operations.

Need to Strengthen Controls and Supervision Over Grain Weighing

The Grain Standards Act does not authorize AMS to supervise, or inspection agency personnel to control, grain weighing nor does it provide that grain weighing be coordinated with sampling. In preparing official grading certificates, the inspectors generally must accept weights furnished by elevator operators to describe the quantities of grain inspected. The inspectors have no means of independently verifying these amounts. Lacking control over weighing, the inspectors cannot be sure that all quantities are sampled.

Also, because weighing is not effectively controlled or supervised, those in the domestic grain industry who must market commodities on the basis of destination weights and foreign buyers who must purchase grain on the basis of weights loaded aboard vessels have not been reasonably assured that the weights assigned are correct. Our interviews with foreign grain buyers and responses from country elevator operators indicated widespread dissatisfaction with the weights assigned to grain shipments. Recent Federal investigations have disclosed many cases of improper weighing.

Under the U.S. Warehouse Act, AMS's Transportation and Warehouse Division licenses persons to weigh inbound and outbound grain at grain elevators which are voluntarily licensed and regulated under the act. About 17 percent of U.S. grain elevators, representing about 40 percent of the commercial grain elevator space in this country, are licensed. The weighers, who are licensed after being tested for basic competency in weighing, are usually elevator employees but can be

employees of independent agencies, including those designated as inspection agencies under the Grain Standards Act. The Transportation and Warehouse Division examines each elevator's inventory records about twice a year on the average, but it does not control or supervise the weighers' operations.

Although there is no Federal control or supervision of weighing, some non-Federal supervision is provided at some terminal centers under an independent system established by the Association of American Railroads, to insure accurate weights. A terminal center may include one or more elevators. The supervision is generally provided by a State or private agency which, in many cases, is the inspection agency designated for the area under the Grain Standards Act. The independent supervisors observe the operation of scales, test shipping or transfer conveyances for leaks, and checktest conveyances and scales to see that they are completely empty after each transaction.

The extent of such supervision is based generally on which classification is selected by the elevators in a terminal center. Such selection is subject to approval by the Association. Terminal centers may be designated as class 1, which specifies 100-percent supervision; class 2, which specifies supervision of a representative number, usually at least 25 percent, of the weighings; or class 3, which specifies little or no supervision. The number of terminal centers in each classification as of January 1975 follows.

Terminal center	Class 1		Class 2		Class 3	Total
	State agency	Private agency	State agency	Private agency	Private agency	
Export	9	3	2	26	1	41
Inland	44	5	5	183	1	238
Total	53	8	7	209	2	279

The supervision provided under this system, however, was not always sufficient to make sure that all grain was properly weighed and that representative samples were obtained for inspection. For example:

—Only one individual was usually available at each class 2 elevator. His responsibilities included weight supervision of both incoming and outgoing shipments and inspection of arriving railcars and various grain movement operations through elevator facilities.

—The supervisors could not control the physical movement of grain in the elevators well enough to insure that all incoming grain was weighed or that all outgoing grain, once weighed, was loaded aboard the appointed conveyance. Some elevators had bypass ductwork or movable ductwork, sometimes remotely controlled, which allowed elevator personnel to shortweigh without detection by the independent supervisors.

—Most scales at terminal elevators provided either a printed scale ticket or, in the case of newer electronic scales, a printout for each weighing. During the supervisors' absence, various means were possible for manipulating scale calibrations. Scale components were sometimes left unsealed, and facsimiles of scale printouts showing erroneous weights could be easily prepared.

Recent USDA and FBI investigations have disclosed that grain was shortweighed at some ports where weighing was independently supervised. This was done by such means as

—manipulating scales immediately before loading to cause them to register incorrect weights;

—representing that grain had been removed from storage bins, weighed, and loaded aboard ship when, in fact, the grain had been diverted back to the storage bins; and

—manually altering the official weight tape to indicate weights of grain which was not loaded.

In one case, the investigations disclosed that it was company policy to shortweigh outbound ships as they were loaded. Also, at one elevator, 100 pounds was frequently deducted in weighing the contents of arriving railcars. From August 1974 through December 1975, 21 individuals pleaded or were found guilty of improper weighing operations.

Other information we obtained indicated that weighing irregularities may be even more widespread. Many foreign buyers we interviewed alleged that weights of U.S. grain shipments were regularly lower than the weights they paid for. Some indicated an inclination to buy grain elsewhere because of distrust in the accuracy of the weight of U.S. grain. Several furnished data on alleged shortages. (See ch. 3.)

When we asked country elevator operators from four States—Illinois, Iowa, Kansas, and North Dakota—about selling grain on the basis of weight and grade determined at destination, 339, or 41 percent, of the 829 who responded indicated they were dissatisfied with weights and grades assigned at shipping destinations. Of these, 156 operators specifically identified dissatisfaction with assigned weights. Further, many country elevators have indicated an unwillingness to market grain at certain locations where they suspect their grain is erroneously weighed.

Some analyses have indicated that weights at destinations frequently are less than the shippers' weights. For example, the following analyses, based on data provided by terminal elevators, show differences between origin and destination weights for 514 barge shipments of grain to a Gulf port in April and May 1975 and for 242 rail shipments of wheat to several inland and Gulf port locations during July and August 1975.

Differences	Number of shipments for which	
	Origin exceeded destination weight	Destination exceeded origin weight
Barge:		
1 percent or less	217	102
More than 1 percent	148	47
Total	365	149
Rail:		
1 percent or less	155	64
More than 1 percent	19	4
Total	174	68

Differences between origin and destination weights generally can be explained by such factors as minor scale imperfections; loss in transit,

such as thefts or leaking railcar doors; failure to fully unload and weigh grain from railcars; inadvertent errors in balancing or reading scales; or deliberate shortweighing. Minor differences are usually disregarded by the parties involved. However, differences often involve quantities that cannot be explained or easily disregarded. In the cases analyzed above, many of the individual weight differences were nominal; collectively, however, the net of shortages over overages during these 2-month periods totaled nearly 200,000 bushels.

To effectively control grain inspections and to enhance the marketability of grain both domestically and abroad, control and supervision of grain weighing should, in our opinion, be coordinated with the responsibility for inspecting grain. USDA officials agreed with the need for such coordination at port elevators.

Need for Improved Uniformity and Accuracy in Grain Grading

Improvements are needed in the accuracy and uniformity of grades assigned to sampled grain. In regarding samples previously graded by licensed inspectors during fiscal year 1975, AMS supervisors found incorrect grades on the average of between 10 and 20 percent of the time and, at some locations, ranging to over 30 percent of the time. For those people, including country elevator operators and foreign buyers, who must rely on grades as a basis for settling large-dollar-value transactions, this rate of inaccuracy does not offer a reasonable degree of reliability.

Grading grain requires close scrutiny of individual grain kernels and delicate judgments by inspectors of the kernels' characteristics and the extent of any defects. A difference of a small fraction of a percent in any factor can affect the accuracy of the numerical grade and therefore the value of a specific lot. Attaining a high degree of accuracy and uniformity in grading depends somewhat on refining grain standards and improving grading technology. Progress on these matters, which are discussed in chapter 4, has been slow. Until refinements enable quality to be measured through mechanical or more scientific methods, improving the inspectors' capability to uniformly recognize and describe quality characteristics is essential.

AMS supervisors evaluate the licensed inspectors' grading work when making appeal inspections or during supervisory visits. The evaluations may involve regrading samples drawn by licensed personnel or grading new samples independently drawn by the AMS supervisors.

During fiscal year 1975, AMS supervisors' appeal inspections showed that about 20 percent of the grades determined by the licensed inspectors were incorrect. During supervisory evaluations, the AMS supervisors found an error rate of about 10 percent. Error rates on appeal inspections generally tend to be higher because, in many cases, the initial results are borderline and the requestor may suspect an error. The error rates found during supervisory evaluations, however, may be lower because licensed inspectors sometimes select the samples to be regraded and thus have an opportunity to select those they believe to be free of errors.

As shown in the following table, error rates in some AMS field office circuits were extremely high.

	Error rates found during appeal inspections (note 1)			Error rates found during supervision (note 2)		
	Evaluated by AMS	Found incorrect	Error rate (percent)	Evaluated by AMS	Found incorrect	Error rate (percent)
Beaumont, Tex	234	34	15	916	67	7
Des Moines, Iowa	304	70	23	1,731	295	17
Duluth, Minn	5,255	1,784	34	757	79	10
Grand Forks, N. Dak	23	7	30	373	90	24
Houston, Tex	1,439	143	10	2,009	167	8
Minneapolis, Minn	2,304	791	34	331	49	15
New Orleans, La	2,174	556	26	3,085	329	11
Peoria, Ill	801	149	19	194	29	15
Philadelphia, Pa	53	2	4	1,076	67	6
Portland, Oreg	352	80	23	(3)	(3)	(3)
Seattle, Wash	50	14	28	3,813	112	3
St. Louis, Mo	686	119	17	(3)	(3)	(3)

1 Data obtained for all appeal inspections during fiscal year 1975.
2 Data obtained for all or a representative portion of supervisory evaluations in fiscal year 1975.
3 Data not obtained.

During fiscal year 1975, AMS regraded grain covered by about 90,000 official certificates issued by licensed inspectors, including about 29,500 appeal inspections. These reviews represented about 2.6 percent of the estimated 3.4 million total inspections. Much more supervisory regrading by AMS would seem to have been warranted, particularly in view of the high error rates. In contrast, Canadian officials told us that, under their grain inspection system (see app. VI for a brief description), about one of every six samples, or about 17 percent, is supervised. Moreover, this supervision occurs immediately after the original grading. Two advantages of this system are that (1) differences can be immediately called to the original grader's attention so that he can reexamine his own work and thus minimize similar errors in the future and (2) the error can be corrected before the inspection certificate is prepared and released.

The latter advantage is particularly important. AMS supervisors generally regrade samples or lots several days after the initial inspections, when the inspection certificates have already been released. For each appeal inspection, AMS issues a new certificate which supersedes the original certificate. In other cases, however, certificates which inspection agencies have released are not corrected if AMS discovers errors. The Grain Standards Act, which limits to licensed inspectors the authority to make original inspections within the United States, precludes AMS from correcting original certificates prepared by licensed inspectors except in the case of appeals.

Because not all AMS-discovered errors have been corrected, thousands of settlements may have been made on the basis of erroneous official grades. Following are a few examples of uncorrected original certificates for wheat.

Location	Quantity (bushels)	Grade No.		Shipment type
		Certificate	Determined by AMS	
Channelview, Tex	488,266	2	3	Export vessel.
Do	60,000	2	(1)	Do.
Corpus Christi, Tex	120,000	2	3	Do.
Superior, Wis	200,000	2	3	Do.
Minneapolis, Minn	50,770	2	3	Outbound barge.
Duluth, Minn	1,467	3	1	Inbound rail.
Portland, Oreg	3,000	4	2	Do.

1 Sample grade.

Grain merchandisers are often critical of the lack of grading uniformity among inspection agencies. Considering that large volumes of grain may be purchased and sold at different locations where different agencies are responsible for grading, the merchandisers' concern for uniform grading practices is apparent.

AMS generally did not use available data for comparing grading results of various inspection agencies, although such comparisons would have been useful in identifying dissimilar grading practices. Some grain merchandisers' analyses, such as the following analyses of rail and barge shipments of grain from various Midwest locations to various Gulf port elevators, have shown a high variation rate.

	Rail shipments	Barge shipments
Number analyzed	101	519
Comparison of numerical grades assigned by origin and destination agencies:		
Number agreed	40	252
Number disagreed	61	267
Origin grades higher	29	253
Destination grades higher	32	14
Grading factor(s) differing:		
Test weight or moisture	1	10
Damaged kernel	11	34
Broken corn and/or foreign material	49	228

The cause or causes of the above variations were not identified; they could, however, be attributable to any of several possibilities.

—Variations in sampling methods.

—Deterioration of grain during loading or unloading or while in transit. (Such deterioration is common, particularly for overdry corn, as discussed in ch. IV.)

—Bias by licensed inspector at either origin or destination.

—Variations in grading methods or interpretations of standards.

Because of the various possibilities and the difficulty in ascribing variations to any particular cause, analyses such as those above are relatively inconclusive. To grain merchandisers, however, frequent grading variations and the uncertainty about their causes present a considerable concern. Country elevator operators have also expressed such concern. As discussed in the preceding section, 41 percent of the respondent to a mail survey of operators in four States indicated dissatisfaction with the destination weights and grades their grain received.

Until accuracy is substantially improved, additional supervision should be provided, particularly where high error rates have been found. AMS supervision would have been more effective if done on an unannounced and random basis and if inspectors had not been allowed to select the samples or lots to be regraded. Regrading should be done as soon after the original grading as possible so that inspectors can correct any errors before certificates are released.

In October 1975, the Congress appropriated $5 million for AMS to hire additional supervisory personnel. (See p. 33.) When hired and trained, these additional personnel should enable AMS to substantially increase its supervisory activities.

Duplicative Inspections Under Present System

Under the present two-level inspection system, individual lots of grain are often inspected several times. In some cases, the inspections

are made concurrently, so all sampling and grading procedures are duplicated. Also, superseded inspection certificates from preceding inspections are not always recovered.

Under the act and AMS regulations, an interested person may request

—an original inspection at either or both origin and destination;
—one or more succeeding original inspections when a later or more current inspection of the same scope as the preceding original inspection is desired in the same designated inspection area on the same lot of grain;
—a reinspection on any original or succeeding original inspection;
—an appeal inspection on any original inspection, succeeding original inspection, or reinspection; or
—a review of an appeal inspection by the AMS Grain Division's Board of Appeals and Review.

Original inspections, succeeding original inspections, and reinspections are made by licensed inspectors or, in the case of U.S. grain in Canadian ports, by AMS inspectors. Appeal inspections are made by AMS supervisors or, in the case of U.S. grain in Canadian ports, by the Board of Appeals and Review.

The opportunity to request that inspections be repeated is intended to protect the parties to a transaction. Under the present inspection system, where there is much concern about the accuracy of licensed inspectors' determinations, such an opportunity is warranted. Frequently, however, exercise of these options causes duplication and inefficiency.

AMS records showed that licensed inspectors made about 18,000 reinspections and that AMS made about 29,500 appeal inspections in fiscal year 1975. The records did not show, however, the number of succeeding original inspections or the number of inspections that may have been repeated on individual grain lots.

Our analysis of individual inspection certificates disclosed some examples of repetitive inspections on individual lots. For example, a barge containing about 56,000 bushels of wheat was inspected at one location 10 times over a 7-day period—5 times by a licensed inspector and 5 times by an AMS supervisor. Each original and appeal inspection series was requested by the seller and, except for the last, showed that the grain contained an excessive quantity of garlic bulbs, an undesirable quality for which price discounts apply. In this case and in others we noted, it seemed obvious that multiple inspections were requested in the hope that one would eventually yield the desired results.

In some cases, grain buyers routinely requested reinspections or appeal inspections on each shipment. Such requests generally must show the reason for the request stated in terms of the factor or factors in question. If filed in advance, however, the reason need not be shown.

When a request for an appeal inspection is filed in advance, AMS generally makes its inspection concurrent with the original inspection. In this case the AMS inspector must duplicate all sampling and grading procedures of the licensed inspector. Although the licensed inspector's results are always superseded by those of the AMS inspector, the licensed inspector must inspect the grain because the Grain Standards

Act does not authorize AMS to make original inspections, except at Canadian ports.

The official certificate for each succeeding original inspection, reinspection, and appeal inspection supersedes the certificate from the preceding inspection. AMS regulations provide that certain precautions be taken to prevent fraudulent or unauthorized use of a superseded certificate. Generally, the original certificate is to be surrendered and marked "Void" before a new one is issued.

At one AMS field office, however, records available on 102 cases in which new certifications had been issued after appeal inspections on barge shipments from March 27 through July 25, 1975, showed that none of the original certificates had been surrendered. At another field office, a selection of 98 appeal certificates issued in fiscal year 1975 on truck and rail shipments showed that, in nearly half the cases, the original certificates had not been surrendered

Although we did not observe any misuse of superseded certificates, the requirement that precautions be taken to prevent their fraudulent or unauthorized use does not seem to have been effectively followed at these field offices. Field office personnel said that they had no procedures to follow up on superseded certificates that were not surrendered and that they often encountered problems in trying to locate holders of superseded certificates.

Some provision for repeat inspections is necessary, particularly when, as under the present two-level inspection system, there is much concern about the accuracy and reliability of initial grading determinations. However, allowing an unlimited number of repeat inspections, making concurrent inspections, and not requiring that a specific reason be given for each request for a repeat inspection seem unreasonable. Each request increases the workload of either or both licensed inspectors and AMS supervisors. Improving the accuracy and reliability of initial inspections could provide increased confidence in their results and reduce the number of requests for repeat inspections. Also, the provision that superseded certificates be surrendered when repeat inspections are requested needs more stringent enforcement.

Problems With Stowage Examinations

No matter how clean grain may be when loaded abroad a vessel, it can become contaminated or deteriorate in quality if the storage space is wet, dirty, or insect or vermin infested or contains residues from previous cargoes, such as petroleum or toxic materials. Examinations by licensed personnel of the suitability of stowage space on vessels to receive grain for export have sometimes been deficient. In some cases, licensed personnel have been bribed to falsely certify to the condition of stowage spaces. In other cases, licensed personnel have been negligent in carrying out their responsibilities.

AMS did not issue written instructions to provide for uniformity in making stowage examinations until July 1975. Its supervision of stowage examinations in some locations has not been as extensive as error rates seem to warrant.

To lessen the potential for contaminated grain, AMS regulations require stowage examinations for export grain and other lots of grain which are inspected at the time of loading into a conveyance. Licensed

personnel are to visually examine the identified stowage space or other container that will be used for the grain. The examination is made to detect the presence of insects, vermin, moisture, foreign material, loose rust, residue from a previous cargo, commercially objectionable odor, or other conditions that could contaminate the grain or lower its quality. A certificate stating that the stowage space has been examined and found to be ready for loading is to be issued only after all deficiencies have been corrected.

The inspections usually can be made quickly and do not interfere with loading operations unless deficiencies are found. Corrections of deficiencies can sometimes delay loading for several days, and the cost of the delay plus the cost of fumigating or cleaning to correct the deficiencies is usually high. In some cases, bribes have been offered to try to avoid such delays. As a result of investigations at Gulf ports during 1974 and 1975, six licensed personnel were found guilty of or pleaded guilty to charges of falsely certifying to stowage conditions. The charges included accepting bribes ranging up to $3,500 each from ships' officers or agents. Two individuals and one firm were found guilty of bribery.

AMS supervision of stowage examinations in some field office circuits has not been as extensive as conditions seem to warrant. In the Houston field office circuit, only 71 of 1,173 stowage examinations were supervised during fiscal year 1975 although in 7, or 10 percent, of the 71 cases the supervisors found that the ships' stowage spaces were not ready to receive grain as had been certified. No official corrective actions were taken in these cases. According to a field office official, the inspection agency's chief inspector normally is notified that his inspector has passed an unfit ship and the inspector is advised to be more careful in the future.

At some locations, we accompanied AMS supervisors during supervisions of stowage examinations. One supervisor on August 4, 1975, found rust and live insects in five of the six holds of a ship waiting to be loaded with grain. A licensed inspector's prior examinations of the ship's holds on July 24 and of one hold earlier on August 4, had failed to disclose these conditions. Several days elapsed while the holds were repeatedly fumigated—six times in the case of one hold—to destroy the insects. The AMS supervisor concluded that the inspector had been negligent and issued him a corrective action report, an administrative action prescribed for less serious irregularities. (See p. 36.)

Although AMS regulations implementing the 1968 amendments to the Grain Standards Act require that stowage examinations be made by official inspection personnel, it was not until November 1974 that AMS required inspectors to satisfactorily pass examinations for competency and to be specifically licensed to make stowage examinations. Also, AMS did not issue written instructions on stowage examination procedures and standards of cleanliness until July 1975. This pointed out that, without formalized instructions, then-existing procedures were causing confusion and nonuniformity in stowage examinations.

The new instructions, however, are somewhat general about such matters as inspection agency and AMS field office responsibilities, performance requirements, and supervision of inspectors, and have not eliminated all confusion and nonuniformity. For example:

—Although the instructions provide that stowage examinations apply to water-borne vessels, the examinations of lake vessels at Great Lakes inspection points consisted of deck-level observations of the holds rather than the more comprehensive in-hold inspections given oceangoing vessels.
—The instructions do not cover ships loaded at Canadian transfer elevators (see next section) or oceangoing vessels which are partially loaded at a Great Lakes port and then fully loaded at a Canadian transfer elevator.
—Although the instructions indicate that AMS supervisory and appeal stowage examinations are generally to be made on a follow-up basis, AMS supervisors at one field office always accompanied the licensed inspectors when supervising or making appeal examinations. At another office, some appeal examinations were made before the licensed inspectors made their examinations. In one case, the licensed inspector used the results of the appeal inspection as his own.
—The instructions do not adequately set forth the physical qualifications or minimum training needed for making stowage examinations or describe what administrative or other action should be taken when a licensed inspector has improperly certified to stowage conditions.

The instructions need to be revised to eliminate confusion and provide increased uniformity in making stowage examinations.

Questionable Use of Official Inspection Certificates From Great Lakes Ports

Although the Grain Standards Act requires that all grain sold for export by grade be officially inspected, this requirement is not effectively observed for U.S. grain which is inspected and loaded into lake vessels at Great Lakes ports and then is unloaded and stored in Canadian transfer elevators before being reloaded aboard oceangoing vessels for export. Under the act, AMS is authorized to provide any or all inspection services at the transfer elevators but such services must be requested. Unless requested by the exporter or foreign buyer, the transshipped grain is not regraded when it is reloaded for export and is delivered under the original inspection certificate, known as a western grade certificate.

The certificate shows the date and place of inspection and the name of the lake vessel into which the grain was originally loaded and states that it "may not represent the grade, quality, or condition at a subsequent date or place." It does not, however, otherwise indicate that the grain was transshipped. According to one exporter, grain sold on the basis of western grade certificates is usually sold at a discount.

According to an AMS official, western grades may be used for transshipments if the identity of the grain has been preserved in the transfer elevator. In many cases, however, such grain is commingled at the transfer elevator or in the export vessel with grain from other lots and loses its identity. Some samples of transshipped grain, inspected at our request, showed that the grain was of a much lower quality than the original certificates showed. Although transshipped grain may sell at a discount, we question the appropriateness of

using a certificate showing official inspection results which may no longer apply.

We asked an AMS inspector to grade four samples from two elevators. The samples represented about 3 million bushels of transshipped corn, which the western grade certificates showed as number 3 grade corn. The samples had been drawn at the request of the foreign buyer and were found to be in compliance with U.S. standards related to insect infestation—the only factor for which the foreign buyer had requested inspection.

To qualify as number 3 grade, corn should contain not more than 4 percent of broken corn and foreign material (BCFM). The grading results, however, showed BCFM content in the samples of 7.3, 13.1, 15.8, and 16.2 percent, each of which represented sample grade rather than number 3 grade corn. According to the AMS inspector, some increase in BCFM could have resulted from unloading, handling, and reloading the corn at the transfer elevator, but such large increases were unlikely. One exporter told us it was normal practice to clean (screen) some corn at transfer elevators to reduce BCFM content. The AMS inspector said he had been told the cleaned corn would be sold in Canada while the screenings would be blended with western grade shipments.

In a July 1975 internal AMS memorandum, the inspector said his office's checks of many western grade cargoes showed that BCFM usually ranged from 10 to 25 percent. He said that, if USDA wanted to stop the misuse of western grade certificates in Canada, all certificates on lake vessel-carried grain would have to be marked "not valid for transshipment" and inspection and grading would have to be mandatory.

In January 1976, AMS officials told us that they knew of abuses in the use of western grade certificates and that they were amending AMS regulations to make western grade certificates invalid for transshipped grain.

Problems in Improving Personnel Administration

The involvement in the inspection system of over 100 inspection agencies, some providing inspection services to only 1 or 2 elevators, leads to a lack of uniformity in recruiting and training, uneven distribution of workloads, and limited opportunities for rotating personnel between assignments. Because grain may move over long distances and between markets, uniform application of grain standards, although difficult, is extremely important. Frequently, however, lack of uniformity between origin and destination grading has led to disputes between buyers and sellers and to distrust in the integrity of the inspection system.

AMS officials said that they recognized the need for improvement in personnel administration but that it was not possible under the present inspection system.

PERSONNEL RECRUITMENT

According to AMS regulations, license applicants must meet certain criteria relating to education, experience, and competency. However, there are no programwide requirements related specifically to hiring

new employees who may carry out inspection-related duties for long periods before being deemed ready to apply for inspectors' licenses.

Some State-operated inspection agencies follow State civil service requirements for recruiting new personnel. AMS, however, has little knowledge of personnel practices or employment requirements used by private and board of trade inspection agencies. The capability and integrity of the inspection system would be enhanced by the development of a personnel management system and modern personnel concepts to insure the hiring of an adequate number of well-qualified and reliable personnel.

TRAINING

The potential for more uniform grain sampling and grading would be increased if all inspection personnel received the same training and if more extensive training were provided. According to AMS regulations, designated inspection agencies have primary responsibility for training their personnel. For this reason and because they might be criticized if AMS-trained personnel were later found deficient, some AMS field offices were reluctant to provide or assist in the initial training of inspection agency personnel. Further, AMS had not developed any standardized training program or curriculum for the inspection agencies to follow. The agencies relied mainly on on-the-job training which generally extended over a minimum of 1 to 2 years before the employees applied for inspectors' licenses. Also, there was little evidence of more extensive, classroom-type training.

A standardized training program would increase assurance that proper and uniform inspection procedures would be taught to all inspection personnel. Also, more extensive training, particularly classroom-type training, seems necessary in view of the importance of precise representative sampling and the delicate judgments required for grading.

WORKLOAD DISTRIBUTION

Obtaining uniform inspection results was complicated when, due to seasonal or other periodic workload fluctuations, individual inspectors were burdened with heavy workloads. Prompt completion of inspections on a timely basis is extremely critical because any backlogs can delay elevator operations.

In some situations involving heavy workloads, inspectors did not allow enough time to properly conduct inspections. For example, at one agency visited, an inspector at one location made 116 inspections during 1 day and, according to the AMS supervisor, did not complete all required grading steps. In another case, records showed that one agency's inspectors averaged 100 inspections a day over a 1-month period. Although AMS has not developed guidelines on maximum inspection workloads, AMS officials said it was questionable whether proper inspections could have been made in the above circumstances.

PERSONNEL ROTATION

Distributing inspection responsibilities among many separate agencies, some of which provide inspection services to only one or two elevators, greatly limits the opportunities for rotating personnel between assignments. Personnel rotation, to help prevent a buildup of

conflicting interests and preserve an independent attitude, is a basic control measure in any inspection activity.

Personnel assigned to a single elevator for long periods can become susceptible to loss or compromise of independence in a variety of ways. For example,

—working alongside elevator employees and management for long periods may tend to develop relationships and attitudes favorable to elevator interests, or

—personnel on extended assignments can become easy prey for special gratuities or even bribes.

Many smaller agencies' opportunities for rotating inspectors are limited. Of the 26 designated agencies inspecting export shipments, 17 made inspections at only 1 or 2 elevators and therefore had little or no opportunity for rotating inspectors. Some licensed inspectors have remained at a single elevator as long as 15 years.

Limited Effectiveness of AMS Administration and Supervision

The effectiveness of AMS's administration and supervision of the grain inspection system has been limited not only because the system has been designed and operated essentially to facilitate grain marketing but also because AMS has not.

—had an adequate number of personnel to carry out its heavy workload responsibilities,

—taken aggressive action to correct all identified weaknesses or to determine the extent of indicated weaknesses, or

—established specific criteria on whether and what actions should be taken when grading, sampling, or other inspection irregularities occur.

FIELD OFFICE SUPERVISION

In addition to the conditions which complicated effective supervision of sampling and grading operations (see pp. 20 and 24), the field offices' ability to properly supervise the designated agencies' activities was hampered due to shortages of supervisory personnel and the large volume of other assigned activities.

As of July 1975, 223 Grain Division personnel assigned to AMS field offices were responsible for supervising the work of about 2,655 licensed inspectors, samplers, and technicians. On the average in fiscal year 1975, only about 40 percent of their time—an equivalent of about 88 staff-years—was devoted to such supervision. The rest was spent making original inspections of processed grain commodities under the Agricultural Marketing Act of 1946, as amended (7 U.S.C. 1621); responding to appeals for grain inspections; and carrying out indirect and miscellaneous activities.

AMS field offices generally gave a higher priority to services other than supervision of licensed personnel. To a large extent, these other services were provided in conjunction with loading or unloading transport conveyances, the delay of which could create costly production shutdowns or delays. In contrast, supervision did not directly involve production activities and could more easily be deferred without causing such interference. In addition, AMS assessed fees or hourly labor charges to cover the costs of processed commodity and appeal inspections while it earned no income for supervision activities.

In some AMS field office circuits, nonsupervision activities consumed a large portion of the supervisors' available time. In the Houston circuit, where about 13 percent of all export inspections were handled, 84 percent of the fiscal year 1975 staff time was devoted to inspecting rice and other commodities under the Agricultural Marketing Act or to making appeal inspections; only 16 percent was spent supervising licensed personnel. Other field offices which used less than 30 percent of their available staff time in fiscal year 1975 for supervision activities included Fort Worth, Texas; Kansas City, Missouri; Mobile, Alabama; New Orleans, Louisiana; Peoria, Illinois; and Wichita, Kansas.

AMS personnel believed that, on occasion, grain firms had requested appeal inspections on railcars or barges to purposely overload AMS supervisors and reduce their availability to supervise inspections of grain being exported. A licensed inspector said that this was the case at an elevator where he had previously inspected grain.

Although the grain inspection workload greatly increased beginning in fiscal year 1973, the number of AMS field supervisors remained relatively unchanged from 1968 until January 1976. During fiscal years 1973–75, the number of grain inspections averaged 3.7 million a year—an increase of about 35 percent over the annual average for the prior 5 years. Other workload activities also increased substantially. For example, during fiscal years 1973–75, the average annual number of appeal inspections increased by 44 percent over the annual average for the prior 5 years.

Since 1968, AMS has twice initiated budget requests for funds to increase its supervisory staff: by 12 for fiscal year 1969 and by 14 for fiscal year 1976. Both requests were deleted during the budget review process. Even if retained, these requests would have provided for only a minor increase.

In October 1975, after weaknesses in the inspection system had been publicized, the Congress included $5 million in USDA's fiscal year 1976 appropriations for AMS to employ about 200 additional supervisory personnel to improve and strengthen existing inspection procedures. In January 1976, AMS officials told us that 65 persons had been hired and they hoped to have all the additional persons hired by March 15, 1976.

ACTION ON INTERNAL USDA REPORTS

During recent years, several internal USDA reports, including AMS employees' memorandums, identified potential or existing weaknesses in the grain inspection system. Although these reports contained no outright evidence of unlawful or fraudulent practices, they pointed out both foreign buyers' problems with the quality of U.S. grain and certain deficiencies and weaknesses in grain inspection procedures, practices, and regulations. AMS corrected some deficiencies but others continued. Also, aggressive action was not taken to determine the extent of some of the system weaknesses which were being disclosed so that appropriate action could be devised.

Two of the more important reports were a 1969 trip report by J. A. Browning, Chairman of the Grain Division's Board of Appeals and Review, on his trip to the United Kingdom and Western Europe

(Browing report) and a 1973 Office of Audit report on the grain inspection program.

1969 Browning report

Mr. Browning's February 1969 trip report to the then Chief of the Grain Division's Inspection Branch discussed problems, such as excessive moisture and BCFM in corn shipments, which are similar to problems being voiced by foreign buyers today. (See ch. III.) He reported foreign buyers' allegations that the U.S. inspection system was subject to bribery and fraud and their suggestions that penalties for misconduct be increased. He cited the growing competition to U.S. grain in European countries and said he could not stress too strongly the part that good inspection practices, constant supervision, and quality control must play in helping the United States retain the overseas grain market.

The report concluded that

—research should be done on (1) loading methods to prevent stratification of whole and broken corn in carriers, (2) unloading methods to eliminate further breakage, and (3) development of more resistance to cracking in U.S. corn varieties;

—educational work should be done to eliminate the misconception promoted by importers of U.S. grain that the inspection certificates issued at U.S. export points evidence the quality of corn the importers are delivering to their customers;

—exporters, knowing the fragile condition of corn, should load well within the BCFM limit allowed for the grade being shipped rather than loading the maximum limit;

—the Grain Division should make "doubly sure" that there is no (1) bribery of inspectors, (2) falsification of inspection certificates, (3) misgrading of grain, or (4) improper sampling; and

—the Grain Division should have the personnel and funds needed to supervise and keep under surveillance weekend and night loading of grain at export points (which the report did not identify) where foreign complaints indicated loading of lower grade grain than that indicated on the inspection certificates.

Although the report contained serious allegations and indicated a number of potential problems, we were unable to determine the specific actions, if any, that AMS had taken to follow up on the allegations or to determine the extent of the problems. The former Chief of the Inspection Branch told us that travelers before, during, and after the Browning visit had made similar recommendations, all of which were considered in writing the regulations implementing the 1968 amendments to the Grain Standards Act. He said, however, that it would be difficult to pinpoint the specific action taken in response to any particular recommendation.

1973 Office of Audit report

In a May 1973 report to the AMS Administrator, USDA's Office of Audit identified deficiencies in grain inspection procedures, practices, and regulations. The report was based on a nationwide audit of the grain inspection program. Following are some of the deficiencies reported.

—The amount of training, testing, and supervision provided to new samplers was left to the AMS supervisors' discretion. Most new

samplers were not tested for competency before licensing and were not required to pass a formal test until they applied for license renewal after working 3 years. Instructions and guidelines were needed for licensing and supervising samplers.

—At some inspection points, sampling equipment and samples were accessible to elevator personnel and others. At one location, blank official inspection certificates were left in an open, unattended cabinet.

—At various inspection points, different procedures were used in the sampling and grading of grain being loaded from more than one conveyor belt or other source. In some cases, grain from each conveyor belt or other source was being sampled and graded separately; in other cases, such samples were combined and graded as one sample.

—AMS supervisors and licensed inspectors sometimes used unapproved shortcuts by (1) grading smaller samples than required by existing instructions or (2) not grading a second portion of a sample when the grade was determined on a narrow margin or when the results were just under the grade limit.

—The Grain Division did not have a system for prompt decisions on such matters as proposed instructions, amendments to regulations, replies to foreign complaints, and requests for investigations.

—Standards and instructions needed improvement to prevent the shipping of undetected infested grain and to insure uniformity in testing for weevils or other insects and in grading grain as "weevily."

—Instructions were needed to avoid confusion and lack of uniformity in making stowage examinations.

—Licensed inspectors and AMS supervisors did not always (1) verify the stowage location of grain being loaded aboard ship or (2) test mechanical samplers in accordance with instructions.

—Some field offices did not follow reporting instructions, and important management control information was not used to insure that the field offices provided adequate supervision to inspection agency personnel. The auditors estimated that, at one field office, AMS supervisors spent 90 percent of their time in the office rather than onsite.

AMS generally agreed with the auditors' recommendations and took, or said it planned to take, action on a number of the deficiencies. However, many of the deficiencies, including the following, still existed during our review.

—AMS has not revised the standards and instructions to prevent the shipping of undetected infested grain or to insure uniformity of infestation tests made by the various field offices and inspection agencies. AMS's target date for these revisions is July 1976.

—AMS instructions for stowage examinations, issued in July 1975, need further revision to eliminate confusion and provide for increased uniformity. (See page 27.)

—AMS has not adequately insured that licensed inspectors safeguard official samples of grain to maintain their integrity. (See page 19.)

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AMS officials said that the Office of Audit report was very comprehensive and that they were doing their best to correct the identified deficiencies.

ADMINISTRATIVE ACTIONS

Although AMS supervisors found many grading, sampling, and other irregularities while supervising the work of licensed personnel, corrective action to prevent recurrences was seldom taken, mainly because there were no specific criteria for determining what actions should be taken. When action was taken, it was inconsistent. Also, because licensed personnel were employees of designated inspection agencies, AMS supervisors were in a difficult position to effectively prevent recurrences of irregularities.

Under the act and AMS regulations, official inspection personnel are subject to certain administrative action whenever it is found that they have improperly performed any official function or have otherwise violated the act or AMS regulations or instructions. The regulations require that such action be promptly initiated. In the case of serious violations, which may also be subject to criminal prosecution, AMS may refuse to renew or may suspend or revoke a license after the licensee has been afforded an opportunity for a hearing. If deemed in the best interest of the inspection system, AMS may, before a hearing, suspend a license temporarily pending final determination. The actions taken since 1964, as shown in AMS records, follow.

Action	Number of cases		
	Total	1964 to August 1974	August 1974 to January 1976
License temporarily suspended pending final determination	17	2	15
License suspended for a definite period	5	5	----------
Renewal of license refused	1	1	----------
License revoked	8	1	7
Total	31	9	22

AMS may dispose of less serious cases by issuing corrective action reports or written notices of warning. AMS considers as less serious such irregularities as unintentional misgrading or poor sampling techniques. However, no specific criteria exist on the type or duration of the action to be taken when irregularities occur. According to an AMS official, administrative actions are determined on a case-by-case basis and depend on the nature and frequency of the irregularities.

AMS supervisors often find irregularities in grading. According to operating instructions, the supervisor is to prepare a record of sampling and grading information on each appeal and supervision inspection. The supervisor in charge of each field office is to periodically review these records and, when he determines that deficiencies have been flagrant or excessively repetitious, is to initiate a corrective action report which is routed to the AMS supervisor. The AMS supervisor is to determine the cause of the deficiency, discuss the deficiency with the licensed inspector, take the necessary corrective action to prevent recurrences, and complete the report to show the corrective action and the inspector's comments, if any.

The determination of which irregularities should be considered flagrant or excessively repetitious was generally left to the discretion

of field office personnel. This resulted in inconsistencies between and within field offices in determining whether and what actions would be taken.

In the case of incorrect grade certificates, for example, some field offices followed a 1968 guideline established by one AMS office that all incorrect grades of one grade or more on certificates of export grain or two grades or more on other certificates would be considered flagrant deficiencies for which corrective action reports were to be issued. Officials at other AMS field offices did not follow this guideline. They said use of the report in such cases was unwarranted because they generally were unable to establish that the deficiency was caused by the inspector's willfulness or his incompetence. In many instances, deficiencies could be attributable to other circumstances, such as faulty grading equipment or sampling methods or defects in grading technology, for which the inspector could not be held responsible.

At one field office, corrective action reports were used for only about one-fourth of the total number of irregularities which according to the 1968 guideline, would have been considered flagrant. At four other field offices, the use of the reports appeared to be even less frequent. Many apparent flagrant or repetitious deficiencies therefore went unreported and, consequently, were not dealt with by AMS supervisors.

Even when irregularities were reported, they were not always dealt with effectively and decisively. AMS supervisors told us that, when corrective action reports were prepared, they generally discussed the deficiencies with the licensed personnel but that they believed the inspection agency's chief inspector was responsible for necessary followup supervision. Also, since the licensed personnel were not AMS employees, AMS supervisors were limited in dealing effectively with deficiencies. For example, AMS supervisors could not provide additional training, maintain close and frequent surveillance of the licensee's work, or control the licensee's assignments.

AMS's lack of decisiveness was especially evident in the case of an inspector who was found to have made exceptionally serious grading errors on 10 occasions over a 3-year period. The inspector was finally ordered to be reexamined and, upon failing the examination for three grains—barley, rye, and soybeans—he was declared incompetent.

AMS took no action to immediately suspend his license. Instead, it allowed for a formal appeal proceeding to which the inspector was entitled. Although the license was suspended about 12 months later, during the interim AMS supervisors found additional flagrant deficiencies. The inspector's assignments during this period included the grading of about 9 million bushels of barley, rye, and soybeans.

AMS supervisors encountered other types of deficiencies with inspection personnel, including alcoholism, carelessness, and other improper behavior, which they were unable to deal with effectively. AMS officials told us that inspection personnel often ignored or refused AMS supervisors' direct advice and that frequently the inspection agencies' management refused to cooperate with AMS.

AMS's ability to effectively administer and supervise the grain inspection system is affected, in large part, by the facts that (1) the system was designed to operate primarily through designated non-Federal agencies and (2) its primary objective is to facilitate grain marketing. Despite these limits, however, AMS's administration and supervision could have been more effective.

AMS reduced its supervision of licensed personnel in some locations to levels far below those needed. Also, its requests for staffing increases were not realistic in relation to workload increases, particularly at those locations were important services other than supervision of sampling and grading consumed extremely large portions of available time. Additional supervisory personnel authorized by the Congress in October 1975 should help bring AMS's staffing level more in line with its workload requirements.

Also, AMS could have more aggressively followed up on identified and indicated weaknesses. Timely and thorough reviews and investigations of alleged or reported discrepancies and abuses—a basic management responsibility—might have helped alleviate problems in the existing inspection system.

Clear and specific criteria on actions to be taken when irregularities occurred should also have been established. The lack of such criteria led to inconsistencies in dealing with deficient inspection procedures and practices. Also, AMS supervisors were not able to effectively deal with inspection deficiencies since the licensed personnel were employees of the designated inspection agencies.

Administration's Proposal To Strengthen the National Grain Inspection System and Our Evaluation and Conclusions

The foregoing sections detailed some of the numerous problems, deficiencies, and criminal abuses related to the present national grain inspection system. These disclosures, together with the matters already covered in congressional hearings and internal USDA reports, have led to a strong demand for remedial action to restore integrity to the system. A key question in this regard is whether such remedial action should be directed to administrative inadequacies on the part of USDA and its designated inspection agencies, to more fundamental problems involving the alinement and definitions of responsibilities between USDA and its designees, or to some combination of both.

ADMINISTRATION PROPOSAL

In responding to the need for remedial action, a task force of USDA officials and a representative of the Office of Management and Budget was formed to deal with present problems in the grain inspection system. The task force studied five options in the form of alternative systems, as follows:

1. Continue the basic elements of the present system but tighten conflict-of-interest and penalty provisions, and increase Federal employment to permit 100-percent supervision of grain exports.
2. Continue the basic elements of the present system, with tighter conflict-of-interest and penalty provisions, in geographic areas where official inspection agencies can meet proposed new standards of performance, but permit USDA to make original inspections where inspection agencies cannot meet such standards.
3. Eliminate the private sector as official inspection agencies, continue the designation of State agencies as official inspection agencies, and permit USDA to make original inspections in those geographical areas where States are unwilling or incapable of providing grain inspection service.

4. Permit State inspection agencies to make original inspections on nonexport grain, with USDA assuming responsibility for export inspections and for domestic inspections where States are unwilling or incapable of making inspections.

5. Establish an all-Federal system.

After discussions between USDA and the Office of Management and Budget, the Administration chose alternative 2. In bills currently before the Congress (H.R. 9467 and S. 2297), the Administration proposes retaining the existing two-level grain inspection system and tightening up various administrative procedures, including authorizing USDA to

—make original inspections on an interim basis in certain situations;
—monitor activities in foreign ports for grain officially inspected;
—further limit conflict-of-interest situations;
—require official inspection agencies to meet their designated responsibilities regarding training, staffing, supervision, and reporting requirements; and
—make triennial designations of all official inspection agencies.

Also, the Congress recently appropriated $5 million for AMS to hire about 200 additional employees to increase its supervision of the grain inspection system.

OUR EVALUATION AND CONCLUSIONS

We believe the Administration's proposal and the increased staffing could strengthen the present system. However, they do not go far enough; more fundamental changes are required.

In our opinion, the prime consideration in dealing with the system's serious breakdown should be to design a system which will offer reasonable assurance of working well; which in time will rebuild a solid reputation for integrity, competency, and efficiency within the United States and throughout the world; and which clearly fixes responsibilities for any deficiencies or abuses. Such a system should be directly controlled and, wherever practicable, operated by the Federal Government.

We believe that USDA's role in the national grain inspection system has not been conceived or carried out in a manner which enables it to exercise effective control over the system and to insure the accuracy of grain quality as set forth on inspection certificates. The present inspection certificates are neither prepared nor issued by USDA, except for appeals and some shipments of U.S. grain from Canadian ports. The individual certificate is basically a representation by one of the designated inspection agencies subject only to USDA's loosely drawn supervisory or monitoring role.

Grain sampling, grading, stowage examinations, and other essential elements of the total grain inspection system are not now, and under the Administration's proposal could not realistically be, subjected to sufficient Federal supervision to warrant any claim that the designated agencies' inspection certificates are a product of USDA or of the U.S. Government.

Although USDA's overall direction and supervision of the existing system have been deficient, the system's structure, the general atmosphere in which the system operates, and the almost total absence of

any direct Federal role sharply limit the responsibility which can be placed with USDA for serious shortcomings. Although increased Federal supervision, more severe penalties, and more intensive and extensive investigations by USDA could contribute to more integrity in system operations, it is not feasible to increase Federal supervision to prevent circumvention of the system by persons so inclined.

A further shortcoming with the present inspection system is that USDA does not have authority to control the weighing of grain in conjunction with the preparation of inspection certificates. Inspectors generally must accept weights furnished by elevator operators to describe the quantities of grain they inspect. The inspectors cannot be assured that all quantities in a lot are sampled. This shortcoming seriously compromises the value of the inspection certificates. Grain quality determinations should, in our view, be clearly related to specific quantities of grain and both determinations should be shown on the inspection certificates. The Administration's proposal makes no reference to grain weighing.

In our view, the organization charged with administering the national grain inspection system must have the capability to:

1. Establish and administer adequate and uniform standards for recruiting, training, and supervising inspection personnel.
2. Establish and administer a rotation program for inspectors.
3. Prescribe and enforce appropriate work production standards for inspectors.
4. Establish and administer an adequate system of controls and procedures for the sampling process, including equipment operation and maintenance.
5. Eliminate all conflicts of interest as well as the appearance of such conflicts and impose appropriate penalties for violations quickly and decisively.
6. Promote continuing research to achieve uniform and accurate grading.
7. Establish and administer adequate controls, standards, and procedures for weighing grain, including safeguards over equipment calibration and maintenance.
8. Respond quickly and decisively with appropriate reviews and investigations of reported discrepancies and abuses.

We question whether the above procedural and performance standards would be achieved under the existing two-level system which the Administration would retain. The problem of maintaining uniformity, consistency, and high standards of performance in the national inspection system is a formidable one and is greatly complicated by the fact that the system is operated through widely dispersed State, trade-related, and private agencies.

Recent experience has shown that the inspection system can function only as well as the designated inspection agencies and the grain trade choose to make it function. AMS officials told us, for example, that some of the problems they have encountered in dealing with State inspection agencies and with the private agencies and trade associations have been (1) the agencies' general unwillingness to cooperate fully in the proper administration of the inspection system and resentment of Federal supervision by the States in particular, (2) some agencies' tendency to circumvent or compromise prescribed pro-

cedures and regulations as quickly as they are written, (3) AMS's inability to obtain timely corrective action when deficiencies are found because problems and complaints must often be routed through various channels, (4) the impracticality of AMS's providing centralized training to inspection personnel, (5) AMS's inability to readily discipline or discharge incompetent or uncooperative inspection personnel, and (6) the lack of a merit system for employment and promotion which sometimes results in employees of questionable ability.

The task force indicated that an all-Federal system would have the advantages of uniformity, consistency, and control, as well as the intangible benefit of increased confidence, as follows:

1. Better control of inspection activities by:
   a. More uniform application of standards;
   b. More uniform training and qualification standards;
   c. Quicker reaction to crop quality inspection problems; (Direct communication with all offices.)
   d. Providing more accurate and complete data on crop quality, movement, and sales;
   e. Greater flexibility in utilization of inspection personnel; (Cross utilization between programs of AMS possible, particularly those having seasonal work.)
   f. Maximum use of standardized equipment and improved maintenance of inspection equipment; (All equipment up to date and checked for accuracy by specially trained teams.)

* * *

2. Reduction of improper influence over licensees by minimizing conflicts of interest. (Close control and rotation of employees.)
3. Increased confidence in the inspection service. (Nation-wide consistency of grading and inspection by uniformly [sic] trained Federal employees.)
4. Reduces the number of multiple inspections (appeals after originals would be reduced as both levels of inspection would be performed by Federal supervisors).
5. Eliminates jurisdictional conflicts over inspection areas.

USDA also cited the following disadvantages of a total Federal system.

1. Increase in cost to the public and users of the service.
2. Increase in the number of Federal employees.
3. Possible cost of reimbursement or restitution to agencies for loss of business. (Official inspection agencies designated by USDA have assumed liabilities based on their designations.) [1]
4. Loss of employment for some licensees. (Most qualified licensees employed by the current official inspection agency would be hired by USDA under this alternative.)
5. Prevents States from providing a grain inspection service.

Cost of a Federal inspection system

We are not able at this time to estimate the cost for a federally operated system, since numerous details need to be worked out on such matters as the system's organization, inspection and weighing stand-

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[1] While the matter is not free from doubt, in our opinion payment for loss of business would not be legally required. Any equipment in the hands of designated agencies could be purchased for use by the Government.

ards and procedures, fees, qualifications of employees, and implications of employee rotation. However, we question the validity of the task force's contention that a Federal system would increase costs to the public and users of the service.

The users now are assessed fees or charges for inspection services, including most Federal appeal inspections. We believe that fees and charges for Federal inspection services can be fixed in reasonable amounts that will either entirely or substantially recover the fair costs of providing such services. Further, we believe that an efficient and effective Federal system can be developed which would afford ample opportunity for efficiencies and economies not currently realizable under the present system in which Federal supervision overlaps designated agencies, a number of which are operated for profit.

A more effective and reliable inspection system should reduce the inspection workload. Under the present system, grain is often inspected at both origin and destination. The duplicate inspections are often made because buyers and sellers lack confidence in the accuracy and uniformity of inspections at other locations. If a highly reliable inspection service were established at major destination points, the need for origin inspections should diminish. This workload reduction, in turn, would reduce the number of personnel needed.

Also, it is not uncommon for grain to be inspected and reinspected on multiple occasions. Export grain is often inspected four or five times. A highly reliable inspection system at major destination points should reduce the need for inspections of samples from country elevators. During fiscal year 1975, about 900,000 inspections, or about 26 percent of the total inspection workload, involved such samples.

The adoption of a federally operated system should result in a reduced number of appeal inspections. About 60 AMS staff-years were expended in fiscal year 1975 to respond to appeals. Appeals are usually made either because grades arrived at by the licensed inspectors are questionable or because grain buyers lack confidence in the licensed inspectors' abilities. Also, some foreign buyers routinely request appeal inspections before original inspections are made. Since appeal inspections are in addition to those of the licensed inspectors, a federally operated system should bring about a reduced appeal workload, particularly if the system can become highly reliable.

A reduction in the number of inspection agencies should result also in some increased efficiency in administrative and supportive services. A Federal system under single-agency administration would appear to offer more potential for administrative efficiency than the present system involving over 100 State and private agencies and a Federal supervisory structure.

It is presumed that personnel salaries under a Federal system would be set at levels suitable for the skills and responsibilities involved. These salaries may be higher or lower than those now paid by State or private agencies. Although some States may pay less than the Federal Government, some private inspectors' annual salaries and incomes have exceeded $30,000 with some earning up to $78,000.

Other considerations

Recent widely publicized abuses in the grain inspection system involving such matters as intentional misgrading of grain, shortweighing, and using improperly inspected carriers have led to an erosion of

confidence in the system both within the United States and abroad. Many persons—from American farmers to foreign buyers—are looking to the Federal Government to restore integrity to the system and to thereby facilitate the orderly marketing of grain domestically and promote the continued expansion of foreign agricultural markets. The situation, in our view, calls for substantive changes to eliminate weaknesses in controls and lessen the likelihood of any repetition of recent abuses.

Although none of the various proposed alternatives to the present system is without some disadvantage to those now involved in the system, the gravity of the problem calls for placing the overall national interest first. A soundly established, federally operated grain inspection system should, in our view, serve as positive evidence of American farmers, foreign buyers, traders, and end users of the U.S. commitment to a sound and reliable system.

Of the volume of grain inspected during fiscal year 1975, about 85 percent was inspected at the 36 domestic ports and 25 largest inland inspection points; the remaining 15 percent was inspected at the 122 smaller inland inspection points. We recognize that it may be impractical to provide direct Federal inspection at all smaller inland inspection points and at country elevators where the volumes of grain requiring official inspection are low or sporadic. At these locations, the cost of employing enough inspection personnel to insure reliable sampling would be excessive. To accommodate the needs of minor inland terminal and country elevators, USDA should be authorized to provide inspection services, on a request basis, through contracting or licensing arrangements. Such services could be provided by either State inspection agencies (first preference) or carefully selected and screened private agencies subject to USDA review and supervision.

The need to distinguish between major and minor terminals and to thereafter designate supplementary non-Federal inspection agencies will, of necessity, call for considerable discretion and judgment on USDA's part. Also, moving to an essentially all-Federal system will undoubtedly take time.

In phasing in a federally operated inspection system, a high priority should be given to establishing Federal inspection services at all port elevators, since recent disclosures of extensive criminal abuses and other shortcomings in the inspection system have involved port elevators primarily. Also, prolonging or postponing the development of a reliable inspection system at such elevators could have a lasting effect on foreign sales.

In summary, we believe that an essentially all-Federal inspection system would:

—Restore integrity and confidence in the inspection system.
—Provide greater uniformity and consistency in inspection procedures and operations.
—Establish an independent system, eliminating actual and potential conflicts of interest.
—Develop an inspection force conforming to uniform hiring and training requirements.
—Permit rotation of the inspection force among specific localities.
—Provide greater flexibility in use of inspection personnel, especially where seasonal work may be involved.

—Provide for maximum use of standardized equipment and better maintenance of equipment.
—Reduce the number of multiple or duplicate inspections presently required.
—Reduce the number of inspection agencies to increase administrative efficiency.
—Increase foreign trade or at least reduce chances of customers choosing to buy from other sources.
—Place inspectors under direct control of USDA to provide more effective authority to deal with inspector deficiencies.
—Eliminate present inequities whereby some inspectors earn annual salaries or incomes from $30,000 to, in some cases, $78,000.
—Give USDA direct responsibility and authority to deal with elevators whose complex grain-handling systems allow for easy circumvention of controls over drawing of representative grain samples.

Recommendations to the Congress and the Secretary of Agriculture

To insure, insofar as possible, that grain trading within the United States and with foreign countries is conducted in an orderly manner and that the interests of all parties concerned are adequately protected and to restore worldwide confidence in the quality, reliability, and uniformity of U.S. grain, we believe that fundamental changes are required in the grain inspection system. Accordingly, we recommend that the Congress establish essentially a Federal grain inspection system.

Recognizing that creating an essentially all-Federal system will take time and that, while some changes can be effected immediately, other changes, although urgently needed, will for practical reasons take more time for fully accomplish, we recommend that the system be established in phases, as follows:
The Congress should—

PHASE I

—provide USDA with authority to take over inspection services immediately from those States or firms where serious problems are disclosed,
—direct USDA to intensify surveillance over ongoing inspection services being provided by the States, trade associations, and private agencies until phases II and III are implemented,

PHASE II

—authorize and direct USDA to assume responsibility, at the earliest possible date, for providing inspection services—sampling, grading, and weighing—and for issuing official inspection certificates at all port elevators,

PHASE III

—authorize and direct USDA to extend the Federal inspection system (including sampling, grading, and weighing) to the main

inland terminals, after sufficient experience has been obtained at the ports, and

—direct USDA to provide inspection services, on a request basis and under contracting or licensing arrangements, at minor inland terminal and country elevators. Such services should be provided under USDA-prescribed standards and procedures and should be subject to USDA review and supervision.

We recommend also that inspection services be provided on a reimbursable basis under a system of fees designed to recover the fair costs of operating the system.

We recommend that USDA use distinctively colored and worded inspection certificates which are not authorized for use by any State or other agency. Non-Federal agencies providing inspection services at minor inland or country elevators should be provided with distinctively colored and worded inspection certificates. This should help to avoid confusion about immediate responsibility for the certificates' accuracy.

We recommend further that, in developing standards and procedures for a Federal grain inspection system, either by legislation or by regulation, the Congress and USDA consider the following matters.

Conflicts of interest.—The system should prohibit all of these, actual and potential, and should impose appropriate penalties for violations on the part of grain handlers and inspection personnel.

Sampling grain.—Adequate controls and procedures should be established for this process, including equipment operation and maintenance. Automated equipment should be mandatory to the extent feasible.

Weighing grain.—Grain weighing should be made part of the inspection system. Adequate controls, standards, and procedures should be established, including safeguards over equipment calibration and maintenance.

Grading grain.—The need for improved accuracy and uniformity should be met through continuing research (see p. 70) and training.

Personnel administration.—Uniform standards for recruiting, training, and supervising inspection personnel should be established and maintained, and a rotation program and work production standards for inspectors should be established.

General administration.—Quick and thorough reviews and investigations of reported discrepancies and abuses should be required.

The provision that superseded certificates be surrendered when repeat inspections are requested should be stringently enforced.

AMS instructions on stowage examinations should be revised to set forth training and performance requirements and to describe all situations where examinations should be required.

Appropriate annotations should be made on inspection certificates for grain loaded at Great Lakes ports stating that such certificates are not valid for transshipped grain.

To the extent practicable grain inspection operations should be open to public scrutiny by foreign buyers or other interested parties.

USDA Comments and Our Evaluation

GENERAL COMMENTS

The substance of USDA's comments (see app. VII) on the matters discussed in this chapter is that:

1. Although our recommendations are technically and organizationally feasible to implement, USDA's position is that legislation introduced as H.R. 9467 (see p. 39) will provide for an efficient and the most cost-effective grain inspection system of the alternatives examined by USDA.

2. USDA is moving ahead aggressively in the port areas with all actions necessary to secure and maintain the integrity of the grain inspection system. These actions involve a combination of stricter application of existing regulations and promulgation of additional regulations under existing statutes.

3. One of USDA's most vital needs is for authority to perform original inspections of grain on an interim basis. This need, according to USDA, is based on the fact that actions have been and are being taken to revoke the designations of official inspection agencies for violations of the Grain Standards Act and, because it is not always possible to organize a new official inspection agency or to identify an existing agency to continue inspection service when such actions are taken, USDA must have authority to provide original inspection services on an interim basis, to insure continuity of inspection.

Our evaluation

USDA top officials reemphasized to us the Administration's desire to maintain the existing basic organizational structure for the national grain inspection system, namely, that USDA should continue to carry out the inspection function through designated agencies, including States, trade associations, and private inspection agencies. Present problems and deficiencies, they maintained, can be corrected through improved administration and the passage of H.R. 9467 which would strengthen conflict-of-interest restrictions, grant USDA certain additional authorities, and impose more stringent penalties.

We recognize that improvements can be made in the operation of the national grain inspection system under the present organizational structure, and USDA is exerting considerable effort in this regard. Additional supervisory personnel are being hired and will be trained, new supervisory procedures are being developed, and USDA officials are working with individual grain firms on affirmative action plans to improve grain-marketing practices. These efforts are both worthwhile and long overdue. We recognize also that the additional authorities being requested by USDA would enhance the possibilities for strengthening the national grain inspection system.

We question, however, whether USDA's present actions or its proposed actions, which must await the enactment of new legislation, will be sufficient to enable it to effectively administer the national grain inspection system in a monitoring role through a diverse complex of State and private agencies and trade associations. As indicated in various subsections of this chapter, there are important inherent limitations and problems involved in USDA's present moni-

toring role that cannot be readily overcome by increased Federal supervision, more extensive regulations, more severe penalties, and more extensive investigational efforts. These problems relate to

—insuring the avoidance of conflicts of interest;
—insuring integrity, competency, and consistency in the sampling, weighing, grading, and stowage examination processes; and
—insuring adequacy and uniformity in personnel administration, including recruiting, training, work standards, supervision, and rotation of inspection personnel.

Our conclusion that the inspection system should be directly controlled and, wherever practicable, operated by the Federal Government is based on the premise that, as a single entity, USDA could best cope with the formidable problem of establishing and maintaining uniformity, consistency, and high standards of performance within the system. USDA officials conceded that, if the present system were not already in place, they would not recreate it in its present form and that, from a management control standpoint, a federally controlled and operated system would be best.

We recognize that USDA may be confronted with many pressures to maintain a comparative status quo in the organizational structure of the national grain inspection system. Those currently involved in the system do not want to lose their agencies and their incomes. There are concerns also about expanding the Federal bureaucracy and the number of Federal employees at the expense of the States and private enterprise, concerns about problems of finding a sufficient number of qualified staff or hiring currently licensed inspectors who subsequently may have to be discharged as a result of expanding criminal investigations, and other varied concerns and problems about dislocations which would be involved in any transition to a Federal system. We believe, however, that too much of the national interest is at stake for continued primary reliance on more formidably written Government regulations and procedures backed up by more Government supervisors and investigators.

The legislative history of the U.S. Grain Standards Act, originally enacted in 1916, shows that many of the same problems that plagued the grain trade 60 years ago still exist. (See app. V.) Reports of various public and private commissions issued before 1916 disclosed that major terminal markets regularly engaged in a variety of unfair business practices, including falsely certifying the grade of grain and mixing and adulterating grain. The reports state that, due to domination of the grain inspection and grading system by boards of trade and purchasers at the terminal markets, farmers and independent shippers were compelled to accept lower grades and less money for their grain and the ultimate foreign buyer and domestic purchasers regularly received a poor quality of grain under a certificate of inspection indicating a higher grade.

The present system with some modifications has been in operation for 60 years and the Administration's proposal would retain many of the fundamental disadvantages and limitations of this system. The deeply entrenched and pervasive problems of the past and present will not, in our opinion, yield easily under this system.

FURTHER COMMENTS AND OUR EVALUATION

Grain weighing.—USDA agreed that weight supervision should be provided for in the grain inspection system, but only at port elevators where the quantities shipped are divided into sublots. It said it did not believe that the report adequately supported the recommendation that the weighing system at interior points needed to undergo drastic change or that accurate weights were important in establishing grades at interior points. USDA said that accurate weights were vital, however, in transactions between buyers and sellers.

As indicated on page 39, the Administration's proposal to the Congress to strengthen the national grain inspection system is silent on the matter of weighing. USDA's above stated position—that weight supervision should be provided at port elevators—represents a modification of this original proposal. We believe, however, that grading and weighing of grain should be a coordinated operation and that accurate determinations of grade and weight are highly important in transactions between buyers and sellers whether such transactions occur at port elevators or at inland points.

In asserting that the report did not adequately demonstrate that accurate grain weights were a problem at interior terminals, USDA incorrectly analyzed the data presented on page 22. USDA contended that, because questionnaires were sent to 2,195 country elevator operators, the 339 operators who indicated they were dissatisfied with weights and grades assigned at shipping destinations represented only 15 percent of the total rather than 41 percent. Correct analysis in this circumstance requires that no conclusions be drawn about country elevator operators who did not respond to the questionnaire.

Even if it were correct to conclude that 15 percent rather than 41 percent of country elevators were having problems, we fail to see how USDA can regard this percentage as inconsequential.

Distinctive inspection certificates.—USDA agreed that it should issue distinctively colored and worded Federal inspection certificates which are separate and apart from those certificates issued by non-Federal agencies.

Reimbursable costs.—USDA agreed in principle with out recommendation that inspection services be provided on a reimbursable basis. USDA said, however, that its position was that there were certain indirect costs of a public benefit nature that should be financed from appropriated funds, including (1) basic research, (2) general public information, (3) monitoring inspection accuracy in foreign ports, and (4) certain administrative costs. USDA said it believed that a percentage of such costs should be funded through appropriations. Costs which USDA considered reimbursable included (1) direct supervision of Federal employees at the field office level, (2) direct supervision of official inspection and weighing agency personnel, and (3) appeal activities.

Conflicts of interest.—USDA said that, pending legislation, it proposed to amend its regulations to prohibit conflicts of interest, subject to statutory limitations. Additional controls on conflicts of interest, it said, would be considered in developing affirmative action programs with individual grain firms.

Sampling grain.—USDA agreed that adequate controls, procedures, and safeguards should be established over the sampling process, in-

cluding equipment operation and maintenance. However, it said it believed that feasibility studies should be made before USDA mandates the use of additional automated equipment.

Grading grain.—USDA said it planned to consider a long-term program of research and training to provide a balanced technical, statistical, and economic data base and an equipment development and testing program. Consideration would also be given, it said, to applying appropriate resources to this effort.

Personnel administration.—USDA agreed that uniform standards for training of non-Federal inspection personnel were essential and that a rotation program and standards of work for such personnel should be established. USDA said it did not believe that uniform standards for recruiting non-Federal personnel were feasible because of local hiring conditions, labor unions, and State civil service regulations; however, competency tests were given before licensing. USDA said that official inspection agencies should be fully responsible for setting their own recruiting standards, training their personnel to pass the required USDA competency tests and qualify as technicians, and maintaining inspectors' proficiency through an aggressive training program once the inspectors are licensed.

General administration.—USDA agreed that:

—Quick and thorough reviews and investigations of reported discrepancies and abuses should be required.

—The provision that superseded certificates be surrendered when repeat inspections are requested should be more stringently enforced. It said that recent additional appropriations to add Federal supervisory personnel would permit enforcement of this regulation throughout the system.

—Instructions on stowage examinations need to be improved. It said it was reviewing the need to revise and strengthen the instructions regarding training and performance requirements for such examinations.

—Inspection certificates for grain loaded from Great Lakes ports should be qualified. It said that amendments to the regulations under the Grain Standards Act to provide for such statements were being developed.

—The inspection system should be open to public scrutiny by any interested parties, provided that certain information, such as documents (certificates of grade, loading logs, etc.) pertaining to private transactions, were released only to real parties in interest. It noted that, under its existing regulations on conflicts of interest, entry by the trade into grain inspection laboratories was prohibited because of the possible pressure that might be exerted on those inspectors making grade determinations.

Views of State Officials and Our Evaluation

We asked State department of agriculture officials in the 23 States having designated inspection agencies for their views on various matters relating to the grain inspection system, including the possible transfer of all inspection responsibilities to a Federal agency. All the 20 officials who responded were generally opposed to a total Federal inspection service. A summary of their pertinent views follows.

—Nearly all the officials cited their States' favorable records of service. Many of the States had provided inspection services for many years, some for over 50 years. Services were usually initiated because specific inspection needs were unmet by either Federal or private sources.

—Officials of 14 States said their agencies inspected grains or other products or provided other types of services that were not covered under the Grain Standards Act. Other items inspected included sunflower, safflower, and mustard seeds; alfalfa and cottonseed pellets; rice; pulses; hay; buckwheat; millet; and hops. Several States provided weighing services or had laboratory facilities for analyzing protein content. One had facilities for analyzing pesticide residues, heavy metals, or undesirable additives, and one provided a service for grading samples mailed to a laboratory.

—Officials of 11 States believed that a total Federal system would be more expensive. Some said their States operated small agencies consisting of part-time services that could be efficiently provided by combining them with inspections of other food items.

—Other factors officials cited for objecting to a total Federal system were the loss of an independent source for filing appeals, excessive Federal regulation, and curtailment of services in remote areas.

All the responding officials said or indicated that it was appropriate for States to provide inspection services under the Grain Standards Act, and all preferred a Federal-State system to a total Federal system.

We agree that many of the States have favorable records of service. Under our proposal, State agencies could continue to be designated to provide inspection services at certain elevators. Also, according to AMS officials, many of the inspection services State officials cited are available and are being provided either by or in cooperation with AMS under authority of the Agricultural Marketing Act.

The fact that the States generally pay lower salaries than the Federal Government does may account for the States contention that a Federal system would be more expensive. As stated on pages 41 and 42, however, we believe certain efficiencies and economies can be realized under a federally operated system. Also, we would expect little change in the operations of those States with small agencies providing part-time inspection services since, under our proposal, Federal inspection would be provided mainly at high-volume elevators requiring full-time inspection services. We believe that an appeal procedure adequate for those using the inspection service can be developed. AMS has been able to provide appeal services for such other Federal programs as rice inspection and meat grading.

CHAPTER 3

FOREIGN BUYERS' COMPLAINTS ABOUT U.S. GRAIN

Our inquiries in nine foreign countries revealed much dissatisfaction with U.S. grain sold abroad. Many foreign customers believed they regularly received lower quality and weight than they paid for. The resulting cost in terms of diminished foreign sales in past years and other effects is not calculable. Many buyers, however, said they had reduced their purchases of U.S. grain because of the problems they had experienced and were buying more from other countries. A few said they had stopped buying U.S. grain altogether.

Some of the foreign buyers did not furnish documentation supporting what they told us. They often lacked suitable equipment or expertise with which to draw representative samples and determine the grade of grain according to U.S. procedures. Nevertheless, many had performed such sampling and inspection as they deemed appropriate or had hired independent inspectors in their own countries to redetermine grade and had strong convictions that their problems were serious, real, and of long standing. Despite these problems, many buyers said the United States would continue to be their principal supplier of wheat, corn, and soybeans because it is a stable, dependable supply source for large quantities of grain at competitive prices.

In our opinion, USDA has not been sufficiently sensitive to foreign buyers' problems. Many foreign buyers told us that, because USDA had not assisted them in the past, they had not reported the majority of their complaints to USDA. Instead they had attempted, usually with very limited success, to settle disputes directly with the exporters. USDA statistics showing only a limited number of complaints received in past years therefore are misleading, in our opinion, because they bear little relationship to the real significance of the foreign buyers' problems. Also, most of USDA's Foreign Agricultural Service (FAS) attaches we visited were not fully aware of the extent of foreign buyers' problems and said they lacked the authority, expertise, and resources for investigating complaints.

COMMENTS RECEIVED DURING OUR VISITS TO NINE FOREIGN COUNTRIES

We obtained the comments summarized below during visits to nine foreign countries—India, Israel, Italy, Japan, Korea, the Netherlands, Spain, the United Kingdom, and West Germany—which were among the top importers of U.S. grain. In these countries we interviewed (1) officials (foreign buyers) asscciated with 68 entities, including grain brokerage firms, food processors, and foreign government procurement agencies, which had brought large quantities of grain or had filed complaints with USDA about the quality or

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weight of U.S. grain shipments, (2) representatives of 10 grain trade associations and 2 arbitration boards, and (3) the agricultural attaches and their associates.

Ten of the 68 buyers told us that their firms were subsidiaries or affiliates of companies exporting U.S. grain. Some, however, said they also purchased U.S. grain from other companies. In addition, another buyer bought grain directly from U.S. farmers and farmer cooperatives and shipped it to his overseas firm through his own elevator in the United States.

We interviewed the buyers to (1) determine the nature and significance of any problems they were having with U.S. grain shipments, (2) ascertain the possible impact of these problems on export sales of U.S. grain, and (3) identify improvements needed in USDA's handling of foreign complaints. We obtained documentation, where available, supporting adverse comments about U.S. grain shipments.

The comments we received varied. Most significant appeared to be that 53, or 78 percent, of the 68 foreign buyers told us they had experienced problems with many U.S. grain shipments. The other 15 said they had no problems or did not respond. Of the 53 experiencing problems, 26 said their problems involved both short weights and lower quality grain than they had paid for; 26 said they had experienced quality problems only; and 1 said his problems involved short weights only. (Many buyers who had no problems with short weights said they either bought insurance to guarantee weights or paid premiums to exporters to obtain grain on the basis of destination weights.)

In certain instances, there were differences among buyers within particular countries concerning the types of problems being experienced, the seriousness of those problems, and the attributed cause(s) of the problems. The types and seriousness of problems also differed among the nine countries. Although the comments were diverse and not always easily categorized, the summary below represents a fair overview.

QUALITY OF U.S. GRAIN

—Many grain shipments from the United States were much lower in quality than was paid for and specified on the inspection certificates. The problem was particularly acute with corn but was also significant with wheat, soybeans, and soybean meal. (Soybean meal is not covered by the Grain Standards Act but is inspected on a request basis under the Agricultural Marketing Act.) Illustrative of the types of problems experienced were: (1) corn shipments contained excessive BCFM and moisture, had excessive heat damage, were infested, and had low test weights, (2) wheat shipments contained excessive foreign material and shrunken kernels and had low protein contents and low test weights, (3) soybean shipments contained excessive broken beans (splits) and foreign material, and (4) soybean meal was inconsistent in quality, frequently had very low protein content, and was frequently adulterated with excessive foreign material, such as grain hulls.

—Problems with quality of U.S. grain shipments were more frequent and severe proportionately than those experienced with grain purchased from other countries. Other countries were more attentive to buyers' complaints and to working out equitable settlements between buyers and sellers.

—Problems with U.S. grain are caused by (1) increasing emphasis in the United States on more rapid and efficient grain-marketing operations involving mechanical handling devices, (2) excessive artificial drying, particularly of the 1974 corn crop, which makes the grain more brittle and susceptible to damage during handling, and (3) laxities in the operation of the grain inspection system.

—Problems with the quality of grain delivered abroad have existed for a number of years (some said for 10 to 15 years) but have become much worse in recent years.

—Because the typical contract with a U.S. exporter stipulates that grain is sold on the basis of grade determined at export point, U.S. exporters hide very effectively behind their inspection certificates when disputes arise about the quality of grain actually delivered.

—The U.S. Government should stand behind inspection certificates when they are determined to be inaccurate. (Some buyers regarded the certificates as U.S. Government representations.)

The following are examples which foreign buyers furnished to us concerning problems with the quality of U.S. grain shipments.

—One corn buyer received a shipment of 390,320 bushels which, based on samples taken and analyzed by a court-appointed grain inspector, contained 25 percent BCFM. The inspection certificate showed that the corn was number 3 with BCFM of 3.5 percent. The maximum BCFM permitted by the standards for number 3 corn is 4 percent. In responding to a complaint from the importer, the U.S. exporter said:

> * * * the inspection certificate is final and conclusive as to the quality/condition of the goods. You are certainly free to investigate about the inspection * * * but your action in this respect would be extracontractual and therefore of no concern to us.

The buyer estimated that he lost $100,000 because of the high BCFM.

—Another buyer received 714,933 bushels of number 3 hard amber durum wheat which, on the basis of USDA's analysis of various samples taken by an independent firm, contained wheat of contrasting classes ranging from 7 percent to 22 percent. The inspection certificate showed that the shipment contained 2.2 percent wheat of contrasting classes. The maximum wheat of contrasting classes permitted by the standards for number 3 wheat is 3 percent. The buyer estimated that he lost between $400,000 and $500,000 on this shipment, because the lower quality wheat could not be used for its intended purpose.

In furnishing information to the agricultural attache for responding to the importer's complaint, FAS, based on AMS's response, stated that it was unable to offer a definite reason for why the higher percentage of contrasting-class wheat was not found during inspection at loading. FAS said possible reasons for the difference could be:

> * * * a result of manipulation, substitution, improper or careless handling of samples or possible collusion between official inspection personnel and elevator employees.

FAS also pointed out that the difference could have resulted from (1) loading wheat into the vessel at some other location, (2) loading some wheat aboard the vessel while inspectors were not present, or (3) loading the wheat in a manner that would bypass the sampler. Subsequently, the attache informed the complainant that FAS was unable to offer a definite reason for the difference between the percentages of wheat of contrasting classes found during loading and at destination.

WEIGHT PROBLEMS

—Short weights on grain shipments from the United States were a serious problem. Opinions differed considerably, however, on what constituted an acceptable tolerance for weight shortages: some buyers were concerned about a 0.2 percent difference between origin and destination weights; others were not concerned unless the loss was more than 1 percent.

—Short-weight problems can be avoided by paying premiums to purchase U.S. grain on the basis of destination weights or by purchasing insurance to guarantee full destination weights.

—Shipments received from the Gulf ports had more weight shortages than shipments originating from other U.S. ports. Also, insurance rates for destination weight guarantees are higher for shipments from the Gulf ports.

—Short-weight problems were experienced with grain from other countries, but shortages in U.S. grain shipments (in one case as high as 5 percent) were proportionately higher and more frequent.

IMPACT ON GRAIN PURCHASES FROM THE UNITED STATES

—Purchases of grain from the United States have been reduced as a result of problems with inferior quality grain and short weights. A few buyers said they had stopped buying U.S. grain altogether. Some said they had shifted their purchases of soybeans and corn to Brazil; wheat to Canada; and corn to Argentina, France, and South Africa. Import statistics furnished for one country showed a trend toward procuring grain from other countries. Some buyers said they would stop buying U.S. grain if supplies were available elsewhere.

—The United States will continue to be a principal world supplier of wheat, corn, and soybeans because it is a stable, dependable supply source for large quantities of grain at competitive prices and it is easy to participate in the U.S. market.

GRAIN STANDARDS

—With some exceptions, the official U.S. grain standards are satisfactory. Some suggestions were: (1) differentiate between broken corn and foreign material because broken corn is usable and foreign material may not be, (2) develop grading factors for expressing the incidence of stress cracks, brittleness, and mold in corn, (3) lower the moisture content allowed in corn, (4) specify the protein content in wheat, and (5) specify the oil and protein content in soybeans. (These matters are discussed further in ch. 4.)

—There is no effective recourse when problems are experienced with the quality or weight of U.S. grain shipments. International arbitration boards and courts, when disputes are brought before them, rule in favor of the inspection certificates, because the purchase contracts specify that the inspection certificates are the final determinants of grain quality.

—Formal complaints about problems with U.S. grain shipments are seldom made to agricultural attaches. It is useless to complain to them because they can do nothing to help resolve disputes.

—Attempts to obtain recompense from U.S. exporters for inferior quality grain and short weights are generally unsuccessful. Exporters typically respond that nothing can be done because the grain was purchased on the basis of the quality and weights determined during loading at U.S. ports.

GENERAL COMMENTS

—It would be much better if the grade of the grain purchased was established reliably *on the ship*, instead of 100 to 200 meters back from the ship, as is done now. There is too much emphasis on speed in loading grain, and U.S. port elevators presently have no incentive to load grain with care after the grade is established. (AMS officials told us there is no feasible way to obtain representative samples for grading after grain has been loaded aboard ship. They also said the disregard for damage during unloading at foreign ports is even greater than during loading at U.S. ports.)

—Some deterioration in grain quality as a result of handling and transportation is expected. However, significantly lower grade grain often was received than was shown on the inspection certificates because of incorrect grading at the origin ports.

—Confidence in the U.S. inspection system has been damaged, and action is needed to restore confidence. This could be accomplished through adoption of an inspection system operated by the U.S. Government.

Our Evaluation of Comments Received During Foreign Visits

Although the comments above indicate that foreign buyers were frequently dissatisfied with the grain received from the United States, it was difficult to evaluate the validity of most of their complaints. Some buyers did not furnish documentation supporting their problems with grain quality. Sampling methods were often not as reliable as U.S. methods and might not have resulted in samples which were representative of the entire grain shipment. More extensive documentation was available concerning short-weighted shipments. However, differences in weighing methods and accuracy of scales could account for some of the discrepancies between origin and destination weights.

Despite the lack of documentation in some cases, it appeared that foreign buyers have experienced legitimate problems with the quality and weights of U.S. grain. For example, as far back as 1969, foreign buyers complained to the Chairman of AMS's Board of Appeals and

Review about U.S. corn shipments with excessive moisture and BCFM. (See p. 34.)

USDA officials said grain price fluctuations were one reason for many complaints. They said that foreign buyers had contracted for the purchase of grain when grain prices were high. After the prices fell, the buyers often complained that the grain they received was not the quality for which they had contracted.

The condition of the 1974 U.S. corn crop undoubtedly was the cause of many recent quality problems. According to USDA officials, the corn was of lower quality than in previous years because there was an early frost and the corn was immature. Also, the crop's high moisture content resulted in more artificial drying. This caused the kernels to become brittle and very susceptible to breakage during handling.

Foreign importers, U.S. exporters, and USDA generally agree that some damage occurs to grain during handling and transit. Breakage occurs at loading when the grain hits the bottoms and sides of ships' holds and at unloading as it passes through the equipment and into the elevators. In addition, grain often is transshipped, that is, loaded off one vessel and into another at the foreign port at least one additional time before it reaches its final destination. The inspection certificate usually accompanies this grain to its final destination even though it specifies the quality of the grain only at the time of loading at the U.S. port.

USDA officials told us that grain can lose a grade or more between the time the certificate is issued and the time the grain reaches its destination. However, there is a definite lack of knowledge about just how much damage can be expected. We believe USDA's Agricultural Research Service (ARS), in coordination with AMS, should study this problem and attempt to quantify the amount of breakage that can be expected in handling and transporting grain.

The problems identified in chapter II concerning the grain inspection system and the lack of controls over the weighing of export grain also add credibility to the foreign buyers' complaints. There is little doubt that foreign buyers' confidence in the U.S. export system has been damaged because of the problems they have experienced and the extensive publicity concerning problems with the weighing and grading of U.S. grain.

It is not possible to calculate the effect this will have on U.S. export sales. The problems foreign buyers have had with the quality and weights of U.S. grain shipments may not have greatly affected the total volume of export sales to date. Both the quantity and value of our grain exports have risen dramatically in the past few years. However, competition for world grain markets is likely to grow as production potential is developed in other countries. Some foreign buyers are turning to countries other than the United States for their grain supplies and may continue to do so until they gain confidence in the quality and weights of U.S. grain.

Improvements Needed in USDA's Handling of Foreign Complaints

USDA has done very little in the past to assist foreign buyers when they complained about the quality or weights of U.S. grain shipments. Improvements are needed to insure that (1) appropriate investiga-

tions are made when complaints are reported to USDA and (2) effective procedures exist for acting on the results of investigative findings, particularly when they reflect on the integrity or efficiency of the national grain inspection system.

Currently USDA does not issue corrected certificates if original inspection or weight certificates are determined to be inaccurate. Corrected certificates could pave the way for equitable settlement of disputes between buyers and sellers but AMS officials told us issuance of corrected certificates could place U.S. exporters in an unduly disadvantageous position, particularly if foreign buyers refused to accept grain shipments on which corrected certificates had been issued.

FORMAL COMPLAINTS FILED WITH USDA NOT INDICATIVE OF EXTENT OF PROBLEMS

The majority of the foreign buyers we interviewed said they generally did not report their complaints to USDA. They believed it was useless to file formal complaints with USDA because USDA can do nothing to help them resolve disputes with U.S. exporters. As indicated previously, the majority of the 68 foreign buyers we interviewed said they attempt, usually with limited success, to negotiate problems concerning the quality and weights of U.S. grain shipments with U.S. exporters rather than file formal complaints with the attaches.

A compilation of FAS and AMS records indicates that foreign buyers filed formal complaints with USDA involving 582 export shipments during the 10 fiscal years ended June 30, 1975, as follows.

Fiscal year:	*Number of shipments*
1966	21
1967	134
1968	92
1969	80
1970	41
1971	62
1972	19
1973	23
1974	49
1975	61
Total	582

The complaints all concerned the quality of the grain received except for 17 shipments which involved short weights. We were unable to determine the total quantity of grain involved in the complaints, but it appeared that the amount would have been small in relation to the total grain exported during the 10-year period.

USDA apparently believed that the relatively small number of formal complaints indicated that problems with U.S. grain shipments were not widespread. For example, in a June 1974 response to complaints from two importers about habitual and significant short weights in soybean shipments, FAS stated, in part:

> [The] Department of Agriculture believes that [the] U.S. trade has [an] excellent worldwide reputation for shipping contractual quantities within accepted tolerances. Since we are unaware of any significant incidence of complaints in

> other countries, we [are] inclined to believe [the] * * * problems [are] due to misunderstanding or factors peculiar to our exports to [that country].

Also, seven of the nine attaches we contacted said they did not believe importers in the countries where they were stationed were having significant problems with U.S. grain. This probably could be attributed to the fact that foreign buyers experiencing problems generally were not filing complaints with the attaches because USDA had not assisted them in the past.

Some foreign buyers and foreign trade associations had information readily available on quality and weight discrepancies. For example, they provided detailed weight statistics that identified specific loading ports, shipping dates, vessels, invoice quantities, and landed weights. Quality and weight data was also available from some foreign government offices. Such information could be obtained by the attaches and forwarded to USDA on a regular basis. This data could serve as an early warning system to identify possible trends in short weighing or grain adulteration at specific ports and thus alert USDA to potential problems in the inspection system.

IMPROVED REGULATIONS AND PROCEDURES NEEDED FOR HANDLING FOREIGN COMPLAINTS

USDA had not assigned overall responsibility for coordinating the handling of foreign complaints to either FAS, which carries out USDA's policy of developing and expanding foreign markets for U.S. agricultural commodities, or AMS, which administers the national grain inspection system. Foreign buyers filed their complaints either with the attaches or directly with FAS or AMS. However, the agency receiving complaints did not always inform the other, or the attaches, of the complaints. As a result, no one in USDA was fully aware of all the complaints foreign buyers filed.

FAS officials told us that regulations on the handling of foreign complaints about grain quality would be revised and distributed to all appropriate USDA agencies with instructions that they forward all complaints received to FAS for processing. They also told us they were developing a log for controlling and following up on complaints about grain quality. We believe that, to insure better control over the handling of foreign complaints, the Secretary of Agriculture should make FAS responsible for coordinating the handling of all foreign complaints (including those involving short weights) and for insuring that investigations are made and timely responses are sent

Internal regulations and procedures for handling foreign complaints were quite limited. FAS had general regulations on handling complaints about the quality of all agricultural commodities marketed abroad but had none on handling weight complaints. AMS had no written regulations or procedures for dealing with foreign complaints. AMS officials told us, however, that they were developing written procedures for handling complaints about grain quality.

FAS's regulations instructed the attachés that, if complaints were considered serious, they were to make documented investigations and report their findings directly to FAS headquarters. The regulations also required the attachés to forward pertinent information—includ-

ing the specific nature of the complaint, the type of commodity involved, the quantity shipped and the quantity involved in the complaint, the name of the vessel in which the commodity was shipped and/or transshipped, the origin port and date of shipment, and the destination port and date of arrival—and samples of the commodity, with a description of who took the samples, how they were taken, and how they were reduced in size. The regulations specified that destination samples be taken by a qualified impartial party but did not specify how the samples were to be taken. In practice, the attachés typically forwarded to FAS headquarters only the information provided by the foreign complainant, and this information was frequently much less than specified in the FAS regulations.

FAS officials said they were developing a standard form to be used by foreign buyers in reporting complaints about grain quality. They said AMS had reviewed the form and had agreed that it would assist in handling foreign complaints.

FAS headquarters forwarded the information it received from its attachés on complaints about quality to AMS's Grain Division for technical review. Although the Grain Division had no written procedures for handling foreign complaints, the Division's Board of Appeals and Review usually analyzed the official file samples which were used in the original inspections if complaints were received within the 90-day sample retention period. It also analyzed any destination samples provided by the foreign buyers. The Division's Grain Inspection Branch reviewed the ship loading logs, sample tickets, inspection certificates, and official file sample analysis results to determine if the grain was correctly graded and certified at the time of loading with respect to the factors involved in the complaints. The Grain Inspection Branch generally prepared a response to FAS, which described the results of the review and analyses. FAS then prepared a response to the attaché and the attaché responded to the foreign buyer.

On complaints about short weights, AMS can do very little to assist foreign buyers in resolving disputes with U.S. exporters, because it has no responsibility for supervising or controlling the weighing of export grain. In responding to a short-weight complaint, an AMS official told FAS that, if the export elevator involved had been licensed under the U.S. Warehouse Act, AMS's only responsibility would have involved the fact that it had licensed the weigher under the act. He added that (1) AMS was not able to determine the accuracy of the weight of any particular shipment, (2) there was no appeal system under the act, and (3) settlement was between the buyer and seller and might ultimately have to be settled in a court of law.

Need for correction of inspection certificates found to be in error

Of considerable importance in the present handling of foreign complaints is the fact that AMS does not change original inspection certificates even if they are determined to be in error. This typically preempts the likelihood of any redress by the buyers in the courts of law or before arbitration boards. AMS contends that it has no authority to change original inspection certificates under the Grain Standards Act or its present regulations, except in the case of appeal inspections.

Moreover, under present regulations (7 CFR 26.46(d)), the appeal inspection process generally is not available to a foreign buyer unless he appeals before the inspection in question—that is, before the grain

is loaded—when he would not know whether he had a problem with the grain quality. The regulations provide, however, that the AMS field office may, upon written request by the applicant and the respondents (generally the exporter), waive the requirement that an appeal inspection be requested before the inspection in question if a representative file sample is available. At present sublot file samples for export grain are retained for 30 days, and composite file samples are retained for 90 days.

In actual practice, USDA does not treat a foreign complaint about grain quality as a request for an appeal inspection. Also, foreign buyers very seldom request an appeal inspection after they receive a grain shipment and decide they have a problem with the quality, possibly because the regulations tend to discourage such requests. AMS officials could not recall any such appeal requests but said that they had, on occasion, advised the foreign buyer and the exporter that the original inspection certificate was incorrect.

One case which we reviewed illustrates how the present system works. It involved a foreign buyer who complained to USDA about a shipment of 10,000 tons of wheat which had been purchased as number 3 *hard* amber durum. The buyer claimed that he had lost about $60,000 because the wheat received was number 3 amber durum—a lower priced class of wheat. When AMS investigated the complaint, it found that the shipment was in fact number 3 amber durum instead of number 3 *hard* amber durum as shown on the original inspection certificate. The attaché furnished the foreign buyer the results of the AMS investigation, but AMS did not correct the original inspection certificate.

The buyer took the case before a foreign arbitration board and court of law. Both ruled that the U.S. exporter was not liable for compensating the buyer for the difference in the price of the wheat purchased and the lower priced wheat received. The ruling was based on the facts that (1) the contract provided that the inspection certificate issued at the time of loading would be the final determinant of grain quality and (2) the certificate's being in error was not material unless the certificate was corrected or superseded.

We recognize there are problems with retaining representative file samples of export grain because the grain's condition may change over time. Possibly research is needed to determine how long such samples can be retained without losing their integrity. Nevertheless, we believe AMS should correct, through the appeal process or otherwise, an original inspection certificate when it finds that the original certificate was in error and when there is reasonable assurance that the file sample represents the quality at the time of the original inspection with respect to the factor(s) in question. On the basis of our discussions with AMS officials, however, we agree that, before such action is taken, further study is needed to insure that the issuance of corrected certificates would not place U.S. exporters in an unduly disadvantageous position.

Need for more timely responses

AMS had not established goals for promptly handling and responding to foreign complaints. Also, FAS had not established followup procedures to insure prompt responses to all complaints.

We reviewed the timeliness of USDA's handling of 31 complaints received during fiscal years 1973–75. The complaints were filed by buyers in the nine countries we visited and involved 63 shipments of wheat, corn, soybeans, and sorghum. As of October 31, 1975, 24 of the 31 complaints had been processed. An average of 166 calendar days had elapsed between the dates of the complaints and the dates of the responses. The elapsed time ranged from 86 to 343 days. For the seven complaints still being processed, the time from the date of the complaints to October 31, 1975, ranged from 123 to 238 days.

Most of the processing time was taken by AMS to investigate the complaints and prepare responses. An average of 108 days elapsed between the dates FAS forwarded the complaints to AMS and the dates of AMS's responses. A Grain Inspection Branch official told us the delay in processing complaints was due to other demands on the staff's time.

In addition, FAS files indicated that responses to 4 of the 24 processed complaints had not been sent to the foreign buyers, although AMS had furnished its responses to FAS. In two cases, there was no evidence that FAS had forwarded the responses to the agricultural attachés. One of these complaints had been received over 2 years ago. In the other two cases, FAS responded to the attachés involved but there was no evidence that they had responded to the buyers.

Recent Office of Audit Report on USDA's Handling of Foreign Complaints

In January 1976 USDA's Office of Audit furnished us a copy of a report on its review of USDA's handling of foreign complaints. The report identified weaknesses in USDA's handling of foreign complaints similar to those identified during our review and discussed in this chapter. The report contained a number of recommendations to the USDA agencies involved for improving the handling of foreign complaints. The agencies generally agreed with the recommendations and indicated they planned to take positive action to implement them.

Conclusions

Our interviews in nine countries have shown that many foreign customers for U.S. grain are dissatisfied. They do not believe they always get full measure in terms of quality and weight for the grain they purchase. This has led to increasing pressures to turn whenever possible to other countries as supply sources or to stop buying U.S. grain altogether. Various evidence suggests that quality and weight problems have existed for many years, but have become more critical in recent years. USDA has not been sufficiently sensitive to the complaints of foreign customers and has offered little assistance to them. The resulting cost in terms of diminished foreign sales and other effects is not calculable.

The general realinement of responsibilities and strengthening of procedures for administering the national grain inspection system, which we are recommending in chapter II (see pp. 44 to 45), should go a long way toward alleviating the types of problems foreign customers have experienced. A soundly conceived and well-administered national

grain inspection system, the interworkings of which are open to observation by foreign buyers, should assist materially in promoting foreign sales and establishing confidence in the quality, consistency, and reliability of U.S. grain.

Recognizing that the system may not be perfect and that problems and complaints may arise from time to time, appropriate means should be available to investigate complaints, establish the facts, and correct any erroneous inspection certificates. At present, foreign customers have no feasible means to obtain redress in the case of valid complaints, unless such redress is offered voluntarily by the sellers.

USDA's role in dealing with foreign complaints has been generally inadequate. Its agricultural attaches, in most cases, were not fully aware of the extent of foreign buyers' problems. They said they lacked authority, expertise, or resources for investigating complaints. FAS officials told us they had instructed the attaches to not get legally involved in investigating complaints. They were simply to obtain the particulars of a complaint and forward the information to FAS headquarters.

Also procedures at USDA headquarters for handling foreign complaints were poorly defined and generally ineffectual. No central coordinating agency had been designated within USDA, for example, to insure that all complaints were recorded, investigated, and responded to and that the combined results were analyzed for possible use in reexamining inspection procedures.

Recommendations to the Secretary of Agriculture

We recommend that the Secretary of Agriculture

—direct AMS to (1) determine the possible impact, particularly on U.S. exporters, of correcting, either through the appeal process or otherwise, original inspection certificates found to be in error and (2) seek legislative authority, if necessary, to develop and implement procedures for making such corrections;

—require ARS, in coordination with AMS, to conduct research to identify the type and extent of damage which can be expected to occur when handling and transporting grain, particularly export grain, and instruct FAS to notify foreign buyers what they generally can expect in this regard;

—designate FAS as the central coordinating agency in USDA for handling foreign complaints and direct it to strengthen its regulations to require careful evaluation of each foreign complaint received and to make, or have made, such review as is warranted to ascertain the pertinent facts;

—direct FAS, in coordination with AMS, to develop specific regulations or instructions on information the attaches should obtain from foreign buyers who file complaints about short weights;

—direct FAS to reemphasize to the attaches the importance of obtaining information from foreign buyers about problems with the quality and weights of U.S. grain shipments and forwarding it to FAS headquarters on a regular basis; and

—direct AMS to develop written guidelines, procedures, and goals for promptly investigating and responding to foreign complaints and to develop and implement effective procedures for acting on

the results of investigative findings when they reflect on the integrity of the national grain inspection system.

USDA Comments and Our Evaluation

USDA concurred in our recommendations and outlined actions it was taking or would take to implement them. (See app. VII.) It agreed on the need for a study of the impact on U.S. exporters of a change in the appeal process when original inspection certificates are found to be in error and said that, if the study indicated the need for a change, it would develop and implement appropriate procedures for making such corrections. USDA also said that immediate consideration would be given to intensifying research on damage in handling and transporting grain, especially in export channels.

USDA agreed that FAS should be given responsibility for coordinating all activities related to handling foreign complaints. It said the agencies involved would be instructed to forward all quality and weight complaints to FAS for processing. Also, USDA said

—FAS had developed a standard form for use by foreign buyers in reporting quality and weight complaints, which would provide detailed information on the circumstances involved in each complaint;

—FAS was rewriting its regulations to more clearly define the attaches' role in handling foreign complaints about grain quality, including a provision for using the complaint form;

—specific guidelines would be provided to the attaches outlining the proper handling of quality and weight complaints;

—attaches would be provided background information on sampling, inspection, weighing, and transportation procedures; and

—arrangements were being made for AMS to brief new attaches and assistant attaches, before overseas assignments, on the importance of reporting complaints.

USDA said that AMS was developing written guidelines, procedures, and timeframes for investigating and responding to foreign complaints and would develop and implement effective procedures for taking action on the findings when they reflect on the integrity of the national grain inspection system. Also, AMS will formalize, on an interim basis, actions to be taken on weight complaints pending the conclusion of ongoing investigations and the expansion of USDA's role in weighing export grain.

We believe that implementation of the actions outlined by USDA will improve its handling of foreign complaints and demonstrate to foreign buyers that USDA will give their complaints serious consideration.

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CHAPTER 4

OBSERVATIONS ON THE GRAIN STANDARDS

Many of the persons we interviewed or sent questionnaires to regarding the official U.S. grain standards commented that the present standards could be further refined or amended to make them more useful. They pointed out that the standards do not include certain important grain quality indicators but include other indicators which currently are relatively unimportant or unreliable. According to one authority, the standards were developed and amended over the years primarily to meet the minimal needs of grain merchandisers, and the needs of growers and food processors were not adequately considered.

Questionnaires inviting comments on the grain standards were sent to 560 farmers in Iowa and 500 farmers in each of five other States—Illinois, Kansas, Oklahoma, North Dakota, and Nebraska—and to 2,195 country elevators in Illinois, Iowa, Kansas, and North Dakota. We interviewed 22 grain processors and merchandisers in the United States, including corn and soybean processors, wheat flour millers, feed producers, and grain exporting companies, and solicited the views of a number of producer, trade, and State organizations and university and USDA researchers involved in grain standards work. Also, in our visits to 9 foreign countries, we questioned 68 grain buyers about their views on the U.S. grain standards.

Certain respondents said greater emphasis was needed on developing standards which (1) emphasize qualities relating to a grain's end use, such as protein in wheat and oil and protein in soybeans, and (2) provide incentives to farmers to produce higher quality grain. Some recognized, however, that before certain refinements or changes can be made to the grain standards, new equipment or inspection techniques must be developed to readily ascertain grade in accordance with the proposed standards.

Several respondents were critical of quality factors included in the standards, such as gradations of color for particular classes of wheat and degree of damage, which must be subjectively judged by grain inspectors. Most grain merchandisers and processors agreed that the reliability and accuracy of such subjective determinations were questionable. The use of subjectively determined grading factors can result in disputes between buyers and sellers when separate tests are made at origin and destination points. It appears to us that there is no easy solution to this type of problem.

A majority of farmers and country elevator operators responding to our questionnaire indicated they favored expanding the present standards to include additional quality indicators for such factors as stress

cracks, brittleness, protein content, starch, and mold. They gave much less indication that they wanted to see any of the existing quality indicators dispensed with.

AMS officials have asserted that planned research program on the grain standards and inspection procedures is needed. Needs for such research were also expressed by many members of the grain industry and by several agricultural experts. AMS officials said that only limited research has been done in these areas since the Grain Standards Act was first passed in 1916. They said that, as a result, the standards do not fully reflect the quality or condition of grain and encourage unacceptable blending of low-quality grain or foreign material with good-quality grain. They also said inspection procedures are, in certain instances, subjective, time consuming and subject to error.

Some interviewees said ARS, especially the U.S. Grain Marketing Research Center at Manhattan, Kansas, had not done as much research on grain standards and inspection procedures as desired. One of the main functions of the center, which became operational in 1971, was to conduct research on (1) grain quality in marketing channels and (2) developing tests for factors in the grain standards as well as for other important factors which reflect grain quality but are not in the standards. According to the center's annual report for fiscal year 1975, only limited work was conducted in the grain grades and standards areas because of budget limitations. An ARS official said about 15 percent of the center's staff time had been directly devoted to such research.

AMS officials said AMS had, in the past, provided ARS with lists of research needs in the areas of grain standards and inspection procedures. ARS officials said ARS had not always assigned the same priority to them as AMS and had devoted its research efforts to areas it believed were of high priority. One ARS official said the AMS lists were long, general, and frequently modified. He suggested that the lists be narrowed down to a limited number of well-specified requests.

Dr. Lowell D. Hill, Professor of Agricultural Economics, University of Illinois, in a study prepared for us, said it was essential that those quality factors having economic importance to major domestic and foreign users be identified in the standards, that improved methods and equipment be developed for measuring these factors, and that research be conducted to determine the economic effect of alternative grading systems and quality factors. He said the agency assigned to administer the grades and standards would need to carry out or at least coordinate such research.

Important Quality Factors Not Considered in the Present Grain Standards

The grain standards should provide a basis for describing important quality characteristics of specific lots of grain in a manner which best serves the needs of both buyers and sellers. The following are some frequently cited quality factors which our respondents considered to be important but which are not included in the present grain standards.

SUSCEPTIBILITY TO BREAKAGE (CORN)

According to many processors and merchandisers, a measurement of corn's susceptibility to breakage is an important indicator of corn quality and should be incorporated into the grain standards.

Before being used, corn may be handled many times. In such handling, deterioration of quality—corn kernel breakage and damage—can occur. Broken kernels are more susceptible to mold and infestation and cannot be readily used by some corn processors.

Various harvesting, drying, and handling techniques, if not properly managed, can increase corn breakage, according to corn processors. Harvesting at high moisture content, field shelling, and artificial drying can all increase susceptibility to breakage. There is little incentive at present, however, to reduce this susceptibility because the existing grain standards do not provide for classifying corn for its susceptibility to breakage. Large differences in corn's susceptibility to breakage can occur without accompanying adjustments in the corn's grade or price.

One indicator of corn's susceptibility to breakage is stress cracks. Stress cracks are fissures or hairline fractures believed to be caused by fast, high-temperature drying of high-moisture corn. Some corn processors check for stress cracks before purchasing. Many of the corn processors and merchandisers we interviewed suggested that a measurement of stress cracks be included in the official grain standards.

The most frequent complaint from foreign respondents involved excessive corn breakage. Because of extensive handling, corn-quality deterioration tends to be critical with exported corn. Since quality deterioration is more likely if the corn is highly susceptible to breakage, reduction of this susceptibility could improve the quality of U.S. export corn shipments. Some recognition of this factor in the grain standards might help provide the incentives needed to improve harvesting, drying, and handling techniques.

An AMS official said he believed a measurement of corn's susceptibility to breakage was desirable, provided a test to consistently and reliably determine it can be developed. At present, such a test is not available. ARS has done some research in this area. AMS officials said more such research is needed.

PROTEIN CONTENT (WHEAT)

Some wheat processors, merchandisers, and others affiliated with wheat marketing said that, in their view, the grain standards should include protein content as a factor in grading wheat or provide for uniform protein content testing. Protein content is an important general indicator of the milling and baking qualities of hard wheat. It is also rated as one of the most important quality factors used by millers to select and purchase certain wheat lots.

Until recently, however, a procedure has not been available to rapidly determine wheat's protein content. According to AMS officials, equipment to rapidly measure protein (and oil and moisture) has been developed recently and placed in operation at some grain elevators and commercial grain-grading laboratories. They consider the equipment, for which ARS developed the basic technology, to be

generally workable at the country elevator and inland terminal levels but said additional testing and refinement of procedures were needed before the equipment could be approved for widespread use.

Many farmers, particularly those in winter wheat-producing areas, are not paid for the specific protein content of their wheat. There are two main reasons for this: (1) the volumes of wheat moving into the country elevators at harvest time are too large to permit the delay that would result from existing protein-testing methods and (2) many elevators do not have sufficient storage space to segregate wheat by small variations in protein content. Marketing specialists and others told us that, since there is no price differential between high- and low-protein wheat delivered to the same location, there is little incentive for farmers to select and grow wheat varieties yielding more protein.

Country elevators, on the other hand, which market wheat on the basis of protein content, could benefit from uniform protein-content testing and thereby reduce their marketing problems. Some country elevators obtain independent protein-content tests on shipments to terminal markets by submitting samples to private or State laboratories. Prices paid to country elevators for delivered wheat, however, are usually based on protein determinations made at destinations.

Because a rapid protein-testing method has not been available and because sampling practices are not uniform, differences in determinations between country and terminal markets have occurred. A number of country elevator operators have complained about inequities in sales contract settlements of protein content. Also, some foreign buyers have complained of receiving wheat shipments with low protein content. Most of the foreign wheat buyers we questioned said it was very important to include provisions for measuring protein content in the grain standards.

According to AMS officials, recognition of specific protein content in payments to farmers is a desirable goal. They said that, when a rapid, practical, and accurate protein-testing method becomes operational on a national basis, they will propose incorporation of protein content in the grain standards but not as a grade-determining factor.

OIL AND PROTEIN CONTENT (SOYBEANS)

Although oil and protein content are considered highly important quality indicators for soybeans, the present grain standards make no reference to them. AMS officials told us that, when a rapid, practical, and accurate method to measure soybean oil and protein content becomes operational on a national basis and when such quality factors meet market acceptance, these factors may replace much of what is now included in the soybean standards.

Before purchasing soybeans, major processing companies survey particular geographical areas during the harvest season and take samples to determine oil and protein content. Purchasing is thereafter directed toward those areas which produce soybeans having the most desirable oil and protein content. Farmers from those areas may receive somewhat higher prices due to this competitive process, but according to officials of a producer association and AMS, individual farmers generally lack incentive to improve the quality or increase the quantity of soybean oil or protein because they are not paid on the basis of the specific oil or protein content. The producer association

officials also said that some foreign buyers had expressed concern about the decreasing protein content of U.S. soybean exports.

Quality Factors in the Present Standards Which Many Users Question

Our respondents made the following general comments on certain quality factors included in the present standards.

TEST WEIGHT PER BUSHEL (CORN)

The validity and usefulness of the grading factor "minimum test weight per bushel" for corn were questioned by a number of people in or affiliated with corn marketing. Test weight per bushel is a measurement of the weight of corn required to fill a bushel measure of 32 quarts. Farmers delivering corn with test weights below 54 pounds normally receive price penalties—test-weight discounts. The use of test weight as a discount factor can be economically important. For example, in 1974, Illinois farm income was reduced an estimated $12 million by discounts for low-test-weight corn.

Researchers have found that no large nutritional differences exist between corn with test weights of 52 and 59 pounds per bushel and have raised doubts about the validity of the test-weight factor. University of Minnesota researchers have questioned whether the discounts themselves are reasonable and whether they penalize low-test-weight corn more or less than is warranted from a nutritional and energy value standpoint.

A relationship exists between corn test weight and moisture content which, if ignored, can result in inappropriate discounts for low-test-weight, high-moisture corn. To compare different lots of corn, we were advised, test weights should be adjusted to a common moisture basis or taken at a comparable moisture content. If they are not, the test-weight discount can become an additional penalty against high moisture, which is also discounted in the market.

Some corn processors avoid purchasing low-test-weight corn because lower test weights, particularly under 52 pounds a bushel, may reduce the yields of various corn products. Some processors, however, consider test weight an unimportant factor for determining quality. Corn damage factors and cleanliness were sometimes considered to be more important. Some processors cited a preference for purchasing corn on the basis of qualities relating to corn products, such as starch, protein, or oil content, rather than test weight, provided an accurate and fast test can be developed.

AMS officials said they recognized the inadequacies of test weight as a grading factor and agreed that it was immaterial for indicating nutritional values. They plan to remove test weight and moisture as grading factors for corn but will continue to require disclosure of these measures on inspection certificates.

BROKEN CORN AND FOREIGN MATERIAL

The grading factor BCFM does not provide enough relevant information to some users since it does not distinguish between (1) broken corn, which is frequently usable, and (2) foreign material, such as

dirt, stones, and other types of grain, which may not be usable. The BCFM factor measures the amount of corn kernels, pieces of kernels, and all other matter which fall through a sieve prescribed in the grain standards. It also includes distinguishable matter other than corn which does not pass through the sieve. Refining the BCFM factor has been suggested for some time by processors, foreign buyers, and researchers. Some favor separating BCFM into (1) broken corn and (2) foreign material.

According to one AMS official, another problem with the current test for BCFM is that, since the size of the sieve hole does not allow larger broken or cracked kernels to pass through, these kernels are not recognized as BCFM and affect the grade only if they are otherwise damaged, such as molded, sprouted, infested, or diseased. However, these larger broken or cracked kernels may be just as susceptible to disease, insect attacks, or other damage as smaller broken kernels.

Some processors we interviewed had devised or specified their own BCFM standards for corn purchases. For example, one used a sieve with larger holes than those prescribed in the present standards. This processor found that the smaller, standard-size sieve allowed too many larger broken or cracked kernels more appropriately classified as BCFM to remain in the corn. An AMS official said AMS was considering revising the grain standards to recognize the difference between broken corn and foreign material.

CHARACTERISTICS OF U.S. NUMBER 1 CORN

The need for maintaining the category "U.S. number 1 corn" in the present form seems unrealistic, according to comments we received. Respondents pointed out that corn with the characteristics specified in the grain standards as number 1 is not traded extensively; the moisture content specified for number 1 corn could indicate overdrying, making product recovery more difficult; and the higher test weight per bushel for the number 1 grade is not necessarily an indicator of higher product yields.

AMS officials said they have considered revising the corn categories but have not yet developed any proposals.

TEST WEIGHT AND SPLITS (SOYBEANS)

Most soybean processors and merchandisers interviewed indicated that the present soybean-grading factors, "test weight" and "splits," had little impact on soybean quality. Soybean test weight is defined similarly to corn test weight and is a measure of density. Soybean splits are otherwise undamaged soybeans with a portion missing.

A number of processors and merchandisers told us that test weight is not a good indicator of product yields. An official of a major producer organization said most processors get about the same oil or protein content from soybeans having test weights of from 52 to 60 pounds. The incidence of splits, we were advised, would become important only if soybeans were stored for a long period, since oil might become rancid. AMS officials said that they agreed that test weight and splits are relatively unimportant as soybean quality indicators. They intend to remove test weight as a grading factor, although it will continue to be shown on inspection certificates.

Conclusions

Although we did not make a comprehensive analysis of the present grain standards, our inquiries showed that there are significant problems and questions which warrant further analysis and attention by USDA. USDA has not been sufficiently concerned about the need for adequately directed and coordinated research on the grain standards by its several agencies. Research is needed to develop more sophisticated grain-testing equipment and to provide a sound basis for further refining and amending the standards to improve their usefulness to the entire grain-marketing chain, from the farm level to the final consumer.

Recommendation to the Secretary of Agriculture

We recommend that the Secretary of Agriculture intensify research and development on the U.S. grain standards and provide for greater coordination and cooperation among the USDA agencies with research and marketing responsibilities.

USDA Comments

USDA concurred in the need for intensified research and development in further updating U.S. grain standards. (See app. VII.) It said AMS and ARS would first jointly design and cost out priority research proposals for use in requesting adequate personnel and funds and, with a higher level of resources, grain standards could be systematically evaluated and highest priority research activities could be conducted in tandem to expedite the needed changes.

CHAPTER 5

SCOPE OF REVIEW

Our evaluation of the national grain inspection system included a review of legislation, regulations, and instructions and various reports, studies, articles, and financial and operating records pertaining to grain standards and the grain inspection system. At the Federal level, we held discussions with

—present and former AMS headquarters and field office officials;
—agricultural attachés and other FAS officials;
—ARS officials in Washington, D.C.; Hyattsville, Maryland; and Manhattan, Kansas;
—other USDA officials, including those of the Offices of Audit and Investigation; and
—Department of Justice officials.

We visited 13 AMS field offices and a number of designated inspection agencies and inspection points, as follows, where we observed grain handling and inspection operations, reviewed records, and conducted interviews.

AMS field office	Designated inspection agencies	Number of inspection points
Beaumont, Tex	1	2
Des Moines, Iowa	3	10
Duluth, Minn	2	8
Grand Forks, N. Dak	4	0
Houston, Tex	2	5
Minneapolis, Minn	1	3
Montreal, Canada	0	0
New Orleans, La	5	8
Peoria, Ill	4	7
Philadelphia, Pa	1	1
Portland, Oreg	2	5
St. Louis, Mo	3	3
Seattle, Wash	1	3
Total	[1] 29	55

[1] Includes duplicate visits to 2 designated inspection agencies. Representatives of the Minnesota inspection agency were contacted during visits to the Duluth and Minneapolis AMS field offices. Representatives of the Washington inspection agency were contacted during visits to the Seattle and Portland AMS field offices.

We also visited other agencies responsible for grain-weighing activities.

We interviewed or mailed questionnaires to various persons knowledgeable of the grain trade and grain inspection in the United States and in 10 foreign countries: Canada, India, Israel, Italy, Japan, Korea, the Netherlands, Spain, the United Kingdom, and West Germany. We obtained their views on matters relating to inspection and

grain standards. The number of persons interviewed or contacted was as follows:

	Number mailed	Replies received	Number
Mail questionnaires:			
Officials of States with grain inspection agencies	23	20	
Country elevator operators	2,195	890	
Farmers	3,060	1,486	
Personal interviews:			
Domestic:			
Country elevator operators			48
Grain processors and merchandisers			22
Educators and researchers			12
Trade association representatives			3
State agency officials			4
Foreign:			
Grain buyers			68
Trade association representatives			10
Arbitration board representatives			2
Government grain inspection agency officials			3

APPENDIXES

APPENDIX I

U.S. GRAIN PRODUCTION, 1974 CROP [1]

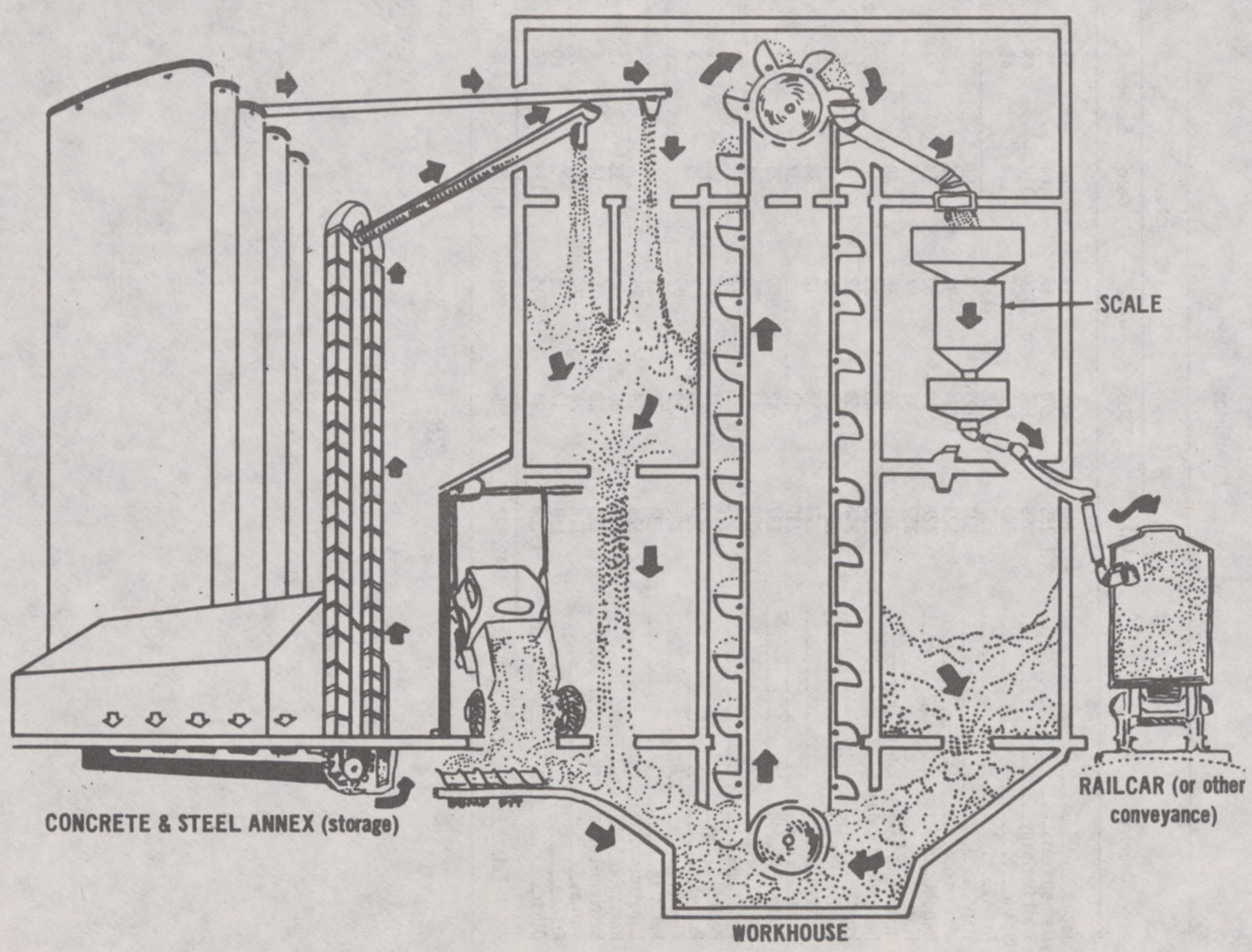
[In millions]

State	Value	Bushels				
		Wheat	Corn	Soybeans	Other	Total
Illinois	$4,117	54	831	208	28	1,121
Iowa	4,053	1	948	199	89	1,237
Minnesota	2,167	81	360	85	132	658
Kansas	2,141	319	131	21	142	613
Indiana	2,067	50	388	98	13	549
Nebraska	1,841	99	381	29	92	601
Ohio	1,640	65	266	80	30	441
Texas	1,381	53	74	8	321	456
North Dakota	1,322	205	7	3	104	319
Missouri	1,310	38	149	96	26	309
South Dakota	725	58	77	8	104	247
Oklahoma	656	134	8	5	31	178
Arkansas	653	10	1	86	11	108
Wisconsin	621	3	154	4	86	247
Montana	604	120	1	----------	46	167
Michigan	578	38	110	13	21	182
Washington	571	122	4	----------	18	144
Colorado	448	68	46	----------	21	135
Idaho	345	62	2	----------	35	99
Louisiana	341	1	4	45	1	51
Total, 20 States	27,581	1,581	3,942	988	1,351	7,862
Other States	5,297	212	709	245	238	1,404
Total, United States	32,878	1,793	4,651	1,233	1,589	9,266

[1] During the 1974 growing season, a combination of adverse weather conditions in major grain-growing areas caused widespread damage to U.S. grain crops.

ILLUSTRATION OF ELEVATOR RECEIVING AND STORING GRAIN

ILLUSTRATION OF ELEVATOR
LOADING OUT GRAIN



APPENDIX IV

GRAIN EXPORTS BY COUNTRY OF ORIGINAL DESTINATION, FISCAL YEAR 1975

[In millions]

Country	Value	Bushels				
		Total	Wheat	Corn	Soybeans	Other
Japan	$2,208	484	113	200	87	84
Netherlands	1,236	270	17	164	75	14
West Germany	859	168	7	110	48	3
Spain	680	152	1	104	46	1
India	657	158	158			
Italy	571	127	9	90	27	1
Mexico	524	124	31	56	5	32
Republic of Korea	428	90	63	14	1	12
Iran	357	73	64	5		4
Union of Soviet Socialist Republics	355	83	36	46		1
Republic of China	259	45	13	10	22	
Israel	245	59	12	8	13	26
Peoples Republic of China	224	61	55	1	5	
Portugal	224	55	12	38	2	3
Canada	217	52		37	14	1
United Kingdom	187	42	9	25	7	1
Egypt	186	43	25	18		
Venezuela	165	35	18		2	15
Peru	155	37	23	13	1	
Poland	152	40	2	25	5	8
Algeria	135	22	22			
Pakistan	134	31	31			
Bangladesh	128	29	29			
Romania	127	36		33	1	2
Belgium-Luxembourg	125	28	5	11	4	8
Turkey	116	24	24			
France	110	17	5	2	10	
Other	1,758	384	215	112	30	27
Total	12,522	2,769	999	1,122	405	243

Appendix V

LEGISLATIVE HISTORY OF THE UNITED STATES GRAIN STANDARDS AND WAREHOUSE ACTS

Before the 1916 enactment of the United States Grain Standards and Warehouse Acts, the grading, weighing, and warehousing of grain were regulated exclusively by the States. With each State enacting separate legislation, a patchwork of standards and regulations developed. There was no uniform, nationwide system for inspecting, grading, weighing, and storing grain. Thus, in 1916, the Congress enacted the two acts to provide greater uniformity and standardization in inspecting, grading, weighing, and warehousing grain stored for or traveling in interstate and foreign commerce. The acts addressed different stages or aspects of the grain-marketing system and were designed to remedy different evils. (See Act of August 11, 1916, c. 313, pts. B and C, 39 Stat. 482, 486.)

Inspecting and Grading

The Grain Standards Act was intended to eliminate two major problems that plagued the pre-1916 grain inspection and grading system. First, there was a lack of uniformity in grading grains at various terminal markets. The injustice that resulted from the lack of uniform grain standards was described in several Senate committee reports issued prior to passage of the act:

> The grain raised on a farm in Iowa may be shipped to three different points—Minneapolis, Chicago, and Kansas City. The rules of grading in Minneapolis for a certain grade of grain would require that it weigh a given number of pounds per measured bushel, contain a certain percentage of a particular kind of grain, possess a certain color, etc. The Chicago rule for determining the same grade will differ considerably from the Minneapolis standard, and the Kansas City standard will be different from either of the others. Now, as the price of grain is dependent solely upon the grade it receives, this same grain would have three different values placed upon it at these three different terminals. These diverse systems open up an immense field for manipulation in grades, which always works to the detriment of the producer. Because of this lack of uniformity one shipment of grain may receive as many different grades as there are different markets through which it passes. (S. Rept. 216, 63d Cong., 2d sess. 2 (1914).)

Second, before 1916, the system of inspecting and grading grain, regardless of whether it was operated under State laws or board of

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trade rules, was firmly controlled by boards of trade. The boards of trade, in turn, were dominated by puchasers at the major terminal markets. As a result, these purchasers were able to manipulate the grain inspection and grading system to their own financial advantage.

More specifically, on the basis of various public and private commissions' reports, there was substantial evidence that the rules for handling grain, including inspection and grading, favored the terminal market purchasers. The appointment of inspectors, the fixing of grades, and appeals from inspectors' decisions generally benefited these purchasers. In addition, it appeared that the boards of trade and purchasers at various terminal markets regularly engaged in a variety of unfair business practices, including (1) operating a system of "rigid and easy" inspection, with rigid inspection of grain entering the terminal markets and lax inspection leaving those markets, (2) falsely certifying the grade of grain, and (3) mixing and adulterating grain. (See S. Rept. 216, *supra*, 2–4; 53 Cong. Rec. 7043–46 (1916) (remarks of Representative Moss).)

In short, due to the lack of uniform grain standards and the domination of the grain inspection and grading system by boards of trade and purchasers at the terminal markets, farmers and independent shippers were compelled to accept lower grades and less money for their grain. The ultimate foreign and domestic purchasers, on the other hand, regularly received a poor quality of grain under inspection certificates indicating higher grades. Consequently, the U.S. grain trade suffered, and a Federal grain standards law was necessary to establish and protect the integrity of the grain inspection and grading system.

The Congress sought to eliminate the corruption and unfair business dealings that characterized the pre-1916 grain inspection and grading system by (1) establishing an official inspection and certification system for grain and other agricultural products, (2) requiring official inspection and certification of certain shipments of grain and other products, (3) making available the services of the official inspection and certification system to parties with an interest in other types of shipments, (4) prohibiting certain conflicts of interest on the part of official inspection personnel, (5) authorizing the Secretary of Agriculture to use specific administrative sanctions to prevent abuses of the official inspection and certification system, and (6) defining specific prohibited acts and criminal penalties.

As originally enacted, the Grain Standards Act required official inspection and certification of all grain shipped, or delivered for shipment, in interstate or foreign commerce for sale by grade. (Act of August 11, 1916, c. 313, § 4, 39 Stat. 483.) In 1968, however, the act was amended to require official inspection and certification only for grain exports, thereby removing the requirement for official inspection and certification of all interstate shipments. (Pub. L. 90–487, § 5, 82 Stat. 763; S. Rept. 1372, 90th Cong., 2d sess. 2, 9 (1968), H. Rept. 1344, 90th Cong., 2d sess. 2, 24 (1968).) Under the law today, an interested party may request official inspection and certification for any grain in the United States and for U.S. grain in Canadian ports. (7 U.S.C. 79(b) (1970).) It is no longer mandatory, however, that interstate shipments of grain be inspected and graded under the official inspection and certification system established in the act and the implementing regulations.

Weighing and Storage

Before 1916, the U.S. grain trade also was adversely affected by a lack of adequate and uniform regulations for weighing and storing grain. A House committee report accompanying an earlier version of a Federal warehouse act described the basic weaknesses of the State-regulated warehousing system then in existence.

> An essential weakness of our present system is found in a lack of adequate storage facilities, and in the further fact that there is no proper relationship between it and the banking system of the country. Both these defects must be remedied. A new system of banking is being organized which, for the first time, recognizes agricultural products as a proper basis for credit. It is therefore of the highest importance that in making these important changes in our warehouse and marketing systems consideration should be had to bring these agencies into the most favorable contact to the end that the producer may obtain the greatest benefit from each.
>
> Under provisions of this bill uniform warehouse receipts will be issued on staple and nonperishable agricultural products stored in governmentally licensed warehouses, protected by ample bond, graded, weighed, and certified by governmentally licensed inspectors.
>
> A warehouse receipt to be of the fullest strength as collateral and as readily negotiable as possible in the financial markets of the country must be such a receipt as is of undoubted integrity. Such a system would create a form of security good beyond all doubt and one that would command the confidence of the commercial and investment banking world. (H. Rept. 1135, 63d Cong., 2d sess. 4 (1914).)

As the House report indicates, the Warehouse Act originally was enacted for two purposes, one regulatory and one nonregulatory. The regulatory purpose was to improve the storage facilities in which grain and other agricultural products were stored. The act

—authorizes the Secretary of Agriculture to investigate, license, classify, and prescribe duties for warehouses and warehousemen;

—authorizes the licensing of competent persons to inspect, sample, or classify agricultural products stored in a licensed warehouse; and

—establishes standards for the conduct of a warehouse.

The Secretary is also authorized to cooperate with State officials charged with enforcing State warehouse laws. However, warehouses licensed under the Warehouse Act are subject to the exclusive control of the act. Until 1931, Federal warehouse legislation was subservient to State regulation. See *Rice* v. *Santa Fe Elevator Corp.*, 331 U.S. 218 (1947).)

The act's other purpose, and probably its primary purpose, was to provide a mechanism through which farmers would be able to obtain short-term credit. As explained on the House floor, it was believed that the integrity and uniformity of warehouse receipts resulting from a Federal warehouse law would increase the availability of farm credit by making the receipts more readily negotiable.

It is a well-known principle in economics that standardized, uniform security always is most negotiable and always commands the lowest rate of interest. A Federal warehouse law insures beyond doubt uniformity in character of warehouses, uniformity in methods of inspection, uniformity in methods of weighing and grading, uniformity in the standard of measurement—grade—and above all, and more important than all, such a system provides for a uniform warehouse receipt, or credit instrument, for the same product in every State in the Union. Each receipt, whether issued from a warehouse in Texas [sic] or in South Carolina or a like product will carry on its face the same story and will be issued under the same rules and regulations and protected by the same law. Such a receipt must be of the highest collateral value and it is my belief that it would flow at once into the general system of securities and become realizable upon at any time in the general market of securities. (53 Cong. Rec. 5925 (1916) (remarks of Representative Lever).)

Regulatory Scheme—Then and Now

To achieve the purposes for which the Grain Standards and Warehouse Acts originally were enacted, the Congress did not adopt a system requiring direct Federal intervention in the grain-marketing system, although there was some support for that approach in the Congress. (See 53 Cong. Rec. 10506 (1916) (remarks of Senator Shafroth).) Instead, the Congress adopted a system of Federal supervision. The Secretary of Agriculture was authorized to prescribe standards and regulations governing the inspection, grading, and warehousing of grain and to issue licenses to employees of State or private agencies to implement those standards and regulations. Under the acts, Federal licensees were given the immediate responsibility for inspecting, grading, weighing, and storing grain, and the Secretary of Agriculture was authorized to promulgate standards and regulations and to act in a supervisory capacity as the licensing agency. (See 53 Cong. Rec. 7043–46, 10506 (1916) (remarks of Representative Moss and Senator Shafroth).)

Over the years, both acts have been amended on several occasions. In 1931, the Congress amended section 29 of the original Warehouse Act to guarantee the supremacy of Federal regulations over conflicting State regulations. (Act of March 2, 1931, c. 366, § 9, 46 Stat. 1465.) Moreover, in 1968, the Grain Standards Act was substantially revised. (Pub. L. 90–487, 82 Stat. 761.) Despite these amendments and revisions, however, the acts' basic regulatory approach has remained unchanged. Today, the Grain Standards and Warehouse Acts still provide for Federal licensing of employees of State or private grain inspection agencies and of warehouse operators, restricting the Federal Government to a supervisory role. (See hearings on S.J. Res. 88 before the Subcommittees on Foreign Agricultural Policy and on Agricultural Production, Marketing, and Stabilization of Prices, Senate Committee on Agriculture and Forestry, 90th Cong., 1st sess., pt. 1, at 12 (June 19, 1975) (testimony of J. Phil Campbell, Under Secretary, USDA).)

Appendix VI

DESCRIPTION OF CANADIAN GRAIN INSPECTION SYSTEM

Grain inspection in Canada is provided by the Canadian Grain Commission, an agency of the Canadian Government. The Commission is responsible for establishing grain grades and standards and for implementing a system for grading and weighing grain. The Commission's Grain Inspection Division employs about 450 persons and provides full-time inspection services at 15 locations and part-time services at 3 locations. Inspection services are also provided on request.

The Commission's Grain Weighing Division employs about 230 persons who supervise the weighing of all grain received at and shipped from terminal elevators except Government-owned elevators operated by Commission personnel. The Commission's Grain Research Laboratory Division, with 75 employees, is responsible for maintaining a laboratory for conducting applied and basic research in grain and matters relating to grain and grain products.

Applicants for inspection positions are selected for aptitude and must serve at least 1 year on probation as assistants. After 2 years of training as assistants, they become eligible to grade grain under close supervision. At this stage, they are examined on theory and practical grading procedures. A total of about 5 years of training is required before a candidate becomes officially qualified to grade grain. Staff-training programs are subsequently carried out, and inspectors are periodically tested on their proficiency to identify varieties of grain and on other general knowledge. Once an inspector is officially qualified to grade grain, his work is regularly supervised by supervisory personnel who regrade a minimum number of samples he has graded.

Most grain officially inspected on entry to or discharge from a terminal elevator is sampled by automatic mechanical sampling devices that are both installed and operated under supervision of the Inspection Division.

The inspection system provides that, if a party appeals the grade assigned, the sample will be reviewed by the inspector in charge, the Division's Chief Grain Inspector, and finally, the Grain Appeal Tribunal. In the case of a complaint received after a cargo has arrived at a foreign destination, the Commission investigates all circumstances relating to the grading and weighing of the grain and the fitness of the vessel. In some cases, the Commission sends a representative abroad to evaluate circumstances relating to the complaint. The investigations are not concluded until the issue is resolved.

There are about 1,600 country (primary) elevator locations in Canada. Although the inspection service does not extend to country elevators, the operators can submit samples for grading to the Commission.

Country elevator operators grade the grain delivered by farmers, but farmers may appeal to the Commission when they disagree with the grade given on the grain delivered. A sample satisfactory to both the farmer and the elevator manager is submitted to a Commission inspector who notifies both of the results.

The Commission has a licensing authority that is used to maintain quality control throughout the Canadian handling system. An elevator cannot handle grain under official grade names established under the Canada Grain Act unless it is fully licensed by the Commission. The act requires that construction and alteration plans for elevators be submitted to the Commission for approval before licenses are issued. It also specifies that all licensed operations maintain handling equipment and storage facilities in efficient condition to minimize damage of grain while handling and to prevent deterioration during storage. Licensed elevators are regularly inspected by Commission inspectors. Failure to comply with license requirements may result in suspension or loss of a license.

The cost of the inspection and weighing services is recovered by charging inspection fees. The 1974 combined fee was $6.75 for each railcar or truck or each 1,000 bushel sublot of grain being loaded for export.

Appendix VII

LETTER DATED JANUARY 26, 1976, FROM THE UNDER SECRETARY OF AGRICULTURE

Department of Agriculture,
Office of the Secretary,
Washington, D.C., January 28, 1976.

Mr. Henry Eschwege,
Director, Resources and Economic Development Division, General Accounting Office, Washington, D.C.

Dear Mr. Eschwege: This is in response to your letter of January 19 requesting the Department to review and comment upon the GAO draft report to the House Committee on Agriculture and the Subcommittee on Foreign Agricultural Policy of the Senate Committee on Agriculture and Forestry by the General Accounting Office entitled "Assessment of the National Grain Inspection System and Certain Related Matters." We have reviewed the report and want to assure you that the USDA will continue to give full attention, within the limits of our resources, to improve the national grain inspection and weighing system.

Although no reference is made in the draft report to the issue of Federal original inspections of grain on an interim basis, we must convey to the General Accounting Office that one of our most vital needs is for immediate authority authorizing the USDA to perform original inspections of grain on an interim basis. Actions have been and are being taken to revoke the designations of official inspection agencies for violations of the U.S. Grain Standards Act. In a situation where the designation of an official inspection agency has been revoked, a replacement agency must be immediately identified and action taken to continue the inspection service. Our limited experience in this regard clearly indicates that it will not always be possible to immediately organize a new official inspection agency or to identify an existing official inspection agency willing to assume the needed inspection responsibilities. Therefore, it is necessary that emergency legislation be passed giving authority to the USDA to provide original inspection on an interim basis to assure continuity of inspection until a replacement official inspection agency can be designated. Therefore, we shall appreciate your considering the insertion in the final report of a recommendation that the Department be immediately granted such authority.

In summary, we are currently moving ahead aggressively in the port area with all actions necessary to secure and maintain the integrity of the grain inspection system. These actions involve a combination of stricter application of existing regulations and promulgation of

additional regulations under existing statutes. We believe strongly, however, that the best interest of the Department, the grain trade, U.S. producers and our foreign customers can best be effectuated by rapid passage of H.R. 9467. This will provide, among other needed reforms, authority for the USDA to provide original inspection on an interim basis.

We are enclosing the Department's comments for your consideration in preparing the final draft.

Sincerely,

JOHN A. KNEBEL,
Under Secretary.

COMMENTS ON RECOMMENDATIONS OF THE DRAFT REPORT TO THE HOUSE COMMITTEE ON AGRICULTURE AND THE SUBCOMMITTEE ON FOREIGN AGRICULTURE POLICY, SENATE COMMITTEE ON AGRICULTURE AND FORESTRY

The Department has reviewed the recommendations set forth in the GAO draft report on pages 58 through 60 and finds these technically and organizationally feasible to implement. However, the Department is not in total agreement with the recommendations. The following comments represent the Department's position with respect to the recommendations.

RECOMMENDATION 1

The GAO recommends that USDA be directly responsible for all grain sampling, inspection, and weighing operations and for issuing official inspection certificates at all port elevators and at major inland terminal elevators.

A. Comments on Sampling, Inspection, and Certification Operations

The Department does not concur with Recommendation 1. The Department's position is that legislation introduced as H.R. 9467, known as Foley Bill, will provide for an efficient and the most cost effective grain inspection system of the alternatives examined by the Department. The Department's proposal would (1) provide clear authority to eliminate actual and potential conflicts of interest. (2) require official inspection agencies to assume added responsibilities for training, staffing, and adequate supervision of their employees, (3) provide clear authority to suspend or revoke designations of official inspection agencies, (4) provide for withholding of inspection service for grain firms for violation of the Act, (5) provide authority for USDA to perform original inspections on an interim basis during revocation or suspension proceedings, (6) provide for sufficient personnel to handle the work effort; i.e., appeals, original inspection on an interim basis, and supervision activities, and (7) increase penalties for violations of the U.S. Grain Standards Act by licensees, official inspection agencies, and grain firms.

B. Comments on Weighing Operations

The Department does not concur with Recommendation No. 1. The Department's position is that separate legislation providing for a Federal-State-Private system of weight supervision at port elevators would provide for an efficient and most cost effective grain weighing

system of the alternatives examined by the Department. Such legislative authority would embody the same concepts as H.R. 9467, known as the Foley Bill, which applies to grain inspection.

RECOMMENDATION 2

The GAO recommends that USDA be authorized to provide inspection services (including grain sampling, grading, and weighing), on a request basis, under contracting or licensing arrangements at minor inland terminal and country elevators, where volumes are low or sporadic. Such services should be provided under USDA-prescribed standards and procedures and be subject to USDA review and supervision.

A. Comments on Sampling, Inspection, and Certification Operations

The Department does not concur with Recommendation 2. We recommend that the Department continue to designate official inspection agencies at any place in the U.S. where inspection services are requested. Such provisions are incorporated in the legislation introduced as H.R. 9467 (Foley Bill). With increased levels of supervision, statistically determined, designation conditions imposed upon official inspection agencies can be tightly controlled.

B. Comments on Weighing Operations

The Department does not concur in this recommendation with respect to weighing. We do not believe the report adequately supports the recommendation that the weighing system at the interior needs to undergo drastic change. According to the report 2195 country elevators were sent a questionnaire with 829 responding. 339 respondents indicated dissatisfaction with weights and grades at destination with 156 of these specifically identifying dissatisfaction with weights. On a percentage basis 15 percent of the country elevators contacted said they were dissatisfied with weights and grades with 7 percent singling out weights. The report also makes a comparison between origin and destination weights on 514 barges and 242 rail shipments stating that the net aggregate shortage was nearly 200,000 bushels. This seems to be a large quantity, but when compared to the total quantity involved of about 25 million bushels, the net aggregate shortage amounts to only ¾ of one percent.

We do not believe that any weighing system will significantly reduce net shortages in quantity at destination below ½ percent. We believe that the report's statistics on weighing supports USDA's position that it is not necessary for USDA to become involved in interior weighing.

We agree that accurate weights are necessary for accurate grades for shipments out of port elevators where the quantity is divided into sublots. However, we do not agree that accurate weights are significant in establishing accurate grades at interior points. We believe, however, that accurate weights are vital in transactions between buyers and sellers.

RECOMMENDATION 3

The GAO recommends that USDA use distinctively colored and worded inspection certificates which are not authorized for use by any State or other designated agency. Where non-Federal agencies are

designated at minor inland or country elevators, they also should be provided with distinctively colored and worded inspection certificates. This should serve to avoid confusion as to immediate responsibility for the accuracy of the certificates.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs that the USDA issue distinctively colored and worded Federal original inspection certificates which are separate and apart from those certificates issued by agencies designated by USDA.

RECOMMENDATION 4

The GAO recommends that inspection services be provided on a reimbursable basis under a system of fees designated to recover the fair costs of operating the system.

A. Comments on Sampling, Inspection, and Certification Operations

The Department concurs in principle to Recommendation 4. However, the Department's position is that there are certain indirect costs of a public benefit nature that should be financed from appropriated funds. These include (1) basic research, (2) general public information, (3) monitoring inspection accuracy in foreign ports, and (4) certain administrative costs. For this reason, we believe that a percentage of the costs should be funded through appropriations. Costs considered reimbursable by the Department include (1) direct supervision of Federal employees at the field office level, (2) direct supervision of official inspection agency personnel, and (3) appeal activities.

B. Comments on Weighing Operations

The Department concurs in principle to Recommendation 4. However, the Department's position is that there are certain indirect costs of a public benefit nature that should be financed from appropriated funds. These include (1) basic research, (2) general public information, and (3) certain administrative costs. For this reason we believe that a percentage of the costs should be funded through appropriations. Costs considered reimbursable by the Department include (1) direct supervison of Federal employees at the field office, and (2) direct supervision of official weighing agency personnel.

RECOMMENDATION 5

The GAO further recommends that, in developing standards and procedures for a Federal grain inspection system, either by legislation or regulation, the Congress and USDA give appropriate consideration to the following matters:

A. *Conflicts-of-Interest.*—The inspection system should prohibit all conflicts-of-interest, both actual and potential, and have an appropriate system of penalties for misconduct in this regard on the part of grain handlers and inspection personnel.

Comments on Sampling, Inspection, and Certification of Operations

The Department concurs with this recommendation, which is provided for in sections 6(a), 7, and 14 of H.R. 9467 and S. 2297. Pending legislation, the Department proposes to amend the regulations to pro-

hibit conflicts-of-interest, subject to statutory limitations. Additional controls on conflicts-of-interest will be considered in the development of affirmative action programs with individual grain firms.

B. *Sampling of Grain.*—Adequate controls, procedures, and safeguards should be established over the sampling process, including equipment operation and maintenance, with automated equipment made mandatory to the fullest extent possible.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs that adequate controls, procedures, and safeguards should be established over the sampling process, including equipment operation and maintenance. However, the Department believes that feasibility studies should be conducted prior to mandating the use of additional automated equipment.

C. *Grading Grain.*—The need for improved accuracy and uniformity in the grading of grain should be met through a program of continuing research and appropriate training.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs in this recommendation and plans to consider a long-term program of research and training to provide a balanced technical, statistical, and economic data base, and equipment development and testing program. Consideration will also be given to apply appropriate resources to this effort.

D. *Personnel administration.*—Adequate and uniform standards for recruiting, training, and supervising inspection personnel should be established and maintained; and a rotation program and standards of work production should be established for inspectors.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs that uniform standards for training of non-Federal inspection personnel are essential and that a rotation program and standards of work should be established for such personnel. The Department does not believe that uniform standards for recruiting non-Federal personnel are feasible because of local hiring conditions, labor unions, and State Civil Service regulations; however, competency tests are given prior to licensing. The official inspection agencies should be fully responsible for their own recruiting standards, training their personnel to pass the required USDA competency tests and qualify as technicians, and for maintenance of inspection proficiency through an aggressive training program once inspectors are licensed.

E. *General administration.*—Quick and thorough reviews and investigations of reported discrepancies and abuses should be required.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs with this recommendation.

F. The provision that superseded certificates be surrendered when repeat inspections are requested should be more stringently enforced.

Comments on Sampling, Inspection, and Certification Operations

The Department is in agreement with this recommendation. Recent additional appropriations to add Federal supervisory personnel will permit enforcement of this regulation throughout the system.

G. AMS instructions on stowage examinations should be revised to set forth training and performance requirements and to describe all situations where examinations should be required.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs in this recommendation. We are reviewing the need to revise the instructions regarding training and performance requirements. Instructions are under review to strengthen training and performance requirements for stowage examinations.

H. Appropriate annotations should be made on official inspection certificates issued for grain loaded from Great Lakes ports aboard lake vessels stating that such certificates are not valid for grain deliveries to locations beyond the Great Lakes.

I. Issuance of inspection certificates for U.S. grain sold for export through Canadian transfer elevators should be prohibited except upon being officially inspected at the time of final loading from the Canadian elevator to the export vessel.

Comments on Sampling, Inspection, and Certification Operations

The Department agrees to recommendations H and I in that inspection certificates for grain loaded from the lake ports should be qualified. Amendments to the regulations under the U.S. Grain Standards Act to provide for such statements are being developed.

J. The national grain inspection system should be open to public scrutiny by foreign buyers, or any other interested parties, for witnessing sampling, weighing, and inspection operations if they so desire.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs that the inspection system should be open to public scrutiny by any interested parties, provided that certain information, e.g., documents (certificates of grade, loading logs, etc.) pertaining to private transactions are released only to real parties in interest.

NOTE.—Section 26.87(b) of the regulations under the U.S. Grain Standards Act—Conflicts of Interest—entry by the trade into grain inspection laboratories is prohibited because of the possible pressure that may be exerted on those inspectors who are making grade determinations.

The following are the Department's comments with respect to the GAO recommendation on page 79 of the draft report:

The GAO recommends that the Secretary of Agriculture:

A. Direct AMS to (1) determine the possible impact, particularly on U.S. exporters, of correcting, either through the appeal process or otherwise, original inspection certificates found to be in error and (2) develop and implement appropriate procedures for making such corrections.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs in the need for a study of the impact on U.S. exporters of a change in the appeal process when the original inspection certificates are found to be in error, and if the study indicates the need for this change, develop and implement appropriate procedures for making such corrections.

B. Require ARS, in coordination with AMS, to conduct appropriate research to identify the type and extent of damage which can be expected to occur normally when handling and transporting grain, particularly export grain, and instruct FAS to notify foreign buyers what they generally can expect in this regard.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs in the research needs outlined in this recommendation. In support of AMS research needs, ARS and AMS signed a memorandum of agreement, dated June 30, 1975, that establishes a coordination policy and procedure for coordination within the limits of the resources of the two agencies. Immediate consideration will be given to intensifying research on damage in handling and transportation of grain, especially in export channels. Immediate consideration will be given to specific research needs to meet those recommendations within the limits of the available resources of ARS and AMS.

C. Designate FAS as the central coordinating agency within the Department for handling foreign complaints.

Comments by FAS

We agree that FAS should be the agency within the Department designated with the responsibility for coordinating all activities related to handling foreign complaints. FAS will distribute to AMS, ASCS, ARS, and AID copies of revised 12 FASR with instructions requesting that all quality and short weight complaints be forwarded to the appropriate International Marketing Director (IMD) for processing. Copies of this regulation will also be distributed to market development cooperators with instructions to forward to the appropriate agricultural attache any foreign complaints they receive.

D. Direct FAS to strengthen its regulations to require careful evaluation of each foreign complaint received and perform, or have performed, such investigation as is warranted under the circumstances to ascertain the pertinent facts of each case. (A GAO staff member clarified this recommendation in a telephone conversation on January 23. The recommendation is intended to insure that FAS obtain all essential information pertaining to a complaint.)

Comments by FAS

FAS has developed a standard form to be used by foreign buyers in reporting quality complaints. The form, when completed by the complainant (foreign buyer, importer, etc.), will provide detailed information on the circumstances involved in each complaint. AMS reviewed the form and stated that it will be of considerable help in responding to most foreign buyers' complaints. Copies of the form will be distributed to our agricultural attaches and should be in use in the near future.

We are in the process of rewriting Title 12 FASR, Chapter 2, entitled "Handling Foreign Quality Complaints." One of the purposes of rewriting this chapter is to more clearly define the attache's role in handling quality complaints. The revised regulations will include a provision for using the complaint form.

The revised regulations will also require attaches to cable the appropriate IMD as soon as a complaint is known. The IMD will forward this information direct to AMS so that file samples will be retained.

E. Direct FAS, in coordination with AMS, to develop specific regulations or instructions regarding information to be obtained by the attaches from foreign buyers who file complaints about short weights.

Comments by FAS

The form for reporting quality complaints mentioned above will also be used to report short weight complaints. FAS/W will forward copies of all short weight complaints to AMS and to the USDA Office of Investigation upon receipt from the attache.

F. Direct FAS to reemphasize to attaches the importance of obtaining information from foreign buyers about problems with the quality and weights of U.S. grain shipments and forward it to FAS headquarters on a regular basis.

Comments by FAS

Attaches will be provided with specific guidelines outlining the proper handling of quality and short weight complaints. Essential background information on inspection, sampling, weighing, and transportation procedures will also be provided.

The Assistant Administrator, Agricultural Attaches, is making the necessary arrangements to insure that attaches and assistant attaches receive a detailed briefing from AMS prior to overseas assignment. We believe the standard form for submitting complaints, the instructional letter to current attaches, and AMS briefing of attaches will emphasize the importance of complaint reporting.

G. Direct AMS to develop written guidelines, procedures, and timeframe goals for investigating and responding to foreign complaints and to develop and implement effective procedures for taking action on the results of investigative findings when they reflect on the integrity of the national grain inspection system.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs in the recommendation and is developing written guidelines, procedures, and timeframes for investigating and responding to foreign grain complaints, and will develop and implement effective procedures for taking action on the results of these findings when they reflect on the integrity of the national grain inspection system. The current target date for developing written guidelines and procedures is early February 1976 as outlined in the reply to the Office of Audit regarding their recent audit on foreign grain complaints.

Comments on Weighing Operations

AMS will formalize, on an interim basis, actions on short weight complaints pending the conclusion of ongoing investigations and an expanded role for the Department in export weighing.

The following is the Department's comment with respect to the GAO recommendation on page 88 of the draft report:

RECOMMENDATION

The GAO recommends that the Secretary of Agriculture intensify present research and development efforts on the U.S. grain standards

and provide for greater coordination and cooperation among the several USDA agencies charged with research and marketing responsibilities.

Comments on Sampling, Inspection, and Certification Operations

The Department concurs in the need for intensified research and development efforts in the further updating of the U.S. grain standards. AMS and ARS will intensify research and planning efforts by first jointly designing and costing-out priority research proposals for use in requesting adequate manpower and funds. With a higher level of resources, grain standards can be systematically evaluated and highest priority research activities conducted in tandem to expedite needed modifications in U.S. grain standards.

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