



*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*





## Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.





1  
Ag 84 Mr  
cop. 3

MARKETING RESEARCH  
REPORT NO. 101

LIBRARY

JAN 5 1956

U. S. DEPARTMENT OF AGRICULTURE



# The Auction Marketing of **FLUE-CURED TOBACCO**

*A Preliminary Appraisal*

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE • WASHINGTON, D. C.

SEPTEMBER 1955

## ACKNOWLEDGMENTS

The study reported here was started under the late George E. Powell and was carried on under the direction of his successor, Claude E. Turner, of the Tobacco Division of the Agricultural Marketing Service. J. E. Thigpen, formerly Director of the Tobacco Division of the Commodity Stabilization Service, and Stephen E. Wrather, Director of the Tobacco Division of the Agricultural Marketing Service, who were in charge of the stabilization programs and the marketing services for tobacco during most of the study period, were also most helpful with advice and assistance, as were other members of their staff. C. B. Gilliland, head of the Special Crops Section, and Donald Jackson, agricultural economist of the Special Crops Section, Marketing Research Division, Agricultural Marketing Service, have contributed much to the final stages of preparation of the report.

# CONTENTS

Page

Summary.....	1
Introduction:	
Importance of flue-cured tobacco and the auction markets .....	2
Marketing margin at flue-cured auction markets.....	3
Loose-leaf tobacco auction markets for flue-cured:.....	6
Location and number of markets by type .....	7
The marketing season .....	8
Size of markets--sets of buyers, market capacity, and volume of sales .....	9
Size of markets--floor space and basket capacity of warehouses.....	11
Warehouse capacity vs. market capacity.....	12
Functions performed on auction markets:	
Assembling.....	13
Standardization and grading .....	14
Federal grades and grading .....	15
Risks and losses on the auction floor .....	15
Selling and buying .....	16
Payment and financing the transfer of tobacco .....	17
Market information .....	18
The services rendered by the warehouseman.....	18
Costs in marketing flue-cured tobacco:	
Costs to the grower .....	19
Total returns, costs, and net returns to warehouseman .....	20
Gross margin taken at the auction markets.....	24
Other costs in operating flue-cured auction markets .....	24
Some possibilities of increasing efficiency and reducing costs:	
Some factors influencing efficiency and costs in auction markets .....	26
The relation of volume of sales to efficiency and costs of warehouse firms.....	26
The relation of volume of sales to warehouse returns .....	29
Relation of volume, costs, and returns to overexpansion of warehouse space .....	31
Relation of volume to the number and size of firms .....	35
Relation of volume per market and set of buyers to costs .....	36
Relation of resales to the margin at auction markets. ....	39
Relation of pickups and floor sweepings to the margin at auction markets.	47
Joint action to increase efficiency.....	50
Literature cited .....	53





# THE AUCTION MARKETING OF FLUE-CURED TOBACCO

## A Preliminary Appraisal

By Clarence I. Hendrickson, agricultural economist  
Agricultural Marketing Service

### SUMMARY

This study was limited to the cost of marketing tobacco at auction and to some of the causes of cost variation. The purpose of the study is to suggest where and how costs might be reduced without lessening services of the market.

The margin taken at the auction market amounts to about 4 percent of the grower's returns, or about \$25 per acre grown. The total margin was 24.4 million dollars in 1950, and 29.4 million in 1951. Most of this went to the warehousemen as charges for warehouse services. The next largest amount was the margin on resales by "pinhookers" (buyers who purchase tobacco and resell it as leaf tobacco), amounting to 3.3 million dollars in 1950, and 3.4 million in 1951, or 14 and 12 percent, respectively. In addition, the spread on the warehousemen's "leaf accounts" (their own purchases and sales of leaf tobacco), and the receipts from sales of "pickups" (tobacco knocked off the baskets on the auction floor) amounted to 0.7 million dollars in 1950 and 3.3 million in 1951. The wide variation was due to losses on leaf accounts in 1950.

The net income of the warehouse firms averaged \$21,000 in 1950. It varied from \$5,000, for warehouses with an average selling season of 20 days and with considerable leaf account net losses, to \$32,000, for those with a selling season averaging 50 days.

Excluding the management provided by owners actively engaged in the business, hired labor accounted for over half of the warehouse costs. Building and equipment charges accounted for nearly a third of these costs, and other miscellaneous items accounted for a sixth.

The costs to the growers marketing tobacco at auction are not large and the system appears to be generally satisfactory. There are, however, possibilities of savings of more than 5 million dollars annually by improving the auction system and reducing the costs which enter into the auction market margin. The realization of any savings will require the active effort of the interested parties, especially of the growers, to bring about those changes which will increase the efficiency of the auction.

An important improvement would be a moderate reduction in warehouse space. Substantial savings in costs could be made in this item and at the same time ample space would be available to handle the varying volumes of tobacco coming to market in different seasons and during a season. The distribution of time allotted to sales at each warehouse on some basis not related to floor space would do away with the incentive to increase the floor space beyond that needed for efficient operation.

If growers were adequately informed about costs and services, groups, such as cooperatives, and members of the local farm organizations, could work with their warehousemen to determine the possibilities of reducing costs below the maximum charges established by State laws. Since conditions affecting costs vary from market to market and season to season, charges might be adjusted to reflect these differences.

By better sorting and displaying and by careful rejection of low bids growers could increase their income. Several State departments of agriculture and State extension services, in cooperation with the Tobacco Division of the Agricultural Marketing Service, instruct growers on sorting and displaying tobacco, and on the characteristics determining differing qualities or grades. More such work would help growers do a better job of

marketing. Farm organizations might well consider how they might assist their growers to do a better job of preparing the tobacco for market and of displaying and selling it.

On a number of markets careful spacing and handling of tobacco would reduce the pickups and floor sweepings sold by warehouse operators, thus saving buying companies substantial sums. Such additional care would add little if anything to the costs.

The consolidation of some of the smaller warehouse firms would reduce the labor required, and thus increase efficiency and lower costs. This would increase competition by bringing the costs of these firms more in line with those of the other firms in the markets. Fewer sets of buyers (a set of buyers consists of a representative of each buying company in the market) could handle the same volume of tobacco with a saving to the taxpayers and buying companies, as fewer Federal inspectors and buyer representatives would be needed. With fewer sets of buyers the smaller tobacco companies could be represented at the sale of a larger proportion of the tobacco and the companies now represented on most markets would use their more able judges of tobacco in the fewer sets of buyers. Both would increase the competition for the several qualities of tobacco. The trucks and good roads of today make possible such a consolidation of warehouses and reduction in sets of buyers without inconveniencing the growers either as to the time or place of selling their crops.

The marketing problems of the flue-cured auction markets are not simple and will not be easily solved. They are interrelated and affect the growers, warehousemen, and buying companies. Nor are they limited to any one belt but rather are regionwide. More education is needed to bring about a better understanding by all the interested parties of the functions of the auction system, of the way it operates, and the problems which hinder its efficient and orderly operation.

Cooperation of all the parties is needed if the system is to operate more efficiently. This could be brought about in several different ways.

One way which has been suggested, by members of the tobacco industry and others, is the establishment of a representative committee to consider in advance of each marketing season the problems and practices that hinder the orderly and efficient operation of the system. Informal committees have operated to some extent in the past. Such a committee should be one recognized throughout the flue-cured region and by all interested parties. It could recommend market opening dates, hours of selling time, number of sets of buyers, methods of allocating selling time and other desirable rules or practices.

To establish such a committee, the divisions of markets of the States where flue-cured tobacco is grown could select a committee of persons familiar with tobacco production and marketing. Another way would be for the general farm organizations to set up such a committee including growers, warehousemen, and buyers.

These rules and practices are now largely determined by the warehousemen through their associations and the local tobacco boards of trade, not because the warehousemen want to exclude the other interests but for lack of any formal way to secure the cooperation of growers and buyers.

## INTRODUCTION

### Importance of Flue-Cured Tobacco and the Auction Markets

More than half the tobacco produced in the United States and more than three-fourths of the leaf tobacco exported is flue-cured. These tobaccos have gained this share of the domestic and foreign market largely because they comprise more than half the tobacco used in American blended cigarettes and practically all of that in the British Virginia-type cigarettes. More than 90 percent of the flue-cured tobacco used domestically goes into cigarettes. Smoking tobacco takes the larger share of the rest, while some goes into



chewing tobacco and into short-filler cigars. The highest priced grades are used for plug chewing wrappers.

The rapid increase in cigarette consumption, especially in the United States, has required a large increase in production of flue-cured and of burley, the other principal component of American blended cigarettes. The present domestic production of flue-cured tobacco is more than three-fourths larger than before World War II, while domestic consumption is one and a third times greater.

Exports in the prewar period accounted for half the total disappearance (51.9 percent), and in the last 5 years the proportion has decreased to just under two-fifths (39.4 percent). The relative importance of exports is likely to continue to decline even though actual exports do not. The actual quantity exported in a recent period (1948-52 crop years) averaged 433 million pounds (farm-sales weight) a year compared with 366 million for the crop years 1934-38.

The flue-cured tobacco acreage is concentrated in the Piedmont and Coastal Plain areas of the Southeast from Virginia to Florida, with a small acreage in Alabama. The loose-leaf tobacco auction markets are within this production area and for many years have handled all flue-cured, or "bright," tobacco as sold by the growers. The loose-leaf tobacco auction also represents the principal method of selling burley, the dark tobaccos, and, since 1939, most of the Maryland tobacco. In all, more than 90 percent of the tobacco produced in the United States is sold by the grower through the loose-leaf auction. The cigar-leaf types are the only kinds in which this method is not used.

### Marketing Margin at Flue-Cured Auction Markets

The margin taken at loose-leaf flue-cured tobacco auction markets amounted to \$24,403,000 in 1950 and \$29,414,000 in 1951. The charges of the warehousemen, the most important item in this margin, amounted to \$20,340,000 in 1950 and \$22,585,000 in 1951. The second most important item is the margin or spread between the buying and selling prices in resales of leaf tobacco at the warehouse by warehousemen and others, mostly pinhookers.<sup>1</sup>

The margins amounted to \$2,778,000 in 1950 and \$5,251,000 in 1951. The wide variation in this item in those two years was the result of losses by a number of warehousemen on their own purchases and resales of leaf tobacco in 1950, called their "leaf accounts." The other item in the margin is the sale by the warehousemen of floor sweepings and pickups--the tobacco which falls on the floor from the baskets and is not delivered to purchasers of the rest of the tobacco in the baskets. This item amounted to \$1,285,000 in 1950 and \$1,578,000 in 1951. Details of the margin are given in table 1, together with the returns to the growers and the payments by the tobacco companies.

The percentage which this margin is of the returns to the growers and the payment by the tobacco companies and the distribution of the total to the several items is shown in table 2.

The margin taken in 1951 at the flue-cured auction markets averaged \$2.04 per hundred pounds of the growers' tobacco handled by these markets. This was made up of warehouse charges averaging \$1.57, the spread on the resales of tobacco purchased by warehousemen and pinhookers of 36 cents, and 11 cents for the sale of pickups and floor sweepings. These total about 4 percent of the price the grower receives. These costs amount to \$25 or more per acre of tobacco grown. To the grower they rank with such important cost items as fertilizer, fuel, repairs, and depreciation on barns and pack houses (11, pp. 119-137).

<sup>1</sup> "Pinhookers," as used in this report, means buyers who purchase tobacco and resell it in the form of leaf tobacco, in contrast to tobacco companies, who resell little tobacco without redrying or other processing.



TABLE 1.--Return to flue-cured tobacco growers, margin at auction markets, and, payment by tobacco companies, 1950 and 1951

Item	1950	1951
Return to growers-----	1,000 dollars 668,157	1,000 dollars 736,663
Margin at auction:		
Warehouse charges-----	20,340	22,585
Spread, leaf account-----	<sup>1</sup> -568	1,732
Spread, on pinhookers' resales-----	3,346	3,519
Sale of pickups-----	1,285	1,578
Total-----	24,403	29,414
Payment by companies-----	692,560	766,077

<sup>1</sup> Loss.

TABLE 2.--Margins at auction markets as a percentage of return to growers, payment by tobacco companies, and percentage distribution of margins, 1950 and 1951

Item	1950	1951
Total margin as a percentage of--	Percent	Percent
Return to growers-----	3.7	4.0
Payment by companies-----	3.5	3.8
Percentage distribution of total margin from--		
Warehouse charges-----	83.3	76.8
Spread, on leaf account-----	<sup>1</sup> -2.3	5.9
Spread, pinhookers' resales-----	13.7	11.9
Sales pickups-----	5.3	5.4

<sup>1</sup> Loss.

Moreover the averages given cover wide variations in efficiency of market operation and the warehouses within markets. There are markets and warehouses where more efficient utilization of facilities and services could be obtained and where the margin taken on resales and from the sale of pickups could be reduced. It is estimated that the total margin taken at these markets could be reduced by an amount ranging up to 5.6 million dollars annually.

Fixed or overhead costs are important in the auction marketing of tobacco. The warehouse building and the associated equipment in the flue-cured tobacco areas are used from 2 to 14 weeks a year, varying with the type of tobacco sold. Costs of specialized types of labor (weigher, bookkeeper, and clipman) are of a nature intermediate between "fixed" and "variable" costs, and are often called "controlled" costs. Up to the capacity of one weigher, for instance, there is no variation of weigher's cost with volume of business. This is also true of the labor of management usually provided in whole or in part by the owners. Because of these fixed and controlled costs, the cost of handling 100 pounds of tobacco in the warehouse declines with the increase in the volume up to the capacity of the warehouse and of management and labor.

Labor and management costs for the firms studied dropped 27 percent, or from an average of 85 cents per hundred pounds to 62 cents per hundred, as the volume increased from 1 million pounds to 13 million pounds. This drop was rapid until a volume of 4 million to 5 million pounds was reached. The cost per hundred pounds of tobacco for providing the building and equipment also decreases rapidly with the increase in volume in relation to floor space.

The volume of tobacco handled by a set of buyers on a market is also important in determining certain marketing costs, especially the costs of the buying companies. These costs were estimated to be in excess of 4 million dollars in 1951, and they varied from 17 cents a hundred pounds for a purchase of 3 million pounds to about \$1.25 a hundred for purchases of 300,000 pounds.

The costs to the Federal and State governments in providing services to the auction markets do not get into the margin taken at these markets. One such cost is that to the Federal Government for providing market inspectors. Such costs varied from 2.3 cents to 14.6 cents a hundred pounds on flue-cured markets in 1951 and averaged 3.6 cents. These variations are due to the differences in the volume sold. The Federal Government, in cooperation with the State, also provides a market news service. These two services cost the Federal Government over a million dollars in 1951.

This study is limited to the costs and marketing margins, and is not a complete appraisal of the loose-leaf auction system of marketing flue-cured tobacco. The results of the auction system in terms of prices for the different tobacco grades or qualities are not covered here.

The accuracy with which prices reflect the demand and supply situation for the different qualities is as important in judging the efficiency of a marketing system as are costs. Unless the prices reflect accurately the supply and demand situation for the qualities required by manufacturers and ultimate consumers, the grower will not be encouraged to produce the qualities needed. Conversely, unless the prices reflect accurately the supply and demand situation for the qualities offered by growers, manufacturers and consumers will not be encouraged to take the various qualities at the rate they are supplied.

The adjustment of price-quality relationships to supply and demand will also vary from warehouse to warehouse and market to market just as do the costs. Both the efficiency of the operation of the auction market and the accuracy of pricing depend to a great extent upon the knowledge and ability of the warehouse operator.

Because of the wide variation in quality of tobacco and the lack of a standard for judging quality acceptable to and used by the trade, the results of the auction market in pricing tobacco are difficult to measure. However, for the same reasons the knowledge and ability of the warehouse operator are very important in the successful operation of the warehouse system. If he is to secure the highest price for the grower for the quality of tobacco offered, he must know tobacco quality and the supply and demand situation for the different qualities. He must have the ability to conduct the sales in such a way that the price reflects the current situation. Not all warehousemen are equally capable of securing the price that reflects the value of the tobacco offered for sale.<sup>2</sup>

---

<sup>2</sup> An unpublished study made by the Bureau of Agricultural Economics on the prices of tobacco sold at auction in the Eastern North Carolina belt showed that there was a significant difference in the price of the same Federal grade of tobacco from warehouse to warehouse and market to market.



## LOOSE-LEAF TOBACCO AUCTION MARKETS FOR FLUE-CURED<sup>3</sup>

A loose-leaf tobacco auction market operating in the flue-cured area consists of one or more warehouse firms and one or more sets of buyers. Each warehouse firm may operate one or more warehouses. If the firm has more than one, the warehouses may be operated as a single unit, each warehouse may be operated as a unit, or there may be any combination of warehouses or warehouse activities operated as a unit. Sales may be conducted on two or more warehouses, while the office activities may be all carried on in one office, which may be in a building separate from the warehouses.

Each set of buyers consists of several persons, varying from 8 to 10 or more, depending on the size of the market. There are three groups of buyers operating on flue-cured markets: (1) Representatives of manufacturing firms, both domestic and foreign; (2) representatives of firms which operate as tobacco leaf dealers; and (3) other purchasers, individuals who buy and resell the raw leaf on the auction floor. This latter group includes pinhookers and the warehouse men who operate the leaf account. The latter buy and sell tobacco on the auction floor for the warehouse firm.

Individuals other than the warehousemen who buy and resell on the auction floor are called by various names--speculators, pinhookers, and leaf dealers. They differ from the second group, tobacco leaf dealers, in that they do not process the leaf in any way, while those called tobacco leaf dealers redry the tobacco and pack it into hogsheads. Some may also stem the tobacco and sell it as strips. Any buyer who purchases tobacco to resell it later may be termed a speculator, since he stands to gain or lose if market prices should change. In this sense, both those termed tobacco leaf dealers and pinhookers are speculators.

The term pinhooker is sometimes limited to the individuals who buy the tobacco from the grower at a time other than at the auction sale (1, p. 40). The term pinhooker will be used here to designate anyone other than the warehousemen who buys tobacco, whether at the auction sale or otherwise, solely to resell it as raw leaf on the auction floor. Any purchases or sales of the leaf in its loose or unpacked form other than at an auction warehouse are insignificant on the flue-cured markets. Practically all resales in the loose-leaf form are made by either pinhookers or warehousemen.

The tobacco leaf dealer--the firm that buys, processes, and packs the leaf into hogsheads and sells it as packed tobacco--does not buy tobacco directly from the grower except at a regular auction sale in the flue-cured regions, as is sometimes done in other tobacco regions (1, p. 40). These dealers buy on their own account and on commission for manufacturers or other dealers. There are few buyers on flue-cured markets who act only as commission buyers, although some of those considered here as leaf tobacco dealers may do the larger part of their business on a commission basis.

The warehouses are the conspicuous part of any auction market, and the warehouse firms are the keys to the successful operation of the market. The importance of the set of buyers in the operation of the market may be overlooked. A set of buyers is not a part of the organization of the warehouse firm but operates in all warehouses of the market; or if there is more than one set of buyers, each set operates in a group of warehouses for a day.

The selling time--the number of hours the set of buyers or sets of buyers operate--is divided among the warehouses of the market. This division of the selling time determines the number of baskets or lots of leaf tobacco that can be sold by the warehouse. There is a limit of 400 baskets an hour that can be sold on flue-cured markets. The selling time varies from 3 1/2 hours to 6 hours (20, p. 11). The number of hours of selling time for a day multiplied by the 400 lots per hour times the number of sets of buyers

---

<sup>3</sup> For an excellent description of the organization and operation of the loose-leaf tobacco auction market system see Kentucky Bulletin 599, Organization of the Looseleaf Tobacco Auction Market (1).

sets the limit on the number of transactions that can be made on the market. Each warehouse is limited to the number of baskets or lots permitted in the selling time allocated to it.

Thus this selling time, when allocated to the warehouse, becomes something of value to the warehouseman. It determines the volume of sales he can make and this volume affects both his gross return and his costs and through these his net return. Thus, the payment which the warehouse operator receives for providing the warehouse and equipment and for his services in operating the auction is greatly influenced by the selling time allocated to his warehouse. This allocation of selling time is made by the local tobacco board of trade.

These tobacco boards of trade are organized on the several flue-cured markets. Each consists of the warehousemen and buyers operating on the market. Since the Lexington trial of 1940-46,<sup>4</sup> the manufacturers and large leaf dealers do not take an active part in the deliberations of the local boards of trade. These are now under the control of the local warehousemen and local buyers. The purpose of these organizations is to promote their respective markets and to consider matters of general interest to the operation of a successful market (1, p. 67). A board of trade can increase the business of its market by adding a set of buyers. The increased selling time thus provided will permit the market to handle a larger volume of tobacco. The local board of trade will decide upon an additional set of buyers and then request the buying companies to place representatives on this added group. If the larger companies comply with the request, another set will have been established; if not, the attempt will be abandoned (20, p. 11, footnote 2 to table 2).

Another organization that has a part in the operation of the flue-cured markets is the Bright Leaf Tobacco Warehousemen's Association. An important question in the operation of the loose-leaf auction markets is the opening of the markets. The opening dates are determined by the warehousemen's association for the markets of the different types or belts (20, p. 2). As the name implies this association is composed of the warehousemen operating in all flue-cured belts. This association also sets the maximum number of baskets that can be sold in an hour and the hours of selling time the markets are to operate. Also, it is concerned with matters of general interest to all warehousemen operating on flue-cured markets.

There are other organizations in connection with tobacco auction markets. A bulletin of the Kentucky Agricultural Experiment Station covers these as they operate on the burley markets; the information is also generally applicable to flue-cured markets (1, p. 66 ff.).

### Location and Number of Markets by Type

The markets of flue-cured tobacco are all located within the producing region. This is divided into five more or less distinct areas or belts. One of these is the Old Belt, so designated because flue-cured tobacco has been grown there the longest and because the tobacco of this belt was the first to develop a reputation for the qualities which have given flue-cured tobacco such an important place in the tobacco world. It is located in the Piedmont of Virginia and North Carolina.

The second area is the Middle Belt starting at about the fall line<sup>1</sup> and extending into the coastal plain. The third is the Eastern North Carolina Belt, or Eastern Belt, in the coastal plain of eastern North Carolina, north of South River. The fourth is the Border Belt of North Carolina and South Carolina, in the coastal plain on both sides of the North Carolina-South Carolina border, extending from South River into South Carolina. The fifth is in the coastal plain of Georgia and north Florida, with a small acreage in Alabama, and is called the Georgia-Florida Belt.

---

<sup>4</sup> At this trial held in 1940-46 some of the tobacco companies were found to have violated certain provisions of the Sherman Anti-Trust Act.



The appearance of tobacco and its suitability for different uses vary considerably and are important in the marketing of tobacco. This variation is influenced by the varieties grown, the cultural practices, the curing methods used, the position of the leaf on the stalk, and the soil and climate where the tobacco is grown. The grower can control the first three factors. However, his cultural and curing methods can modify the last three only to a degree. Owing to the differences in the tobacco resulting from the soil and climate variations in these belts, the tobacco grown in one region can be distinguished from that grown in another.

For purposes of the Tobacco Stocks and Standards Act (13, 14, 16), other Tobacco Acts, and the several Government programs for tobacco, the Department of Agriculture has classified leaf tobacco into classes, types, and grades. Class 1 is all flue-cured tobacco. This class is divided into four main types-11, 12, 13, and 14 (10). The differences in these types are the results of the differences of soil and climate in the different belts. All tobacco types are designated by two digit numbers--the first designating the class and the second the type.

Type 11 is grown in the Old and Middle Belts as given above. The tobacco grown in the Old Belt is heavier and darker colored than that grown in the Middle Belt. This type is sometimes classified as 2 types, 11a in the Old Belt and 11b in the Middle Belt. This latter classification will be used in this report, giving 5 types instead of 4.<sup>5</sup> The opening of the markets and other considerations in the marketing of the tobacco make this a logical grouping in the study of the markets.

The distance between flue-cured markets varies from 8 to 46 miles. Except for some farmers on the fringes of the belts, most growers are within 10 miles of a market and within 15 miles of two or more markets. Nearly all tobacco growers haul their tobacco, or have it hauled, by truck, trailer, or automobile, and by these modes of transportation are within a half hour of a market. In fact, most are within a half hour of two markets.

The 1950 crop was sold on 88 markets. Of these, 22 were in the Georgia-Florida Belt, 19 in the Border Belt, 17 in the Eastern North Carolina Belt, 10 in the Middle Belt, and 20 in the Old Belt. The markets in each belt sell some tobacco from other belts, but relatively little. The largest number of markets are in the Georgia-Florida Belt, which produces the least tobacco. The reason for the large number of markets in the Georgia-Florida Belt and the Border Belt is that the length of time the markets operate is shorter than for the markets further north, and each market sells less tobacco than if it operated for a longer time.

### The Marketing Season

The markets of any flue-cured tobacco belt open after a considerable quantity of the tobacco in the belt has been harvested, cured, bulked, placed in piles, and sorted into farm grades. The opening thus depends on the progress of the growing season and varies slightly from year to year. The Georgia-Florida markets open during the latter part of July, the Border Belt markets open the first of August, those in the Eastern North Carolina Belt just after the middle of August, those in the Middle Belt just prior to or the first week of September, and those in the Old Belt near the middle of September. In 1950 the season began July 24 in Florida and Georgia with the marketing of type 14. As the harvest progressed, the markets in the other belts opened, from south to north. The markets closed in the same order with the season ending in the Old Belt (type 11a) on December 15.

The markets continue to operate until all the tobacco is sold. The time they remain open depends on the size of the crops and the effect of the weather on the harvesting, curing, and preparation of the tobacco for market. There are, however, factors other than these natural ones that influence the length of the marketing season.

<sup>5</sup> Official Standard Grades for Flue-cured Tobacco (9). A somewhat different classification is given by Darkis in Industrial and Engineering Chemistry (2, p. 1153).

It is to the advantage of a company and to the buyers representing it to have each of the buyers occupied for as many days as possible during the season. This is accomplished by having the same buyer operate in two belts where the marketing season of one follows the other. The quantity of tobacco bought per buyer will be increased, but the costs will not be increased in proportion, thus reducing the buying cost per pound. Accordingly, the buyers' representatives in the markets farthest south go to the markets farther north when they open, and later to the burley markets. The representatives of the principal buying firms operating on the Georgia-Florida markets go to the Eastern North Carolina markets and the Middle Belt markets; from the Border Belt they go to the Old Belt markets.

Another important factor is the ability of the redrying plants to handle the tobacco as it is sold on the auction market. Buyers move the tobacco from the warehouse to and through the redriers within a few days after it is purchased to avoid loss and deterioration in the quality of the tobacco. If the plants are unable to redry the tobacco as fast as it is sold, some of the buyers temporarily will be purchasing less, and prices may be lower. If this occurs, the warehousemen's association may reduce the number of hours of selling time in a day or eliminate sales for a day or more to limit the volume of tobacco sold to the quantity that can be handled by the redriers.

In the 1950 marketing season the sales time was reduced in the 6-week period from September 5 to October 17. A marketing holiday was in effect for 4 days from September 21 to September 26; sales were held for 3 instead of 5 days for the 2 weeks ending September 15 and September 29. With the opening of the markets in the Middle Belt and before the closing of the markets of the Border Belt, the capacity of the markets may be in excess of the redrying plants as was the case in 1950.

Another factor affecting the length of the marketing season is the anxiety of the farmers to market their tobacco as soon as it is cured and ready for sale. The merchants and warehousemen of the towns in the growing areas have responded to this normal desire of the grower by increasing the number of markets and the sets of buyers on established markets. By doing so they hope to induce more growers to market tobacco in the warehouses in their town.

The additional sets of buyers on both old and new markets make it possible to sell more tobacco in a given length of time. Ten new markets were opened in the period from 1946 to 1950, and 15 additional sets of buyers were placed on markets already in operation. In this manner, the length of the marketing season for the flue-cured markets has been shortened considerably over the past 50 years. Before the turn of the century the markets were open for most of the year (8, p. 234). This shortening of the selling season has added to the cost of marketing.

A longer selling season will enable a large volume of tobacco to be handled with the same buildings and equipment and permit better utilization of labor and management, especially the specialized labor. This holds not only for the costs at the auction market but also for transporting and processing the leaf to the redrying plants and to storage. It has been necessary for the tobacco buyers to add to their employees, and to their redrying and other facilities, in order to take care of the purchases in a shorter time.

### Size of Markets--Sets of Buyers, Market Capacity, and Volume of Sales

There are from 1 to 5 sets of buyers on each of the flue-cured markets. There were 59 markets with 1 set of buyers in operation in 1950. Seventeen of the markets had 2 sets of buyers, 4 had 3 sets, 5 had 4 sets, and 3 had 5 sets. The 3 having the largest number were Wilson, Greenville, and Kinston all in North Carolina, in the Eastern Belt, where type 12 tobacco is produced.

The daily capacity of the individual market varies from the 2,200 lots, or baskets, that can be sold with 1 set of buyers to the 11,000 lots that can be sold with 5 sets. The



88 markets had a total of 140 sets of buyers and a daily capacity of 308,000 baskets distributed by belts or types as shown in table 3.

TABLE 3.--Number of sets of buyers, and daily capacity of flue-cured markets, by types, 1950

Type	Sets of buyers	Daily capacity	
		Baskets	Weight <sup>1</sup>
	<i>Number</i>	<i>Number</i>	<i>1,000 pounds</i>
11a-----	27	59,400	10,870
11b-----	15	33,000	6,006
12-----	35	77,000	13,321
13-----	32	70,400	10,842
14-----	31	68,200	9,548
Total-----	140	308,000	50,587

<sup>1</sup> At the average weight of the tobacco per basket for the type.

The sets of buyers for the flue-cured area do not operate at the same time, since the season for the different types varies. All sets of buyers for a type operate simultaneously, except at the end of the season.

The capacity per set of buyers on a market will vary with the amount of tobacco placed on the baskets. The daily capacity in pounds per set of buyers will generally vary between 300,000 to 350,000 pounds. Most markets will operate close to capacity for several weeks at the height of the season. Markets may operate at less than capacity if they open before a sufficient volume of tobacco is ready for market.

Near the end of the season the volume frequently drops sharply below the capacity of the markets. Although the large bulk of the flue-cured tobacco is marketed within a few weeks, the number of weeks will vary with the different types. The markets, however, remain open to serve growers who, because of late harvesting and curing or because of insufficient labor, cannot get their tobacco to market earlier. Marketings may be less than the capacity of the auction markets when the redriers are unable to process the tobacco as fast as it can be sold. This situation occurred in 1950 but has not occurred since.

Wilson, N. C., sells the largest volume of tobacco of all flue-cured markets--85 million pounds in 1950 and 93 million pounds in 1951. Sylvester, Ga., is the smallest market in volume of sales, selling a little in excess of 1 million pounds in 1950 and 2 million in 1951 and 1952. This latter market and several other small markets operated with an incomplete set of buyers, because not all of the six largest buying companies were represented on them.<sup>6</sup> This was true of the fifth set of buyers on the Kinston, N. C., market in 1950.

The volume of sales on a market will vary with production in the area from which it draws its supply of tobacco as well as with the number of sets of buyers. Production in the various market areas changes considerably from year to year with the rank of the markets under Wilson shifting from year to year. Danville, Va., with 4 sets of buyers, has ranked second for the period outselling Kinston and Greenville, N. C., each with 5

<sup>6</sup> These companies are American Tobacco Company, Export Tobacco Company, Imperial Tobacco Company, Liggett & Myers Tobacco Company, Reynolds Tobacco Company, and Universal Leaf Tobacco Company.

sets of buyers. Kinston has sold almost as much as Danville, however, and ranks third, with an average of 72 million pounds, for the period.

Rocky Mount, N. C., with 4 sets of buyers and average sales of nearly 70 million pounds, also outsold Greenville, N. C., which sold an average of 66 million pounds. This put these two markets in fourth and fifth places. Winston-Salem, N. C., was sixth with 65 million pounds. Two other markets, both having 4 sets of buyers, averaged over 50 million pounds--Fairmont, N. C., and Mullins, S. C.

The other markets, all having less than 4 sets of buyers, sell less than 50 million pounds in a season. Table 4 gives the number of markets by type having 1, 2, and 3 sets of buyers with the volume of gross sales (producers' sales plus resales) and the range of gross sales for 1951, the year when the largest volume of flue-cured sales was made. A total of over a billion and a half pounds was sold on all flue-cured markets.

TABLE 4.--Flue-cured tobacco markets with less than 4 sets of buyers: Number of markets and volume of sales, by sets of buyers and by type, 1951

Type	Sets of buyers								
	1			2			3		
	Mar-kets	Sales		Mar-kets	Sales		Mar-kets	Sales	
		Average	Range		Average	Range		Average	Range
	Number	Million pounds	Million pounds	Number	Million pounds	Million pounds	Number	Million pounds	Million pounds
11a-----	17	8.2	2.5-14.7	1	31.8	--	--	--	--
11b-----	6	8.0	2.8-11.9	3	30.5	28.0-34.8	1	47.2	--
12-----	10	12.2	3.2-16.1	3	27.7	17.2-34.5	--	--	--
13-----	13	7.6	2.7-11.3	1	21.5	--	3	40.0	36.0-44.3
14-----	13	5.7	2.3- 7.1	9	13.1	11.2-14.1	--	--	--

It will be noted that there is a wide variation in the volume of sales on markets with the same number of sets of buyers. In addition to the sets of buyers there are two important factors which influence the volume of sales--the length of the sales season and the production within the market area. The selling season is short for the markets in the Georgia-Florida belt selling type 14 and for many markets selling type 13. Most markets in the Eastern belt selling type 12 draw tobacco from the areas where flue-cured production is most intensive.

### Size of Markets--Floor Space and Basket Capacity of Warehouses

The 1950 flue-cured crop was sold in 489 warehouses (17, p. 9). However, the number of warehouses is not a significant measure of the size of the market. The warehouses vary greatly in the floor space available for the display and selling of tobacco. The amount of floor space available varies from 20,000 square feet to more than 1 million square feet on 5 markets--Wilson, Greenville, Kinston, and Fairmont in North Carolina, and Mullins, South Carolina. There are 5 markets with less than 50,000 square feet, as shown in table 5.

The floor space in warehouses varies from less than 10,000 square feet to over 220,000 square feet. Since it is often referred to in acres, it varies from less than a quarter of an acre to 5 acres.

Not all space is available for displaying and selling tobacco. There must be additional space for unloading, for the scales, for holding the baskets prior to being weighed,



for holding them prior to being placed in rows for display, for holding them until they are loaded on trucks, and for accommodating the growers, buyers, and others attending the auction. The actual use of space for displaying and selling the tobacco varies between warehouses and even more between markets, by variation of distance between rows and between the baskets in the rows.

TABLE 5.--Number of flue-cured markets, by floor space in warehouses and by types, 1950

Type	Markets with square feet of floor space in warehouses--					
	Under 50,000	51,000-100,000	101,000-250,000	251,000-500,000	501,000-1,000,000	Over 1,000,000
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
11a-----	2	9	6	1	2	--
11b-----	--	5	1	3	1	--
12-----	1	--	7	5	1	3
13-----	2	--	10	3	2	2
14-----	--	3	10	9	--	--
All-----	5	17	34	21	6	5

The number of baskets displayed under specific conditions becomes a more significant measure of warehouse capacity than does total area. Measuring warehouse capacity in terms of the number of baskets that can be displayed makes it possible to compare this with the market capacity as represented by the number of baskets that can be sold by the sets of buyers operating on the market in a day.

The smallest flue-cured market in 1950 had warehouse space sufficient to display 1,800 baskets, less than could have been sold by 1 set of buyers in a 5 1/2-hour day. In order to sell the full capacity of the market it would have been necessary to remove and replace some of the baskets previously sold. The largest market had space to display 92,600 baskets at one time, enough baskets to require 42 sets of buyers for 1 day or 1 set of buyers 42 days. The average capacity for all markets was 13,700 and nearly half of the markets had less than an 8,500-basket capacity.

The individual warehouses varied in capacity from less than 1,000 to 25,000 baskets. There were 53 warehouses capable of displaying more than 4,000 baskets each at one time. It would require 2 or more days for a set of buyers to sell the tobacco that could be displayed on each of these warehouses at one time.

### Warehouse Capacity vs. Market Capacity

The warehouses operating on the flue-cured market in 1950 could have displayed for sale 1,205,000 baskets at a time. On the other hand, if the markets had been selling at the rate of 400 baskets per hour for a 5 1/2-hour day with 140 sets of buyers, they could have sold 308,000 baskets. Warehouse capacity on this basis was practically four times market capacity. Table 6 shows this comparison for the markets with the same number of sets of buyers. Note that markets of type 12 had more warehouse capacity in relation to the capacity of the markets than had the other types, although type 13 had nearly as much. Also, the ratio of the warehouse capacity to market capacity tends to increase with the added sets of buyers. Thus it is highest on the markets of types 12 and 13 with 4 and 5 sets of buyers. The markets in type 11a with 2 and 3 sets of buyers had a high ratio of warehouse capacity to market capacity, as did the markets with 1 set of buyers in type 12.

TABLE 6.--Ratio of warehouse capacity to market capacity, by sets of buyers and by types of tobacco, 1950

Type	Ratio with sets of buyers			
	1	2 and 3	4 and 5	All
11a-----	1.9	5.2	3.0	2.5
11b-----	1.6	3.4	--	2.7
12-----	4.5	3.6	5.8	5.0
13-----	3.6	3.6	7.8	4.7
14-----	3.7	3.7	--	3.7
Average-----	3.1	3.7	5.6	3.9

Ratios of warehouse capacity to market capacity on individual markets are summarized in table 7, which shows the number of markets having ratios within the ranges given. For the individual markets, ratios varied from less than 1 to 8.5. There were 4 markets that could display more than 8 times the number of baskets they could sell in a day.

TABLE 7.--Number of markets with the given ratio of warehouse capacity to market capacity, by types, 1950

Type	Markets with ratio--					
	Up to 2.0	2.1-3.0	3.1-4.0	4.1-5.0	5.1 and over	Total
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
11a-----	12	4	1	2	1	20
11b-----	5	3	1	1	--	10
12-----	1	4	3	2	7	17
13-----	2	6	5	2	4	19
14-----	3	4	7	5	3	22
Total-----	23	21	17	12	15	88

Twenty-three markets (26 percent) had warehouses that could display up to twice the number of baskets of tobacco they could sell in a day; 38 markets (43 percent) could display from 2 to 4 times the baskets they could sell; and 27 markets (31 percent) could display over 4 times the baskets they could sell in a day. Types 12, 14, and 13 have all except 4 of the markets with a ratio of more than 4. The significance of this excess of warehouse capacity will be discussed later.

## FUNCTIONS PERFORMED ON AUCTION MARKETS

### Assembling

Flue-cured tobacco is produced on some 200,000 farms.<sup>7</sup> The quantity grown on each is small compared with the volume that is handled by an individual processor or manufacturer. As with other farm products, a necessary function at an early stage in tobacco

<sup>7</sup> There were 209,000 allotments in 1950 and 213,000 in 1952, as reported in the Report on Tobacco Statistics 1952 (19). The Census reports somewhat more farms, including sharecroppers.

marketing is assembly into larger quantities for economical handling! Not only is the physical handling of tobacco performed more economically at a central market place, but all other activities involved in the transfer of the tobacco are greatly simplified as compared with buying at the farm which prevails in the cigar areas. The tobacco companies send buyers to 88 auction markets instead of to the 200,000 farms. In their dealings the companies contact some 400 warehouse firms instead of each individual grower.

An important advantage to the grower is that the auction market offers a central point where he can sell all of his tobacco of whatever quality he has. Another is that the volume on most auction markets is sufficient to interest several buying firms; thus he has more than one prospective buyer for most of his lots.

### Standardization and Grading

Variations in the characteristics of the raw tobacco leaf are present on the same farm and even on an individual tobacco plant as well as on different farms. However, manufacturers seek leaf tobacco that has certain characteristics of value to them for the different products they make. For cigarettes they want a leaf with different characteristics than for wrappers for plug chewing or for smoking tobacco. Foreign buyers seek different qualities from those sought by domestic manufacturers, even for the same use. Of tobacco which goes into a specific use, some is more desirable and some is less desirable. For example, some qualities and types blend better than others for a given product.

Sorting of the leaves into lots of fairly uniform characteristics helps handling and processing of raw tobacco and blending the right kinds and qualities for each of the several consumer products. The end product of the blending process must be a uniform standardized mixture of all the tobaccos used to meet the demands of the mass markets of today.

The processes involved in the standardization and grading of tobacco begin at the farm and are carried on at various places in the marketing channel, ending with the final blending for manufacture of a specific product. The grower sorts his tobacco into several farm grades of more or less uniform tobacco.

The Federal inspector inspects the lots after they are in the sales row and places a Federal grade on each lot. The buyers also grade the lots they purchase. Each calls out his company grade into which he classified the pile of tobacco. The symbol for the grade is recorded by the ticket marker on the ticket placed on each lot. The grade arrived at by the buyer is his judgment of the company grade into which the lot of tobacco should be placed on the basis of the characteristics he recognizes in the lot.

Two individuals may differ in making such a judgment on a given lot, especially if there is considerable variation of tobacco in the lot and it is on the borderline of a grade. Variability of the light often makes it difficult to grade a lot closely, and the rapidity of sale allows the buyer little time to pass judgment on each lot. At best he can only give the lot an overall appraisal and select 1 or 2 samples from it. The lots are, therefore, checked by the buying company at the redrying plant, and any changes necessary are made in the grade of the lot. Sometimes this may even necessitate resorting the tobacco.

The tobacco placed in a particular grade will be redried and packed into hogsheads with other tobacco of the same grade. Each hogshead will be labeled with the grade symbol and other information--weight, crop year, type, market or locality, etc.--useful in the further handling and processing of the tobacco.

The grading of the tobacco by the buyer plays an important part in the pricing process. Because the grower sorts his tobacco into small units and sells each independently, the buyer is able to take only those piles or baskets suiting his use. At the same time there are sufficient buyers representing a wide variety of requirements to enable the grower to sell all his tobacco.



Physical matching of supply with demand is one of the most important auction market functions. It is also the basis for these main advantages of the auction market over the other systems of selling tobacco: The relative uniformity of each unit in which the tobacco is sold, appraisals by the Federal inspector, the warehouseman, and the several buyers bidding on the basket, and a market for all qualities.

### Federal Grades and Grading

Official standard grades have been developed for several types of tobacco, including the flue-cured types (9) under the Tobacco Inspection Act (15). Under this Act growers voted to have "free and mandatory" inspection at the markets they patronized. This was in effect in all flue-cured markets operating in 1951 and 1952. Each basket of tobacco offered for sale on such a market is given a Federal grade by an inspector employed by the Department of Agriculture, and the symbol for the grade is placed by the inspector on the ticket attached to the tobacco.

The Federal grader, like the grower and buyer, makes a judgment decision based on his interpretation of the standards and his appraisal of the lot of tobacco. This judgment, like that of the buyer, is affected by the speed at which he must operate and the variable light in different parts of the warehouse and at different times of day.

Although the lots are graded by the buyer and the Federal Government, tobacco is sold at auction markets by displaying it and by inspection by prospective buyers rather than by grade. There is no single set of standards used by the growers and the buying companies. Each has his own standards of sorting and classifying the tobacco. These differ not only among themselves but in varying degree from the Federal standards. There are more than a hundred grades for the flue-cured tobacco established under the Federal standards. Each grower sorts into only a few grades. The buying companies have varying numbers depending on the tobacco they buy and the use they expect to make of it. Each company has more grades than an individual grower but fewer than are established under the Federal standards.

It has been suggested that improvement in marketing tobacco and a lowering of costs could be made by the use of a single system of grading by all the interested parties and the sale of tobacco by grade. Sale by grade would reduce the large amount of floor space required for the display of the tobacco and the labor necessary in the present method of sale. There are considerable difficulties, however, in developing and securing the adoption of a single universal set of grading standards. Two factors are especially important, the wide variation in the recognizable characteristics of the tobacco leaf and the lack of precision in the relation of these to the intangible nature of the quality factors required for the different tobacco products (6, p. 912).<sup>8</sup>

### Risks and Losses on the Auction Floor

Tobacco is sold and delivered to the buyer on the same day or on the day following its delivery to the warehouses on most flue-cured markets. This rapid turnover reduces the risks from physical damage or from changes in economic conditions to a minimum. The warehouseman is responsible for the risk of fire and storm while the tobacco is in his possession and he carries insurance to cover such risks.

The grower, however, risks deterioration in the quality of his tobacco if it is held over several days before it is sold. If flue-cured tobacco is in "safe keeping order," having the proper moisture content, it can be held for several days without appreciable change in quality. However, if it becomes too dry it will crumble and break up, and if it becomes too moist, it will spoil. Therefore it is vitally important that the grower get his tobacco on the auction floor in the best condition.

---

<sup>8</sup> The Tobacco Division is conducting a study to determine the relation of quality factors to the characteristics recognized under the Federal standards.



There is some actual loss of tobacco in the handling of it on the auction floor, even under the best of conditions. Some bundles of leaves or individual leaves will be knocked off the basket. They may be replaced, or misplaced on another basket, or trampled underfoot. The loss that occurs is kept to a small amount in the warehouses where sufficient care in handling the tobacco is exercised. Some tolerance in weight is usually allowed by the buyers to take care of changes in moisture content and unavoidable changes in weight. If the loss in weight exceeds the tolerance, an adjustment is made. Similarly, if the weight of the tobacco exceeds the weight on the basket ticket by more than the tolerance, an addition is made to the payment.

A few growers or others offering tobacco for sale may try to conceal poor tobacco in a basket of better quality by "nesting" (concealing the low quality tobacco within that of higher quality) or other means of deception. Foreign matter is sometimes found in a basket of tobacco. The buyer is permitted to reject such a basket or request an adjustment from the warehouseman, who is held responsible for any deception practiced in the selling or handling of the tobacco.

## Selling and Buying

The loose-leaf tobacco auction market is the primary market for flue-cured and other types sold by this method. There are no large central markets, nor any future markets for tobacco, which have a part in the pricing. The price-making forces focus on the tobacco auction market, although not all the decisions affecting or directing those forces are made there. Both the growers and the buyers make choices off the auction floor which affect the buying and selling prices.

The grower is anxious to sell his tobacco when it is cured and prepared for market and in good condition. He has no means of redrying to prepare it for storage, and also, important to most growers, he desires to secure promptly a return for his effort in growing and preparing the crop for market. The progress of the crop depends upon the season's weather over a more or less wide area, and each grower finds many others ready to place their tobacco in the warehouse at the same time. The motor truck has made it feasible to market tobacco at more distant markets and gives the grower a wider choice among markets. However, most tobacco is hauled to a market within 20 miles or less of the farm.

The further choices he has in the price-making process are to accept or reject the bid, and, if the bid is equal to or less than the loan rate, whether to place the tobacco under the loan. Generally, on flue-cured markets the highest bid made at the sale is not rejected unless it is below the loan rate. The great majority of growers are eligible to place their tobacco under loan and usually authorize the warehouseman to do so when the bid is less than or equal to the loan. Growers are reluctant to reject bids above the loan rate because for that part of the season when the market is operating at capacity they will not be able to offer it until the next sale, a day or two later. The warehouseman, in turn, is reluctant to advise the grower to reject a bid as every rejection lessens his volume of sales and thus his returns.

The seller of flue-cured tobacco should have a considerable body of information so that he can make intelligent decisions about the sorting, displaying, and selling of his tobacco. He should know the prices paid at different markets and warehouses and the forces which affect prices and cause price differences between markets and warehouses and at different times within the marketing period for different grades of tobacco.<sup>9</sup> The seller must also know the demand for different qualities of tobacco and the changes in the utilization of the different qualities. In addition, he needs to know how to sort his tobacco to meet demands for the different qualities and how to display tobacco to the best advantage.

---

<sup>9</sup> Basket Price Variations for Burley Tobacco, (4) gives the type of information needed.

Several State divisions of markets, in cooperation with the Tobacco Division of the Agricultural Marketing Service, U. S. Department of Agriculture, are doing much along these lines. However, more needs to be done. The growers would be benefited if more of such services could be provided to instruct them in better preparation, displaying, and marketing of their tobacco and, if more information could be made available to them.

Tobacco companies have several choices to make in carrying out the buying function. Most of the decisions, especially the more important ones, are made by the appropriate company officials in their offices or conference rooms. They decide the amount of any type of tobacco to buy, the grades or qualities to buy, the price to pay for the different qualities or grades, the markets on which to have their own representatives, and the markets on which to buy through some other company operating on the market.

The companies, especially the larger ones, are much better informed about conditions affecting the market and market prices than are the growers. They have most of the information they need in their own records and in their estimates of what each will do. The representatives of the companies travel through tobacco areas during the growing season to get information on the extent and quality of the crop which they transmit to the home office.

The buyer operating on the floor also has certain decisions to make. An important one is whether or not each basket meets the standard of a grade he is to buy. If it falls into a grade he wants, he must decide what to offer to get it, if possible, without exceeding his price limit. He must also decide the probable extent of any competitor's interest in it. The rapidity of sales makes only one or a few bids possible by each representative on a basket. Therefore, a buyer's bid must be high enough to take a quantity of that particular quality to meet his quota but not so high as to raise unduly the average cost of his company's purchases.

If one buyer decides he will have no competition for a basket he may make a low bid, and if he is correct it will be "knocked down" to him. Should one or more other buyers be interested, bidding may go to the highest price that any one of them can give for the grade in which he expects to place it. If a low bid is offered it may draw in a speculator who sees a chance to rework or reoffer the basket at a profit; or another buyer may decide that his company can use it at a bid above the low bid offered.

With the auction method of selling tobacco, the range in price for tobacco of approximately the same quality may be wide (3, pp. 926-927, and 4, p. 3). The rapidity of sale and arrival at a judgment on the elusive qualities of the tobacco leaf and the varying reaction of competing buyers which each buyer must make in bidding is an adequate explanation of this range.

From the standpoint of a buying company any error in bidding judgment will average out through the large number of units bought. To the grower, however, these variations in the price for the same quality are much more important. Any lot or basket of tobacco is a much larger proportion of his total sales than of the buying company's total purchases. The erratic bid does not average out for him because he usually has very few lots, and the high bids on some baskets will not offset the low bids on others.

### Payment and Financing the Transfer of the Tobacco

A valuable service performed by the warehousemen is that of making payment to the sellers and securing payment from the buyers. Within the hour after tobacco is sold the grower can receive cash or a check for the amount due him. The warehouseman issues one check to the grower in payment for all the tobacco sold, whether to one or several buyers. He in turn bills each company for all the tobacco purchased on that day, no matter how many growers were involved. This seems to give the buyers and sellers a maximum simplification of their financial and market record requirements. The time interval between the issuance of a check to the grower and receipt of a check from the purchaser is relatively short, a day, a few days, or a week. Nevertheless, a substantial line of



credit with banks in the area is required by each warehouse firm to cover the financing of the tobacco for that time.

### Market Information

Boards of Trade in some auction markets put out limited information on growing conditions in their areas and prices in their markets. This is to attract buyers and sellers to a particular market and lacks accuracy and adequacy for use by buyers or sellers.

A Market News Service was authorized in the Tobacco Inspection Act (15) to provide market information for the use of anyone interested, especially growers. Press releases are issued daily to newspapers and radio stations. These give information by type on market conditions, supplies, and quality of offerings, price level changes, actual prices for a number of grades, and the average price for all previous day sales. The information covers prices from the forenoon sales on 4 or 5 markets for each type. A weekly report distributed to all warehouses selling the type shows the average price for the week for each Federal grade selling in any volume. The purpose of this information is to enable the grower to compare the offer he has received with the average paid for the same grade during the past week. Thus he can more intelligently decide whether or not he should accept the offer made on his tobacco.

### The Services Rendered by the Warehouseman

The building, equipment, and personnel required to operate an auction warehouse are provided by the warehousemen, who are paid for these services. They may be classified as the physical handling of the tobacco, paper work (recording, check writing, bookkeeping, billing, etc.), supervision of the operation of the business, and the service of the auctioneer.

The physical operations are rather simple since there is no complicated manipulation of the tobacco, such as mixing, sorting, and packaging, and no processing. Some assistance is provided to the grower in unloading the tobacco from the truck and placing it, as sorted, a grade on a basket. The extent of this assistance varies from one warehouse to another and from time to time. With labor scarce during World War II, this assistance was reduced to a minimum. When the markets are crowded, the grower is often willing to patronize a warehouse rendering a minimum of service.

The basket of tobacco is trucked to the scales where a weigher licensed by the State weighs it and prepares a ticket bearing the name of the owner and the weight of the tobacco. The basket is then trucked to a place in a row for the sale, or if the rows are full it is placed to one side for later display and sale. After the sale the baskets are usually moved directly from the row to the truck of the buyer. If the buyer is not loading immediately after the sale, he will have his employees place the baskets at some vacant place in the warehouse.

Record keeping and other paper work of the auction warehouse require competent personnel. The bookman and clipman, who follow each sale and calculate its value, are highly skilled rapid calculators. In addition, there are bookkeepers, check writers, and other workers, depending upon the size of the warehouse and the volume of tobacco handled. Business machines are becoming widely used for many of these warehouse operations.

The firms operating the warehouses may be individual proprietors, partnerships, corporations, or cooperatives. Whatever the type of ownership, one or more of the owners take active part in the management because in the larger auction warehouses, operating close to capacity, there are many activities going on at many places at once.

Trucks bringing the tobacco to the warehouse must be handled in an orderly fashion to avoid congestion. The tobacco must be unloaded and placed on the baskets, and trucked to the scales and rows for display in time for the sale. The office work must operate

smoothly in order to get the checks to the growers within a short time after the sales are completed.

The conduct of the sale requires 1 or 2 of the owners or hired employees working at rapid pace so that the maximum amount of tobacco permitted under the rules can be sold. Sales must be started promptly, since any time loss means volume loss and loss of returns. Buyers must be on hand and kept interested in the offerings. Relationships with the growers and the tobacco companies must be maintained to keep them satisfied with warehouse operation.

The warehouseman also furnishes the service of the auctioneer. Each of the larger firms has an auctioneer and a substitute, while one smaller firm may share an auctioneer and a substitute with other firms.

## COSTS IN MARKETING FLUE-CURED TOBACCO

### Costs to the Grower

Growers selling on the auction market pay the warehousemen for the services they render. The warehousemen provide the services of the auctioneer and other services in conducting the tobacco auction.

There are 3 fees paid by the grower: A commission of 2 1/2 percent on the value of the tobacco, an auction fee of 15 cents for each pile of 100 pounds or less and 25 cents on each pile of over 100 pounds, and a weighing and handling fee of 10 cents on all piles of 100 pounds or less and 10 cents for each additional 100 pounds. These fees are maximums established by State law in all States growing flue-cured tobacco, except Virginia. Custom and acceptance by growers have made these maximum charges the standard charges in all States growing it, including Virginia. The warehousemen consider it unethical to offer to charge rates below these.

A grower with considerable influence among his neighbors may be hired to solicit business or to help in some capacity or may receive some other form of inducement to patronize a particular warehouse or to secure the patronage of other growers.

The commission is the most important charge for tobacco selling at more than \$10 a hundred pounds. At that price, for a basket weighing 175 pounds, the weighing and auction fees combined will exceed the commission by a small amount. The price at which the tobacco sells is an important factor in determining the charges. This can be seen in table 8 where the charges are calculated for a basket of tobacco weighing 175 pounds.

TABLE 8.--Auction charges for selling a basket of 175 pounds of flue-cured tobacco at specified prices, by item

Item	Charges when price per 100 pounds is--		
	\$10	\$25	\$50
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Commission-----	0.44	1.05	2.19
Auction fee-----	.25	.25	.25
Weighing and handling fee-----	.20	.20	.20
Total-----	.89	1.50	2.64

It can be seen from these examples that the warehousemen's interest and the farmers' interest are parallel under this method of determining the charges. Both are interested in obtaining the highest price for the tobacco.



The total of these charges paid by flue-cured producers in 1950 was 20.3 million dollars. The somewhat larger volume but slightly lower average price increased the charges to 22.6 million dollars in 1951. In 1952 they dropped to 20.5 million dollars because of a somewhat lower volume and lower value.

### Total Returns, Costs, and Net Returns to the Warehouseman

The warehousemen's returns are from the fees charged to sellers, the spread on the leaf account, and the receipts from the sale of pickups and floor sweepings. This income for 1950 and 1951 is shown in table 9, and the percentage distribution of this income is given in table 10.

Some warehousemen have additional income, not included here, from rental of the warehouses for other purposes than the auction-selling of tobacco.

Fees and commissions in the sale of the growers' tobacco are by far the most important source of income and ranged from 72 to 92 percent for the different types in 1950 and 1951. The unusually high proportion for types 12 and 14 in 1950 is due to leaf account losses which lowered total returns.

In type 12, the total was reduced below the receipts from the fees and commissions received from the sale. In 1951, the spread in the leaf account was the second most important source of income and varied from 4.5 percent for the warehouses selling type 11b to 8.4 percent for those selling type 13.

In 1950, the warehousemen selling type 12 and type 14 as a whole suffered losses in their leaf account, and those selling 11b made small profits. Those in type 13 had a substantial spread, even in that year, equal to 9.2 percent of total returns. The sales of pickups and floor sweepings are very large in the warehouses selling type 14. One important reason is that the tobacco in the Georgia-Florida Belt is not tied into hands or bundles as in the other belts. The loose leaves easily fall or are knocked from the baskets.

The total income of the warehousemen must cover wages and salaries, depreciation, repairs, supplies, taxes, interest, and utility charges, among other expenses. The difference between these costs and the total income as given above is considered as the net return, including the return to the owner or owners for the time and effort they contribute to the operation of the auction. Tables 11 and 12 give the estimated costs of the warehousemen for handling the crop of 1950, and the percentage of the commission and fees required to cover these costs.

The high prices of 1950 and the resulting high commissions made the costs a smaller than normal percentage of the commission and fees. In 1951, prices were lower and costs were higher than in 1950. It should be noted that the costs given in the table do not include a salary for one of the owners. Approximately the full time of one owner was shown statistically to be devoted to active participation in the operation of the business of the firm (12). The cost of wages and salaries will vary depending on the number of active partners and the volume of business handled by the firm. For the 1950 flue-cured crop, approximately 36 percent of the income from fees and commissions went for wages and salaries, 22 percent went for the costs in providing the building and equipment, and 12 percent paid for such miscellaneous items as bank charges, warehouse association and board of trade dues, advertising, and supplies.

The net return to the firms operating the warehouses in 1950 averaged from about \$5,000 for those operating in type 14 to \$32,000 for those operating in the Middle Belt. The low returns to those operating in Florida and Georgia were due to the shorter season and to the loss in the leaf account in 1950. Loss in the leaf account also lowered the returns of firms operating in Eastern North Carolina. See table 13.

TABLE 9.--Total return to warehousemen from commission, fees, and sales of tobacco by types, 1950 and 1951

1950

Type	Commission and fees		Spread on leaf account	Sales from pickups and floor sweepings	Total returns
	Producer's sales	Other sales			
	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
11a-----	4,617	163	139	134	5,053
11b-----	2,622	81	8	154	2,865
12-----	6,774	214	<sup>1</sup> -807	390	6,571
13-----	4,463	205	491	192	5,351
14-----	1,864	90	<sup>1</sup> -399	415	1,970
Total-----	20,340	753	<sup>1</sup> -568	1,285	21,810
1951					
11a-----	4,357	150	352	134	4,993
11b-----	2,744	87	143	149	3,123
12-----	7,983	206	514	431	9,134
13-----	5,019	256	511	212	5,998
14-----	2,482	107	212	652	3,453
Total-----	22,585	806	1,732	1,578	26,701

<sup>1</sup> Loss.

TABLE 10.--Percentage distribution of returns to warehousemen by source

1950

Type	Commission and fees		Spread on leaf account	Sales from pickups and floor sweepings	Total returns
	Producer's sales	Other sales			
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
11a-----	91.4	3.2	2.7	2.7	100.0
11b-----	91.5	2.8	.3	5.4	100.0
12-----	103.1	3.3	<sup>1</sup> -12.3	5.9	100.0
13-----	83.4	3.8	9.2	3.6	100.0
14-----	94.6	4.6	<sup>1</sup> -20.3	21.1	100.0
Total-----	93.3	3.4	<sup>1</sup> -2.6	5.9	100.0
1951					
11a-----	87.3	3.0	7.0	2.7	100.0
11b-----	87.9	2.8	4.5	4.8	100.0
12-----	87.4	2.3	5.6	4.7	100.0
13-----	83.8	4.3	8.4	3.5	100.0
14-----	71.9	3.1	6.1	18.9	100.0
Total-----	84.6	3.0	6.5	5.9	100.0

<sup>1</sup> Loss.

TABLE 11.--Estimated costs to warehousemen in handling flue-cured tobacco, by items and by types, 1950

Types	Wages <sup>1</sup>	Building and equipment	Other	Total
	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
11a-----	1,762	658	566	2,986
11b-----	963	395	307	1,665
12-----	2,454	1,575	809	4,838
13-----	1,671	1,222	544	3,437
14-----	717	697	256	1,670
Total-----	7,567	4,547	2,482	14,596

<sup>1</sup> Based on an average of one owner actively engaged in the operations of each firm and does not include his salary.

TABLE 12.--Cost to warehousemen as a percentage of fees and commissions in the sale of tobacco by types, 1950

Types	Wages	Building and equipment	Other	Total
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
11a-----	36.9	13.8	11.8	62.5
11b-----	35.6	14.6	11.4	61.6
12-----	35.1	22.5	11.6	69.2
13-----	35.8	26.2	11.7	73.7
14-----	36.7	35.7	13.1	85.5
Total-----	35.9	21.6	11.8	69.3

TABLE 13.--Gross and net returns to firms operating warehouses, by types of tobacco, 1950

Type	Gross return	Cost	Net return	Firms	Return per firm
	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>Number</i>	<i>Dollars</i>
11a-----	5,053	2,986	2,067	86	24,035
11b-----	2,865	1,665	1,200	37	32,432
12-----	6,571	4,835	1,736	85	20,424
13-----	5,351	3,437	1,914	79	24,228
14-----	1,970	1,670	300	60	5,000
Total-----	21,810	14,593	7,217	347	20,798

The cost per hundred pounds of tobacco handled varied from an average of 95 cents in the Old Belt to \$1.17 in the Georgia-Florida Belt. The returns from fees and commissions per hundred pounds were \$1.45 for the warehouses selling type 14 tobacco to \$1.66 for those selling type 12 (table 14).



TABLE 14.--Commission and fees, costs, and margin per 100 pounds, in handling tobacco, by types, 1950

Type	Commission and fees	Costs	Margin of charges over costs
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
11a-----	1.59	0.95	0.64
11b-----	1.65	.98	.67
12-----	1.66	1.08	.58
13-----	1.64	1.14	.50
14-----	1.45	1.17	.28
Total-----	1.62	1.06	.56

The shorter selling season for types 13 and 14 results in fewer sales for the season for a given firm. Overhead costs, especially building expenses, cannot be reduced in line with the smaller volume. This results in higher total costs per hundred pounds for firms selling those types. The price for type 14 being lower, the commission is also lower. The higher cost and the lower commission result in a smaller margin per hundred pounds for that type. The low margin raises the question, are the charges adequate for such a short season? The warehousemen make up for this by their sales of pickups and floor sweepings, which amounted to 31 cents a hundred pounds in 1950.

The difference in total costs per hundred pounds between the different types is largely the result of the differences in building and equipment cost. Warehouses selling the types with higher costs have more space in relation to the volume sold, and maintenance cost of this space is spread over a smaller tobacco volume. The result is higher costs per hundred pounds sold. Volume sold per square foot of floor space, cost per hundred pounds for the building and equipment, and total cost per hundred pounds are shown in table 15.

The lower volume of tobacco sold per square foot of floor space for the firms selling types 13 and 14 is due in part to the shorter selling season for those types. In part, the lower volume of sales in relation to the floor space was the result of greater over-expansion of space for the markets selling types 12, 13, and 14 in 1950 as compared to the markets selling types 11a and 11b. Markets selling type 14 could display about 4 times as many lots as they could sell in a day and the markets selling types 12 and 13 about 5 times as many; while those selling types 11a and 11b had space to display less than 3 times as many baskets as they could sell. Even some of the markets selling the latter two types have more space than needed for the volume sold, and their costs are higher than they would be if there were no excess capacity.

TABLE 15.--Sales of tobacco per square foot of space, and cost of building and equipment, per 100 pounds of tobacco sold, by types, 1950

Type	Tobacco sold per sq. foot	Cost per 100 pounds tobacco sold	
		Building and equipment	Total
	<i>Pounds</i>	<i>Cents</i>	<i>Cents</i>
11a-----	86	21	95
11b-----	78	23	98
12-----	51	35	108
13-----	45	40	114
14-----	28	49	117
Total-----	52	33	106

## Gross Margin Taken at the Auction Markets

Charges paid by the growers make up the greater part of the margin taken at the auction warehouse in the marketing of flue-cured tobacco. The gross margin consists of items that explain the difference between the net return at the warehouse to the grower and the payment made by the final purchasers--the manufacturers and the leaf tobacco dealers--to the warehousemen. Other items beside the charges which make up this margin are the spread on the resales made by the warehousemen and pinhookers and the sales by the warehousemen of pickups and floor sweepings. The amounts of these items in 1950 and 1951 are shown in table 16, and the percentage distribution is shown in table 17.

The warehouse charges make up 74-94 percent of the gross margin except for the markets selling type 14. Warehousemen on these markets received over a sixth of the gross margin from the sale of pickups and floor sweepings. The spread--the margin between the purchases and the resales of the warehousemen and pinhookers--constitutes from an eighth to a sixth of the gross margin for the flue-cured markets as a whole. The low total of this item for the markets selling type 12 in 1950 was due to losses by some warehousemen on their leaf accounts.

### Other Costs in Operating Flue-Cured Auction Markets

Costs of operating the auction markets are not only those of the warehousemen but include other costs. Tobacco companies must have at least one representative on each set of buyers. They also provide assistants for buyers and helpers to handle the tobacco preliminary to transporting it to the redriers. There are from 7 to 10 tobacco companies who have representatives on the sets of buyers operating on the flue-cured markets. The larger number are found on some of the largest markets. There are six companies which have representatives on nearly every set of buyers operating on the flue-cured markets. There are from 1 to 4 independent companies operating on each market.

Each company with a representative on a set of buyers will have one man as a buyer and assistants to check the baskets bought, keep the records, and supervise several laborers to "sheet" the baskets (cover with a burlap sheet) and place them in position to be loaded on trucks or held for future loading. Some companies purchasing large volumes have more than one buyer for each set of buyers to take turns as members of the set. These larger firms may have a supervisor stationed on a market with more than one set of buyers in addition to the "circuit rider" who supervises several markets. It is estimated the company cost of providing representatives, assistants, and labor on flue-cured markets was about 4 million dollars in 1951.

The Federal government is required by the Tobacco Inspection Act to provide a minimum of two inspectors for each set of buyers on all markets where the growers have voted to have this service. The maximum number of lots an inspector can handle is 1,200 in a day. With the capacity of a market in a 5 1/2-hour day at 2,200 baskets for each set of buyers, there must be 2 inspectors for each set on the market. In addition, there must be additional inspectors in training ready to substitute for any who may be incapacitated. Supervising inspectors are needed to check on the accuracy and consistency of the grading.

The cost of the inspection work on flue-cured markets was nearly a million dollars in 1951, the year when gross sales were nearly 1.6 billion pounds. The cost of the Market News Service operated jointly with the States brought the total cost to over a million dollars in that year.

TABLE 16.--Charges on sales of tobacco, by types, 1950 and 1951

1950

Type	Warehouse charges	Spread on resales	Sales from pickups and floor	Gross margin
	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
11a-----	4,617	826	134	5,577
11b-----	2,622	355	154	3,131
12-----	6,774	66	390	7,230
13-----	4,463	1,383	192	6,038
14-----	1,864	148	415	2,427
Total-----	20,340	2,778	1,285	24,403
1951				
11a-----	4,357	1,186	134	5,677
11b-----	2,744	537	149	3,430
12-----	7,983	1,417	431	9,831
13-----	5,019	1,458	212	6,689
14-----	2,482	653	652	3,787
Total-----	22,585	5,251	1,578	29,414

TABLE 17.--Percentage distribution of margin by specified items, 1950 and 1951

1950

Type	Warehouse charges	Spread on resales	Sales from pickups and floor sweepings	Gross margin
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
11a-----	82.8	14.8	2.4	100
11b-----	83.8	11.3	4.9	100
12-----	93.7	.9	5.4	100
13-----	73.9	22.9	3.2	100
14-----	76.8	6.1	17.1	100
Average-----	83.3	11.4	5.3	100
1951				
11a-----	76.7	20.9	2.4	100
11b-----	80.0	15.7	4.3	100
12-----	81.2	14.4	4.4	100
13-----	75.0	21.8	3.2	100
14-----	65.5	17.3	17.2	100
Average-----	76.8	17.8	5.4	100



## SOME POSSIBILITIES OF INCREASING EFFICIENCY AND REDUCING COSTS

The tobacco auction marketing system is a functioning whole with more or less independently functioning parts and not a mere collection of independently operating firms. Not only does each firm function as a unit, but each market functions as a unit with respect to certain activities. Also, all the markets of a type act as a unit with respect to other activities. In addition, all the flue-cured markets function as a unit. The groups which make up these units include warehousemen, growers, and tobacco companies. Each unit functions with the aid of its rules.

This study is concerned with the flue-cured marketing problems that are related to the actions of these several units. These problems can be solved most satisfactorily when it is recognized that group action as well as individual action is required.

The problems considered in this study are the number of firms, the warehouse facilities (especially floor space), the number of markets, the sets of buyers required to adequately handle current flue-cured crops, and the specific practices of resales and pickups. Except for resales and pickups, these problems are related to costs and the efficient operation of the tobacco auction marketing system largely through the effect they have on the volume of business handled by the different marketing agencies.

### Some Factors Influencing Efficiency and Costs in Auction Markets

The next sections present some of the factors influencing the efficiency of marketing flue-cured tobacco and their effects on costs: The effect of business volume on efficiency, costs, and net returns to warehouse operators; the results of warehouse operators striving for increased returns on the expansion of warehouse space and the number and size of warehouse firms; the effect of the volume handled per market on the efficiency and costs of operations of the buying companies and the Federal Government on the market and the relation of the number and size of markets to their costs; a discussion of the effect of resales and pickups on the margin taken at the auction market; and some suggestions for joint considerations by the growers, warehousemen, and buying companies of their common problems.

#### The Relation of Volume of Sales to Efficiency and Costs of Warehouse Firms

The efficiency in the use of floor space in flue-cured auction warehouses for the 1950 season varied from 10 pounds to 225 pounds of tobacco sold per square foot of floor space. By this measurement a warehouse of 20,000 square feet selling 2 million pounds is as efficient as a 50,000 square foot warehouse selling 5 million pounds or a warehouse of 100,000 square feet selling 10 million pounds. The effect of the volume of sales on the efficiency in the use of warehouse space and equipment is given in table 18.

The efficiency variation as the flue-cured warehouses operated in 1950 is shown in table 19. The table gives the average and the range for all markets and for all warehouses by types. The lower average for the markets of type 13 and type 14 is in large part due to the shorter selling season for those types. The low rate for the markets of type 12 compared with those of types 11a and 11b, where the selling seasons are about the same length, is the result of the greater overexpansion of warehouse space on type 12 markets. Overexpansion of space is also important in reducing the efficiency in the use of space in type 13.

The effect of this efficiency variation on the cost of providing the warehouse and equipment is given in table 20. The cost of the warehouse and equipment is estimated at 17 cents per square foot of warehouse space.

The average and range in the estimated costs of providing the warehouse and equipment for the 1950 season for the markets of the different types is shown in table 21. These costs varied from 8 cents to \$1.35 per hundred pounds of tobacco sold. The effect

TABLE 18.--Pounds of tobacco sold per square foot of floor space for warehouses of specified size with specified volume of sales

Volume of sales	Tobacco sold per square foot in warehouses of--		
	20,000 sq. ft.	50,000 sq. ft.	75,000 sq. ft.
<i>1,000,000 pounds</i>	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
1-----	50	20	<sup>1</sup> 13
2-----	100	40	<sup>1</sup> 27
3-----	150	60	40
4-----	200	80	<sup>1</sup> 53
5-----	<sup>2</sup> 250	100	<sup>1</sup> 67
6-----	<sup>2</sup> 300	120	80
7-----	<sup>2</sup> 350	140	<sup>1</sup> 93
8-----	--	160	<sup>1</sup> 107
9-----	--	180	120
10-----	--	200	<sup>1</sup> 133
15 <sup>3</sup> -----	--	<sup>2</sup> 300	200

<sup>1</sup> The data are to the nearest pound.

<sup>2</sup> Theoretically possible but there was no warehouse operating at these rates in 1950.

<sup>3</sup> There are only a few firms selling over 10 million pounds.

TABLE 19.--Range and average of amount of tobacco sold per square foot of warehouse space for markets and warehouses, by type, 1950

Type	Average	Range	
		Markets	Warehouses
	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
11a-----	86	35 - 130	29 - 225
11b-----	78	27 - 116	24 - 136
12-----	51	22 - 81	22 - 181
13-----	46	32 - 76	19 - 92
14-----	28	12 - 38	10 - 54
All types-----	52	14 - 130	10 - 225

of the shorter selling season for the markets selling types 13 and 14 are brought out again in this table of unit costs, as is the overexpansion of the warehouse space in the markets of type 12. It should be noted that these costs are for 1950. Overexpansion of warehouse space has continued, and the relation of the costs between the different types has probably changed. Costs are also higher now than in 1950.

Wages and salaries are the largest cost item in the operation of auction warehouses and average 55 to 60 percent of the total costs. Sales volume also affects the efficiency with which labor and management is used in the warehouses. Certain positions must be filled no matter how small a volume of tobacco is handled, and no increase in number of persons in these positions is needed until a rather large volume of tobacco is reached. A licensed weigher must be hired, but a second one need not be until the volume exceeds the quantity the first can weigh in a day. A bookkeeper is needed, but another will not be required until the volume of business greatly increases.

TABLE 20.--Cost for warehouse and equipment per hundred pounds of tobacco sold in warehouses of specified size with specified volume of sales

Volume of sales	Size of warehouse in square feet		
	20,000	50,000	75,000
	Cents	Cents	Cents
1-----	34.0	85.0	127.5
2-----	17.0	42.5	63.7
3-----	11.3	28.3	42.5
4-----	8.5	21.2	31.9
5-----	6.8	17.0	25.5
6-----	5.7	14.2	21.2
7-----	4.8	12.1	17.8
8-----	4.2	10.8	15.9
9-----	3.6	9.4	14.2
10-----	3.4	8.5	12.7

TABLE 21.--Range and average in cost for warehouse space and equipment, per 100 pounds of tobacco sold, for markets and warehouses, by types, 1950

Types	Range		Average
	Markets	Warehouses	
	Cents	Cents	Cents
11a-----	13 - 49	8 - 59	21
11b-----	15 - 63	13 - 71	23
12-----	21 - 77	9 - 77	35
13-----	22 - 53	18 - 89	40
14 <sup>1</sup> -----	36 - 96	25 -135	48
All types-----	13 - 96	8 -135	33

<sup>1</sup> The cost assumed here is 13.5 cents per square foot instead of 17 cents for the other types. The cost of construction for the type of warehouse used is less for these markets.

The management is the most important of the relatively fixed labor items and is relatively fixed for a considerable range in volume of tobacco. The sales supervisor can conduct the sales for a fraction of an hour or for several hours, depending on the amount of selling time. The floor manager must be on hand to see that the tobacco moves to the weigher and to the sales row for a wide range in the quantity of tobacco that comes to the warehouse. The same is true for most of the tasks that are involved in the warehouse. These conditions make most of the labor a controlled item for considerable ranges of volume handled, varying with the tasks performed. Firms handling small volumes can make some adjustments by having some employees perform several tasks or assist others when additional help is needed. Salaries and wages do increase with the volume handled. However, the conditions which tend to fix certain of the labor requirements for a considerable volume result in lower average unit costs for the larger volumes than for the smaller.

The effect of volume on labor costs is shown in table 22. These data apply to all the labor costs including the salaries of the managers and supervisors. In many warehouse firms these positions are occupied by the owners who are not paid fixed salaries but



share in the net returns to the firm, which include in those cases any payment for management services.

TABLE 22.—Number of firms and cost of wages and salaries in handling flue-cured tobacco, by given volumes of sales, 1950

Sales	Firms <sup>1</sup>	Wages and salaries		
		Average per firm <sup>2</sup>	Per 100 pounds of tobacco	Tobacco sold per dollar
<i>Million pounds</i>	<i>Number</i>	<i>Dollars</i>	<i>Cents</i>	<i>Pounds</i>
1-----	12	8,514	85.1	118
2-----	45	14,515	72.5	138
3-----	30	20,516	68.3	146
4-----	38	26,517	66.8	150
5-----	33	32,518	65.0	154
6-----	8	38,519	64.2	156
7-----	10	44,520	63.6	157
8-----	13	50,521	63.1	158
9-----	9	56,522	62.8	159
10-----	5	62,523	62.5	160
13-----	5	80,526	61.9	162

<sup>1</sup> Firms operating in markets selling types 11a, 11b, and 12. Because of the shorter season for types 13 and 14, the data do not apply as well.

<sup>2</sup> These estimates are based on an analysis of wage and salary payments for 118 firms operating flue-cured warehouses as reported to the Bureau of the Census in the Census of Business, 1948, compared with the pounds of tobacco sold by those firms in 1948 reported to the former Tobacco Branch, Production and Marketing Administration. They have been adjusted for the increase in wages from 1948 to 1950.

The efficiency with which labor is utilized increases rather rapidly with the increase in the volume of business up to 5 million pounds.

At a volume of 1 million pounds the warehousemen sold an average of 118 pounds for each dollar expended for wages and salaries. This was increased to 154 pounds at a volume of 5 million pounds. The costs per hundred pounds were reduced from 85 cents to 65 cents, or by 20 cents.

#### The Relation of Volume of Sales to Warehouse Returns

Warehousemen are interested in the net return after their costs have been covered. The net is affected by variations both in total income received and in total costs. There are a number of smaller cost items besides the costs of labor and management and of providing the warehouse and equipment. The largest of these is the payment to banks for the credit needed to cover payments to growers before receiving payment from buyers. Another important item is the insurance on the leaf tobacco while in possession of the warehousemen. In addition, there are office supplies, advertising and payments to attract business and build goodwill for the firm, and the cost of utilities. These miscellaneous costs constitute from 12 to 18 percent of the total costs. They tend to increase in proportion to the increase in the volume of business. For purposes of this study they are considered to be 15 cents a hundred pounds of tobacco sold.

The total or gross returns considered here are the returns from the warehouse charges, the commission, and fees for selling the tobacco. The commission varies with the value, and the fees vary somewhat with the weight of each basket sold. For the

purpose of these estimates the value is taken at the average price for 1950 and the weight of the basket at the average for that year. The returns increase directly with the increase in the volume of sales. The same is true with the minor costs mentioned above, which are estimated at 15 cents per hundred pounds of tobacco.

Costs per pound for providing the warehouse and equipment and for labor and management decreased as volume increased. Because of this relationship total costs do not increase as rapidly as the volume, and the net returns increase relatively more rapidly than total returns.

This is brought out in table 23. The range in volumes illustrated may appear wide for a warehouse of fixed size, such as 75,000 square feet. However, in the 1950 season the range that actually obtained for warehouses of approximately that size was from 2 million pounds to 9 million pounds, or a range of from 27 pounds to 120 pounds per square foot of floor space.

The cost of providing the warehouse of that size and the equipment to go with it for a season is \$12,800. The cost of labor and management varies as given in table 22, and the other costs at 15 cents per hundred pounds vary with the volume from \$3,000 at 2 million pounds to \$13,500 at 9 million pounds of tobacco sold. The total cost increases from \$30,300 to \$82,800. The net returns vary from \$2,000 at 2 million pounds to \$62,500 at 9 million pounds.

TABLE 23.--Revenue, costs, and net return for tobacco sold in a warehouse of 75,000 square feet, by given volume of sales, 1950

Sales	Revenue	Costs	Net return
<i>pounds</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
2-----	32,300	30,300	2,000
3-----	48,400	37,800	10,600
4-----	64,600	45,300	19,300
5-----	80,700	52,800	27,900
6-----	96,800	60,300	36,500
7-----	113,000	67,800	45,200
8-----	129,100	75,300	53,800
9-----	145,300	82,800	62,500

The same information on a unit basis is given in table 24. Total costs vary from a high of \$1.52 a hundred pounds of tobacco with a volume of 27 pounds per square foot to 92 cents when the volume is 120 pounds per square foot. The net returns vary in the opposite direction from a low of 10 cents a hundred with 27 pounds sold per square foot of space to 69 cents with the largest volume.

TABLE 24.--Sales per square foot of space, cost, and net return per 100 pounds in a warehouse of 75,000 square feet, by given volume of tobacco sales, 1950

Sales	Sales per square feet	Cost	Net return
<i>Million pounds</i>	<i>Pounds</i>	<i>Cents</i>	<i>Cents</i>
2-----	27	152	10
3-----	40	126	35
4-----	53	113	48
5-----	67	106	56
6-----	80	100	61
7-----	93	97	65
8-----	107	94	67
9-----	120	92	69

# Relation of Volume, Costs, and Returns to Overexpansion of Warehouse Space

The increase in floor space by a firm on one market illustrates the results of over-expansion of warehouse space. The firm increased its floor space from 11 percent to 20 percent of the total. Its selling time was so increased it was able to boost its share of the sales on that market from 14 percent to 18 percent. The market as a whole increased its volume of sales by 25 percent as a result of increased production for the belt, but the firm in question increased its sales by 58 percent.

The price of the tobacco for the market also was higher in the year the firm expanded its space, with the result that returns from the warehouse charges for all the firms on the market increased by 51 percent. The firm that increased its floor space increased its returns from warehouse charges by 92 percent. The additional 41 percent increase in the returns is a measure of the benefit to that firm of increasing its selling time through added floor space. The additional revenue was in excess of \$1 per square foot added.

It is estimated that the costs of the firm that increased its floor space, (firm A in table 25) increased by 43 percent and its net returns by 242 percent from \$10,700 to \$36,000. This cost increase is other than for the additional space. Including the annual expense for the additional space the costs increased by 61 percent, and the net would be \$19,800, still 186 percent over the net for the previous year. The increase in price and in the volume of tobacco sold gave the other firms an increase of 31 percent in their gross returns and 132 percent in their net.

TABLE 25.--Additional gross and net returns to firms for increasing floor space over 1949, in handling flue-cured tobacco, 1950

Item	Firm A		Average of other firms	
	Value	Percentage	Value	Percentage
	<i>Dollars</i>	<i>Percent</i>	<i>Dollars</i>	<i>Percent</i>
Gross return-----	40,200	91.8	23,300	30.5
Not allowing for cost of additional space:				
Cost-----	14,300	43.2	5,800	14.6
Net return-----	25,900	242.1	17,500	131.6
Allowing for cost of additional space:				
Cost-----	20,400	61.6	--	--
Net return-----	19,800	186.0	--	--

The data in table 26 gives the results if the sales had been divided in the same proportion in the second year as in the first. The increase in returns then would have been about the same for firm A as for the average of the other firms. If the selling time were based on the volume sold in some past years, the historical base, it would be of no advantage for one firm to increase its floor space to secure selling time. What often happens, however, is that the other firms increase their floor space in order to maintain their share of selling time, and a wave of expansion is begun. Additional firms are also attracted to the market to share in the returns. This is what has happened on this market since 1950.

There has been further expansion through the addition of another warehouse and additional floor space in the other warehouses, both of which add to the cost. However, the grower is served no better. The firm which added to its floor space on this market secured no better returns for the growers than the other warehousemen; the price received was very close to the market average in both years.



TABLE 26.—Additional gross and net returns to firms with sales distributed as in 1949,  
in handling flue-cured tobacco, 1950

Item	Firm A		Average of other firms	
	Value	Percentage	Value	Percentage
	<i>Dollars</i>	<i>Percent</i>	<i>Dollars</i>	<i>Percent</i>
Gross return-----	22,200	50.7	26,900	50.6
Not allowing for cost of additional space:				
Cost-----	6,200	18.7	7,400	18.6
Net return-----	16,000	149.5	19,500	146.6
Allowing for cost of additional space:				
Cost-----	12,300	37.1	--	--
Net return-----	9,900	92.5	--	--

As indicated above, however, it added to its cost and it reduced the efficiency with which it used its floor space. This firm sold 90 pounds of tobacco for each square foot of its floor space the first year. This amount was reduced to 73 pounds with the additional floor space in spite of the increased volume of sales resulting from the additional selling time. The other firms on the market increased their volume from 68 pounds per square foot the first year to 81 the second because of the additional volume of tobacco that came to the market. The ratio for all firms on the market increased from 71 pounds to 80 pounds.

If the one firm had not increased its floor space, the ratio for the market would have increased from 71 pounds to 88 pounds per square foot. This would have more adequately utilized the floor space, although it would still have been a lower volume of tobacco for the floor space than for many firms and for some whole markets selling flue-cured tobacco.

The efficiency with which warehouse space is used would vary if there were no excess space. There are days when less tobacco comes to market than could be sold in the time available. These occur most often near the end of the season when the markets remain open to receive the tobacco that remains to be sold. The volume coming to market tapers off near the end of the season. There may also be some days at the beginning of the season when the volume ready for market is less than the capacity of the markets. It is on days when the volume coming to market is low that the initiative and ability of the operators to attract the tobacco coming to the market to their warehouses is most important in increasing their share of the business.

The variation in the efficiency with which warehouse space is used and its effect on costs for one market are shown in table 27. It is estimated that this market had 43 percent more space than needed. This means that the market could sell up to its daily capacity by using 70 percent of the warehouse space on the market.<sup>10</sup>

In 1950 this market sold 73 pounds of tobacco for each square foot of floor space. If there had been no excess space the amount would have been 105 pounds. The variation was from 58 pounds to 90 pounds for the space available. If there had been no excess space it would have varied from 84 pounds to 129 pounds per square foot.

<sup>10</sup> Fred Royster, president of the Bright Belt Warehousemen's Association, estimated that 60-65 percent of the space for all flue-cured markets would be sufficient to "efficiently care for the entire crop" (7).

None of the warehouses sold all the baskets that could have been sold in the time allotted. If they had sold as many baskets as they could have in the time available and each basket had weighed the average for the baskets sold in that type, the amount sold per square foot would have been 140 pounds. The several firms sold from 60 to 92 per cent of this maximum amount and the market as a whole sold 75 percent of that amount.

TABLE 27.--Tobacco sold per square foot and cost of space and equipment in warehouses with and without excess space,<sup>1</sup> selected market, 1950

Item	Warehouse with excess space available		Warehouse without excess space <sup>1</sup>		Cost of excess space
	Tobacco sold per square foot	Cost per 100 lb. of tobacco	Tobacco sold per square foot	Cost per 100 lb. of tobacco	
	<i>Pounds</i>	<i>Cents</i>	<i>Pounds</i>	<i>Cents</i>	<i>Cents</i>
Low-cost firm-----	58	19	84	13	6
High-cost firm-----	90	29	129	20	9
Average-----	73	23	105	16	7
Difference low and high cost--	32	10	45	7	3

<sup>1</sup> With no more space than needed to sell the number of lots in the selling time allotted.

The charges paid by the growers patronizing this market were sufficient to cover the cost of excess space and to encourage the building of additional space since 1950. As estimated here, the cost of excess space averaged 7 cents a hundred pounds for the tobacco marketed. The cost of the space available to the firm that utilized its space most efficiently was at the rate of 19 cents per hundred pounds for the tobacco sold. Of this amount 6 cents covered the cost of the excess space and 13 covered the cost of the rest of the space. Eliminating the cost of the excess space the difference in cost between the lowest cost and highest cost firm was 7 cents per hundred pounds; while for all space available the difference was 10 cents. The difference in the cost of the use of space between the 2 firms could be allocated, 3 cents to excess space and 7 cents to the less efficient utilization of the space.

If competition were effective in establishing the charges, the inefficient operators would be eliminated to the point that only sufficient firms would be left to handle the crop to be marketed without excess use of capital or labor.

The incentive to utilize capital and labor efficiently under the competitive conditions of the flue-cured markets is limited by the fact that the charges are determined by a combination of State law and custom. In addition, this incentive is influenced by the variation in the costs of operating the warehouses. This is especially true with the selling time distributed on the basis of the floor space.

Relative to selling time the markets of type 12 were most overexpanded, followed by the markets selling types 13 and 14. In addition to the space to display the tobacco for sale, there must be space to receive it and hold it until it is placed in the sales row and hold it after the sale until it is removed by the buyer. The amount of space will vary with the local situation. For purposes of this study, space was considered excessive only when the space in a market was over three times that required to display the number of baskets that could be sold in a day. Even on this liberal basis a third of the space available in 1950 was in excess of that needed. Its distribution by types is shown in table 28. The annual cost of this excess at an average annual cost of 17 cents a square foot would be about 1 1/2-million dollars.

TABLE 28.--Total and excess space in warehouses for flue-cured tobacco, by types, 1950<sup>1</sup>

Type	Total	Excess	
		Actual	Percentage of total
	1,000 square feet	1,000 square feet	Percent
11a-----	3,655	764	20.9
11b-----	2,197	236	10.7
12-----	8,748	3,694	42.2
13-----	6,789	2,686	39.6
14-----	5,162	1,173	22.7
All types-----	26,551	8,553	32.2

<sup>1</sup> On those markets where the space exceeded three times that required to display the number of baskets that could be sold in a day.

Overexpansion is not the only reason for the inefficient use of warehouse space. Even if there were no excess space, some firms would make better use of their space than other firms. This would depend upon the extent to which each made the maximum use of its selling time. Table 29 shows for the markets selling each type the increase in efficiency and the decrease in the cost per hundred pounds sold without excess space. It also shows the increase in efficiency and the decrease in costs if all firms sold the amount of the highest fifth of the firms.

TABLE 29.--Increase in sales per square foot of space, decrease in cost per 100 pounds by eliminating excess floor space and by increasing efficiency in use of space, by types, 1950

Type	No excess space		Assumed efficiency <sup>1</sup>	
	Quantity increase	Cost decrease	Quantity increase	Cost decrease
	Pounds	Cents	Pounds	Cents
11a-----	23	5	39	7
11b-----	9	3	47	9
12-----	38	16	74	21
13-----	38	17	49	22
14-----	8	10	17	18
All types-----	25	11	48	16

<sup>1</sup> Assuming the average pounds sold were raised to the fourth quintile, a fifth of the warehouses sold above this amount per square foot of space after eliminating the effect of the excess space.

The amount by which the costs of marketing flue-cured tobacco would have been lowered with the increased efficiency shown in table 29 is given in table 30. If the warehousemen used their space as efficiently as the highest fifth of the warehousemen, the costs would be reduced by 2 1/4 million dollars. The reduction in excess space would account for 1 1/2 million dollars of this. The use of the selling time more nearly to the maximum would account for the other three-fourths million dollars.



TABLE 30.--Savings with no excess space and assumed increase in efficiency,<sup>1</sup>  
by types, 1950

Type	No excess space	Assumed efficiency
	<i>1,000 dollars</i>	<i>1,000 dollars</i>
11a-----	157	220
11b-----	51	153
12-----	717	941
13-----	514	665
14-----	142	256
All types-----	1,581	2,235

<sup>1</sup> Raising the efficiency to the fifth of the firms with the highest.

#### Relation of Volume to the Number and Size of Firms

The high returns to warehouse operators in the postwar years has encouraged not only the expansion of warehouse space but the entrance of new firms. With the limitations to competition in the auction marketing of tobacco discussed above, this has not resulted in lowering charges. With the volume of tobacco to be marketed determined by the season's production, any increase in the number of firms reduces the average volume per firm.

The average volume handled per firm in 1950 was 3.5 million pounds. Over half the firms sold less than 3 million pounds. It was shown that wages and salaries can be reduced substantially by increasing volumes up to 4 or 5 million pounds. In industries where the overhead is large the lower costs which can be secured by increasing the volume is an important element in bringing about merger of the smaller firms. This does not necessarily mean the lessening of competition (5, pp. 119-124).

The effect of mergers on efficiency and costs can be illustrated by a market which in 1950 sold 10.7 million pounds. There were 4 firms operating in the market, selling from 1 to 4 million pounds each. The total cost as estimated for all 4 firms was \$112,000. If they had operated as 2, with 1 selling 5.4 million pounds and the other 5.3 million pounds, the costs would have been reduced to \$107,000 or by \$5,000, nearly 5 percent. This saving could have been added to the net returns of the firms, increasing them by 10 percent. In many markets there is a demand for the space for storage and other uses and if the two smaller warehouses could be sold, the costs as calculated would be reduced by an additional \$6,000. The actual savings would depend upon the returns that could be secured for the warehouse space in other uses in the market. The details are shown in table 31.

TABLE 31.--Total returns, costs, and net returns on a market selling 10 million pounds as sold by 4 firms and by 2 firms, 1950

Item	Four firms	Two firms	
		Using 4 warehouses	Using 2 warehouses
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Total returns-----	162,000	162,000	162,000
Costs-----	112,000	107,000	<sup>1</sup> 101,000
Net returns-----	50,000	55,000	61,000

<sup>1</sup> Costs assuming the smaller warehouse leased or disposed of for other use. These costs include all labor and management costs.

Operating at an average volume of 5 million pounds, 70 firms could sell as much as the 125 firms on the markets of types 11a, 11b, and 12 which sold less than that amount. The savings in salaries and wages would total over \$100,000. If the charges were lowered to reflect the lower costs, the savings would apply to all the tobacco sold and would be over \$175,000.

### Relation of Volume per Market and Set of Buyers to Costs

The volume handled by a market or set of buyers affects the efficiency of marketing flue-cured tobacco as does the volume handled by each warehouse firm. The effect of volume on efficiency and costs differs for the several interests involved in marketing. These will be considered after some of the factors influencing the volume sold by a market are taken up.

The volume of tobacco on the markets is even less influenced by the activities of the warehouse operators than is that of the individual firm. It is mathematically true that the volume sold by the market is the sum of volume sold by the several firms operating in the market. However, for the same reasons discussed in connection with the warehouse firms, the volume is determined by the production in the area from which the market draws its supply and the several regulations affecting the selling time.

An important factor affecting the selling time of a market is the number of sets of buyers. The addition of a set of buyers in a market which had one set will double the selling time available, with the other regulations remaining the same. Again, because there are growers anxious to sell where they can find available selling time, a market which adds a set of buyers can attract tobacco from neighboring markets. For the same reason, should the volume ready for sale on certain days in the market area be larger than the amount that can be sold in the time available, the growers will seek space on some other market. Therefore, the warehousemen on markets where the volume coming to market is close to capacity for a number of days may seek to add a set of buyers.

Towns without a market also seek to have a market established by securing a set of buyers. The efficiency and the volume sold per set of buyers will be reduced unless the volume of production is increased. Also the costs will be increased.

The addition of a set of buyers for a season may benefit the warehousemen in a given market by adding to their volume, but will reduce the volume handled by warehousemen in the other markets. If the additional set of buyers is added by the establishment of a new market, the total number of firms will be increased and the average volume sold per firm will be reduced.

The effect on the buying companies is to reduce the efficiency of their buying operations and to increase their costs. The same is true for the Federal Government which provides the inspection service. These will be the cost items used to illustrate the effect of the volume sold per set of buyers on marketing costs.

The buying companies are affected in two ways by the addition of sets of buyers. If they are to be represented on the set of buyers they must provide at least an additional representative and most likely other labor to assist in handling the purchases. Secondly, it may involve the addition of new redrying facilities. This is because with the addition of more sets of buyers more tobacco will be sold in the same number of days. If the redrier capacity is already adjusted to the smaller volume, it will have to be enlarged to prevent the tobacco from deteriorating by being held too long before it is processed. The cost of the additional redrier space has not been considered in this study.

These additional costs mount up rapidly for the smaller tobacco companies. The added cost to the larger companies is relatively smaller because of their larger volumes. The cost of maintaining a representative and the necessary labor to assist him will vary with the salary and wages paid and with the number employed per set of buyers. At least one representative will be required with a minimum of assistance, and the cost per

hundred pounds of tobacco is influenced more by the volume of tobacco purchased. There is a minimum of seven representatives from the buying companies and on some markets more than that number.

The volume purchased per representative will vary from 300,000 to 3 million pounds. How the cost of buying decreases with the increase in volume is shown in figure 1. These costs cover the purchase of the tobacco and the sheeting and preparing of it for hauling from the warehouses. These data show the costs decreasing from \$1.25 to 20 cents a hundred with the quantity purchased increasing from 300,000 to 2 million pounds per buyer. This is estimated for a season of approximately 4 months with sales for 60 days on a market.

The Federal Government must assign at least two inspectors per set of buyers no matter how small a volume of tobacco is sold on the market. Additional inspectors are assigned to some markets as trainees or substitutes for the other inspectors, who may not be able to work for a period. The inspectors are hired for 8 months each year. The markets are open for varying lengths of time from 20 days to over 50 days. The inspectors are shifted from one market to another to give each as full a schedule as possible. The detailed analysis has been limited to the markets selling types 11a, 11b, and 12 where the length of selling season is about the same. There were a total of 223 inspectors in the 47 markets with 77 sets of buyers in 1951.

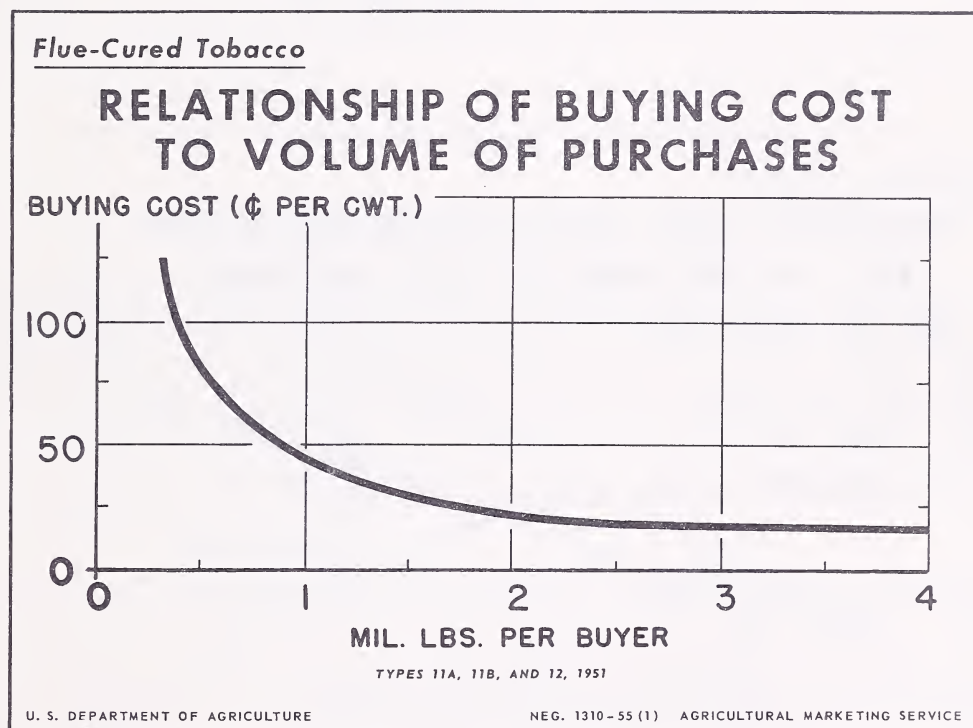


Figure 1

The average volume of tobacco graded per inspector was 4,600,000 pounds. The range was from 1,237,000 pounds to 7,556,000 pounds. The amount on the second market was six times that on the first. The effect of the volume on the efficiency of the inspectors is shown in figure 2. The upper line shows the volume that the inspectors would average if there were two inspectors for each set of buyers and the varying volumes sold per set of buyers. The lower line shows the pounds per inspector if there were three per set of buyers. The dots show the pounds graded per inspector with the



varying number of inspectors on the markets because of the trainees and substitutes. In markets with more than 1 set of buyers the inspectors can be shifted between the sets or 1 set may have more than another. This accounts for the fractional number on some markets and for the dots lying between the two lines and below the lower line. On 7 markets there were more than 3 inspectors and trainees assigned to them.

The cost of inspection with 2 inspectors per set of buyers averages \$3,500 for the season and with 3 inspectors the average is \$4,900. Figure 3 shows how the cost per hundred pounds of tobacco inspected is influenced by the volume sold per set of buyers. The heavy line shows the cost per hundred pounds for given volumes per set of buyers with the average number of inspectors and average salaries. The dots show the actual cost per hundred pounds inspected on each market. The variation from the line is due to the varying numbers and the difference in salaries on the several markets.

The cost per hundred pounds declines rapidly from the smaller markets to the medium-sized markets, then more slowly. The average cost of inspection per 100 pounds for the markets of these 3 belts was 3.6 cents a 100 pounds. With the average number of inspectors per set of buyers and the average salaries there would have to be 14 million pounds of tobacco sold per set of buyers to bring the cost down to the average. There were 28 markets with costs above the average and 19 at the average or below. The latter sold the larger volume of tobacco, bringing down the average.

The average volume sold per set of buyers in 1951 was 13 million pounds. If the average had been increased to 16 million pounds, the same quantity could have been sold by 64 sets of buyers instead of 77. This would have resulted in a saving of over \$200,000 to the buying companies and one of over \$45,000 to the Federal government for tobacco inspectors.

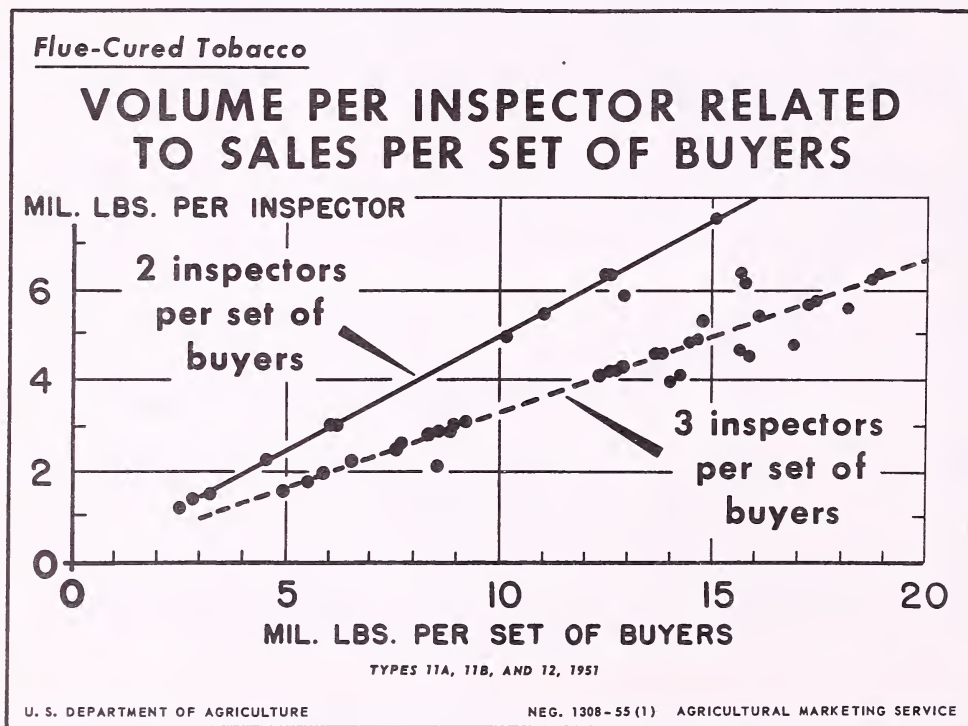
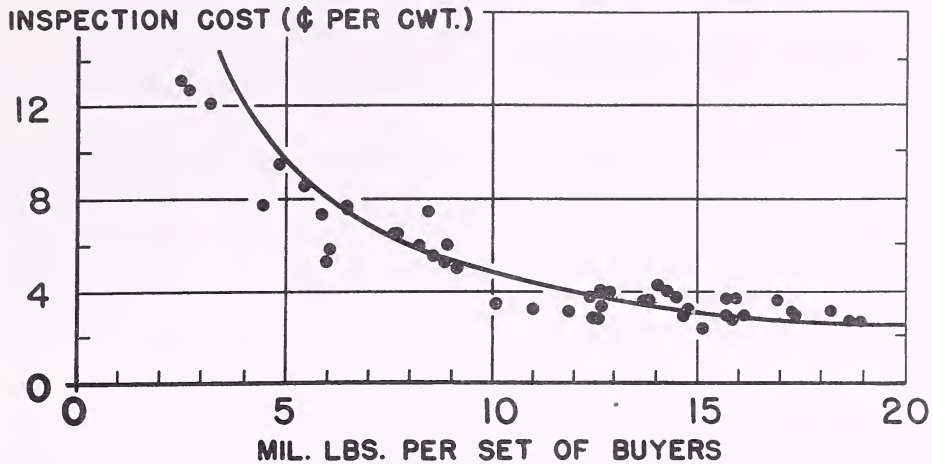


Figure 2

### Flue-Cured Tobacco

## **COST OF INSPECTION RELATED TO SALES PER SET OF BUYERS**



TYPES 11A, 11B, AND 12, 1951

U. S. DEPARTMENT OF AGRICULTURE

NEG. 1309-55 (1) AGRICULTURAL MARKETING SERVICE

Figure 3

### **Relation of Resales to the Margin at Auction Markets**

Most of the flue-cured tobacco is offered by the growers and purchased by manufacturers and tobacco dealers who do some processing. From a fifth to a sixth of the tobacco delivered by the growers does not follow this short, direct route. This consists of the tobacco placed under the price support loan program and the resales on the auction market. The loan program for flue-cured tobacco is operated by a cooperative, the Flue-Cured Stabilization Corporation. The actual handling of the tobacco from the warehouse floor through the redrier and into storage is done by one of the tobacco dealers under contract with the cooperative. The latter sells the redried tobacco packed in hogsheads by private sale to the manufacturers and dealers. The tobacco then enters the marketing channel in the same way as other processed leaf does.

The tobacco which later becomes the resales is purchased by the warehousemen or by pinhookers. These buyers do not have the tobacco redried and packed in hogsheads but sell it again in the loose-leaf form on the auction floor, either the same one on which it was purchased or another, thus, the term resales. This tobacco is usually resold within a few days after the original purchase. It is finally purchased by a manufacturer or tobacco dealer and becomes a part of the flow of tobacco through the marketing channel to the consumer.

The trading profit or margin received by the pinhookers and warehousemen on their resales is a part of the gross margin taken at the auction market. It accounts for a part of the difference between the returns which the grower receives for the tobacco he sells and the payment made by the tobacco companies for the tobacco they purchase and process. It is reasonable to expect, and the activity of several State departments of agriculture has demonstrated, that growers can secure some of the margin that goes to the warehousemen and pinhookers by better sorting and preparing their tobacco for market

and by judicious rejection of low bids. Any reduction of the resales would reduce the margin taken at the auction warehouses.

The grower benefits by the activities of the warehousemen and pinhookers in their purchase and resales of the tobacco unless there is favoritism in these transactions. Favoritism would exist if the auctioneer should accept the bid of either when a higher bid could be secured for the lot. Likewise, it would exist on the part of a buyer if he made a higher bid for a lot being sold by a warehouseman or pinhooker than he would to the grower under the same competitive conditions. The speed with which the sales are made and the signs and jargon of the selling make it difficult for the grower or any casual observer to recognize instances of favoritism.

Excluding such favoritism, if it exists, there are conditions associated with the auction marketing of tobacco which account for lots of tobacco being sold at prices which offer an opportunity to resell them at a profit. The wide variation in the quality of many lots, the different standards of tobacco quality of the several buyers, the variation in the light, the speed of the sales, the relatively few final buyers, the varying ability of the warehousemen and auctioneer, and other variations among warehouses and through time will result in a wide variation in the prices paid for tobacco of relatively the same quality.<sup>11</sup> This appears to be a risk which the tobacco grower is subject to in selling his tobacco at auction.

The grower has the privilege of rejecting a low bid and offering the tobacco for sale again if he believes he would gain by doing it. In this way he might secure for himself the profit that would go to the warehouseman or pinhooker. There are several things which make the grower hesitant to take advantage of this privilege. The average grower is not well enough acquainted with the quality of tobacco and the prices being paid for those qualities to enable him to recognize when it would be to his advantage to reject, and reoffer the lot. The warehousemen and pinhookers, however, are probably better able to make such a judgment. They are on the market for most of the time and can specialize in acquiring a knowledge of the market to enable them to profit by buying and reselling lots which appear to them underpriced.

Another important consideration to the grower is that he will have to wait until the next sale before he can again offer the tobacco for sale. This is likely to mean that he will wait a day or more before the tobacco is sold. He runs the risk of deterioration of the condition of the tobacco; it may become too dry and shatter or too moist and spoil. He also risks a drop in the market price; most growers are especially concerned over this as the season advances. Warehousemen do not encourage rejections, as they are compensated only when a sale is completed. By rejecting the bid the grower reduces the volume of tobacco which the warehouseman sells and thus the returns which he will receive for operating the warehouse.

This conflict of interest between the grower and warehouseman does not exist when a pinhooker buys the tobacco. The warehouseman receives payment of the warehouse charges on the original sale and on the resale if made in his warehouse. Likewise, if the warehouseman purchases a lot, he gains by the spread, if any, in reselling it.

The proportion of the crop resold on the auction floor does not vary much from season to season. It was somewhat lower in 1951 than for other years. See table 32.

A larger proportion of type 13 was resold in the years 1951 and 1952, shown in table 33, than of the other types, followed by type 11b. A negligible part of the tobacco bought by the manufacturers and the dealers, which they do not wish to process, is included in these resales. A small portion of the tobacco which is resold by the warehousemen consists of baskets which have been rejected for some reason by the tobacco company which originally purchased it. The warehouseman picks up such a basket, as he has already

---

<sup>11</sup> The Kentucky Agricultural Experiment Station has made a study of such variation on burley markets (4, p. 3).



TABLE 32 --Gross sales and resales of flue-cured tobacco at auction markets, 1949-52

Year	Sales	Resales	Resales as percentage of sales
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>Percent</i>
1948-----	1,197,325	115,127	9.6
1949-----	1,224,374	119,269	9.7
1950-----	1,378,202	127,501	9.3
1951-----	1,574,528	132,915	8.4
1952-----	1,505,590	147,955	9.8

TABLE 33.--Gross sales and resales of flue-cured tobacco by types, 1951 and 1952

Type	1951			1952		
	Sales	Resales	Resales as percentage of sales	Sales	Resales	Resales as percentage of sales
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>Percent</i>	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>Percent</i>
11a-----	312,174	25,790	8.3	327,750	27,392	8.4
11b-----	186,420	15,639	8.4	177,122	18,452	10.4
12-----	527,114	40,307	7.6	488,280	46,009	9.4
13-----	356,949	35,168	9.9	332,755	39,812	12.0
14-----	191,871	16,010	8.3	179,683	16,290	9.1
All types-----	1,574,528	132,914	8.4	1,505,590	147,955	9.8

paid the grower for it, and resells it to recover as much as he can of what he has invested in it.

Another small portion of the resales is leaves of tobacco picked up from the floor after being knocked off the original basket. The larger portion of the warehousemen's sales is the resales of their "leaf accounts," separate accounts kept by the warehousemen covering their purchase and sales of leaf tobacco. The profit or loss in this account becomes a part of the profit or loss from the whole operation of the warehouse. For the proportion of these various sales on the warehouse floor, see table 34, which gives a breakdown for the years 1950 and 1951.

The pinhooker is after a quick turnover at the same or another warehouse. The warehouseman, on the other hand, has two motives for carrying on such transactions. He is interested in having good prices paid for the tobacco sold on his floor. This not only gives him a high commission but also attracts growers to his house. In order to encourage growers who may have a large volume to sell or who may influence other farmers to bring tobacco to his warehouse, he may assure them that they will obtain at least as good prices as can be obtained from his competitors.

In fulfilling this assurance he may bid on some lots to stimulate the bidding and to increase the prices paid. In the course of these activities some of the lots may be sold to the "house." Besides stimulating higher prices the warehouseman is interested in

TABLE 34.--Sales and deliveries of flue-cured tobacco, 1950 and 1951

Item	1950		1951	
	Quantity	Percentage distribution	Quantity	Percentage distribution
Gross sales:	1,000 pounds	Percent	1,000 pounds	Percent
Producers:				
Deliveries to tobacco companies	1,168,992	93.5	1,292,957	89.7
Placed under loan-----	77,636	6.2	142,244	9.9
Loss-----	4,074	.3	6,412	.4
Total-----	1,250,702	90.7	1,441,613	91.6
Resales:				
Pickups-----	2,724	2.1	3,813	2.9
Leaf account-----	73,536	57.7	75,137	56.5
Pinhookers-----	51,241	40.2	53,965	40.6
Total-----	127,501	9.3	132,915	8.4
Total gross sales-----	1,378,202	100.0	1,574,528	100.0

making a profit, or at least in minimizing the losses, on his leaf account. In order to do this he may bid on lots on which the bids are low and which he thinks can be resold at a profit. It is difficult to distinguish between the two types of bidding by the warehousemen.

Table 35 shows the results of transactions on a day when one of the warehousemen's two motives predominated, and on another day when the other predominated. The first day the average price of all sales was \$50 per hundred pounds, the average price of the baskets purchased by the warehousemen was \$42 a hundred, while the average price the other buyers paid for the same grades was \$49, or \$7 more. Since the average price of all the purchases of the grades which the warehousemen purchased was close to the average of all sales for the day, the purchases of the warehousemen were fairly representative of all sales that day. This and the fact the warehousemen paid \$7 less than the other purchasers for the same grades indicate that they were buying baskets of any grade on which the bid was low for the grade and which would offer them an opportunity to make a profit.

TABLE 35.--Percentage of lots purchased and price per 100 pounds paid by warehousemen and by other buyers for type 12 tobacco, 2 days, 1948

Item	First day	Second day
	Percent	Percent
Percentage purchased by warehousemen-----	3.7	2.5
	Dollars	Dollars
Price paid by--		
Warehousemen-----	41.78	39.69
Other buyers-----	48.77	38.16
Difference-----	6.99	1.53
Average of all sales-----	49.72	44.25

The second day the average price of all sales was \$44, 6 dollars less than on the first day. The average price paid by the warehousemen for the grades they purchased was \$40 while the price paid by other buyers for the same grades was \$38. These prices paid by the warehousemen and the other purchasers for the same grades indicate that the warehousemen were concentrating their purchases in the grades selling below the average. The market price had been declining for several weeks prior to the sales of the second day shown in the table. Prices of the higher grades are much more stable on flue-cured markets than prices of the lower grades.

Examples of the difference are the prices for C4L and B5R for this period. The week in which the first day occurred C4L sold for an average price of \$65; the week in which the second day occurred it sold for the same price. In contrast, the week including the first day B5R sold for \$35, and for the week including the second day it sold for \$29, a drop of \$6, the same decline as the average for all sales for the 2 days. The warehousemen bought a substantial number of baskets of C4L on the first day but none on the second. In contrast they purchased none of grade B5R on the first day but a considerable number of baskets of that grade the second day. There was no need of supporting the price of C4L the second day, but, for grades like B5R which had dropped in price, the warehousemen were attempting to encourage higher prices. The result was that for the grades they purchased on the second day they paid \$1.50 a hundred more than the other purchasers paid for the same grades.

The opportunity for a profit the first day can be shown by their purchases of such grades as X5F and P4L. Their purchases of the first grade were at an average of \$31.46, compared to an average of \$38.84 by the other buyers; for the second grade they paid \$38.96, and the other buyers paid \$44.82. There were no purchases of either of these grades on the second day.

The pinhooker does not purchase quite as much tobacco as the warehousemen and concentrates his purchases more. Half of his purchases are made in about a half dozen grades. On the first day analyzed, the pinhookers purchased 2 1/2 percent of the total purchases, or 4.7 percent of the grades in which they bought. Half of the purchases were in the following six grades, in the order given: P5F, N1L, P4F, C5F, B6F, and X4L. The second day they purchased about 2 percent of all tobacco sold, or 2.7 percent of the grades purchased. Over 50 percent was purchased in the grades B5R, B5F, B6F, B6R, and B5GF, a medium-to low-quality group of grades. Table 36 shows the proportion of the tobacco purchased by these small dealers, the prices they paid for the major portion of their purchases, and the prices paid by other buyers for the same grades.

TABLE 36.--Percentage of lots purchased and prices per 100 pounds paid by pinhookers and by others, type 12, 2 days, 1948

Item	First day	Second day
Percentage purchased by pinhookers-----	Percent 2.5	Percent 1.9
Price paid by-----	Dollars	Dollars
Pinhookers-----	27.93	30.01
Other buyers-----	36.16	34.13
Difference-----	8.23	4.12
Average of all sales-----	49.72	44.25

The pinhookers buy baskets they believe to be underpriced. Some of these are underpriced because the farmers fail to sort in the way that will bring the best price. These small dealers often buy such baskets, take out the poorer tobacco and resell it as a higher priced grade of tobacco. The warehousemen also do the same with some of their



purchases. Table 37 shows the prices paid by the pinhookers and by other buyers for the grades in which more than half the purchases of the pinhookers were made each day.

TABLE 37.--Price per 100 pounds paid by pinhookers and by other buyers for type 12 tobacco, by grades, 2 days, 1948

First day				Second day			
Grade	Price			Grade	Price		
	Pinhooker	Other buyers	Difference		Pinhooker	Other buyers	Difference
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>		<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
N1L-----	17.70	15.56	2.14	B5GF-----	29.42	28.82	.60
P5F-----	23.97	25.97	- 2.00	B6R-----	22.79	22.79	0
C5F-----	33.52	35.63	- 2.11	B5R-----	27.48	28.37	-.89
B6F-----	30.88	37.17	- 6.29	B6F-----	28.42	31.99	-3.57
P4F-----	31.48	39.15	- 7.67	B5F-----	35.24	40.97	-5.77
X4L-----	32.42	44.94	-12.52				

It will be noted that on the first day the pinhookers paid more for their purchases of the grade N1L than did the other buyers and likewise on the second day for the purchases of B5GF. The range in the prices paid for these grades is usually wide because of the wide variation in the quality of the tobacco in different lots on which these grades are placed. Many of the lots given these grades offer the pinhooker the opportunity to re-sort and resell some of the tobacco at a higher grade. With some lots, taking out some of the poorer leaves might raise the quality of the remaining tobacco from the low side of the grade to the average or high side, thus upping the value of the whole.

The pinhookers discard a considerable quantity of the poorer tobacco in re-sorting and picking over the lots they purchase. The amount sold by them was 3 percent less than the amount purchased in 1950. In 1951 the sales were 6 percent less than the purchases. This compares with the loss of the warehousemen on their resales of about 1 percent. The grades purchased on the second day were some of those in which the decline from the first day was largest. The pinhookers may have purchased those grades with the hope that they could resell them on another day at a profit.

The warehouses where the pinhookers operated were classified in three groups: (1) Warehouses where the pinhookers sold much more than they purchased, (2) those where the pinhookers purchases and sales were about balanced, and (3) those where they bought much more than they sold.<sup>12</sup> In the first group the pinhookers made 25 percent of their purchases and 53 percent of their sales. In the third group the corresponding figures were 50 and 19, respectively. The middle group accounted for 25 percent of purchases and 28 percent of sales. This shows 31 percent of their transactions, at a minimum, must have consisted of purchase of tobacco at one warehouse and its sale at another (table 38).

Transactions on the warehousemen's leaf accounts for the season as a whole may result in either trading profits or trading losses. A number of warehousemen had net losses on their leaf accounts in 1950. The trading losses for such firms were sufficient in that year to wipe out the trading profits of the other firms. As a result there was a net loss of \$568,000 on the leaf accounts for all firms operating warehouses selling flue-cured tobacco in that year. The firms operating on the markets of the Eastern Carolina

<sup>12</sup> In (1) purchases of each the specified pinhookers were less than 91 percent of their sales (averaging 47 percent), and in (3) purchases of each were more than 109 percent of sales (averaging 263 percent).

TABLE 38.--Pinhookers' purchases and sales, distributed by the relationship of purchases to sales in the same market, North Carolina, 1948

Warehouse group	Distribution of transactions	
	Purchases	Sales
	<i>Percent</i>	<i>Percent</i>
Excess of sales-----	25	53
Balanced trading-----	25	28
Excess of purchases-----	50	19
Total-----	100	100

Belt selling type 12 had the largest net trading losses. The firms operating in Florida and Georgia also had net losses as a group, while the profits of the firms with net profits in the Middle Belt selling type 11b were barely enough to offset the losses of the other firms in the Belt.

The trading profit of the firms with profits were large enough in 1951 to offset the losses for any with losses and leave a net trading profit of \$1,732,000 for all firms. There are some costs in these transactions and these costs have not been separated from the other costs of operating the auction warehouses in this study. The margin or trading profit from the leaf account is an addition to the net returns of the firm obtained from warehouse charges.

Table 39 shows the purchases, sales, and margin of the warehousemen on their leaf accounts for the years 1950 and 1951.

TABLE 39.--Purchases, sales, and spread on warehousemen's leaf accounts, by type, 1950 and 1951

Type	Quantity		Value		
	Purchases	Sales	Purchases	Sales	Spread
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
11a-----	13,214	13,100	6,669	6,808	139
11b-----	7,174	5,932	3,805	3,813	8
12-----	28,436	28,196	15,656	14,849	<sup>1</sup> - 807
13-----	18,048	17,795	8,386	8,877	491
14-----	7,619	7,503	4,077	3,678	<sup>1</sup> - 399
Total-----	74,491	72,526	38,593	38,025	<sup>1</sup> - 568
	1951				
11a-----	14,406	14,283	6,663	7,015	352
11b-----	9,572	9,495	4,584	4,727	143
12-----	26,419	26,042	12,370	12,884	514
13-----	17,469	17,351	7,839	8,350	511
14-----	8,046	7,966	3,566	3,778	212
Total-----	75,912	75,137	35,022	36,754	1,732

<sup>1</sup> Net loss for the group.

The pinhookers showed a gain in their sales both years. This is shown in table 40.

TABLE 40.--Pinhookers' purchases, sales, and spread, flue-cured tobacco, by type, 1950 and 1951

Type	Quantity		Value		
	Purchases	Sales	Purchases	Sales	Spread
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>	<i>1,000 dollars</i>
11a-----	11,806	11,638	4,767	5,454	687
11b-----	5,692	5,636	2,311	2,658	347
12-----	14,318	14,177	5,813	6,686	873
13-----	14,737	13,640	4,931	5,823	892
14-----	6,334	6,150	2,251	2,798	547
Total-----	52,887	51,241	20,073	23,419	3,346
1951					
11a-----	11,279	11,140	3,846	4,680	834
11b-----	5,860	5,802	2,060	2,454	394
12-----	13,417	13,284	4,716	5,619	903
13-----	20,856	17,381	5,976	6,923	947
14-----	6,420	6,358	2,439	2,880	441
Total-----	57,832	53,965	19,037	22,556	3,519

There are several points which stand out in a comparison of the transactions of the pinhookers and the warehousemen in the purchase and resale of tobacco on the auction floor. One is that the price paid by the warehousemen is considerably higher than the prices paid by the pinhooker. In 1950 the average price paid by warehousemen for their purchases was \$51.81, by the pinhookers \$37.95. In 1951 the warehousemen paid an average of \$46.13 and the pinhookers \$32.92. The average price received by the growers was \$55.05 in 1950 and \$52.67 in 1951. The margins taken by the pinhookers are larger than those of the warehousemen.

The warehousemen have two objectives in entering into these transactions. One is to make a profit or to minimize losses. The other is to secure favorable prices for the tobacco sold on their floors, particularly for growers who have been induced to sell in their warehouses, by assurance of as favorable prices as in competing warehouses. The latter accounts in part for the higher prices and lower margins. The pinhookers discard a larger portion of the poorer leaves in "reworking" a basket of tobacco than do the warehousemen. This is shown by a comparison of the loss in weight of the resales compared with the purchases for each group given in tables 39 and 40. The pinhookers sold 3 percent and 7 percent less than they purchased in 1950 and 1951, respectively. The sales of the warehousemen, on the other hand, weighed only 1 percent less than their purchases in those 2 years.

The total of the spread obtained by warehousemen and pinhookers in resales was \$2,778,000, or 11 percent of the total margin at the auction markets in 1950, and \$5,251,000, or 18 percent of the total in 1951. The difference in the 2 years was largely the result of the losses of some of the warehousemen on their leaf accounts. If the grower by better sorting and preparation of his tobacco for sale and by judicious rejection of low



bids should secure a part of the spread on resales, it would reduce the margin taken at the auction market and increase his returns.

### Relation of Pickups and Floor Sweepings to the Margin at Auction Markets

Hands of tobacco and individual leaves fall, or are knocked, off the baskets as they are handled on the warehouse floor and as persons walk between the rows of baskets. Some of this tobacco is replaced on the baskets, but some remains on the floor until it is cleaned after the sale and removal of the baskets from the warehouse. The leaves which are fairly sound are recovered, and if loose, tied into hands. The hands are then placed on baskets for sale. The tobacco picked up in this manner is called pickups.

Some of the leaves are severely damaged by being tramped on during the sale, some even reduced to small particles. Such tobacco is recovered by sweeping it up and is called floor sweepings. The pickups and floor sweepings recovered in this manner are considered the property of the warehousemen. These are sold either in the regular auction sale or by private sale to the tobacco companies.

The warehouseman pays the grower for the tobacco as weighed when delivered by the grower. The buyer, on the other hand, does not receive the full amount of tobacco as indicated on the basket ticket. Although the tobacco is not reweighed as it is delivered to the buyer at the warehouse, it is checked by the buyer at his plant. There he may find discrepancies between the weight as recorded on the basket ticket and as rechecked at his plant. Part of these discrepancies arise from tobacco falling from the basket, by hands being replaced on the wrong basket, and by change in weight of the tobacco, which gives off or takes on moisture from the air.

To reduce the necessity for adjusting the amount of the purchases by minor changes in weight, a tolerance is generally allowed. If the weight on reweighing at the plant is less than the weight on the ticket by more than the allowance, a deduction is made. However, if the weight on reweighing is greater than the recorded weight by more than the tolerance, an addition is made. The effect of allowing a tolerance is that the buyers pay for the tobacco twice--once when they pay for tobacco lost within the tolerance, and again when they buy pickups and floor sweepings coming from the baskets where the loss is within the tolerance.

It is inevitable that some loss will occur in the handling of tobacco on the auction floor. It is when this loss becomes excessive that it adds unduly to the marketing cost. In 1951, the amount of tobacco recovered and sold by the warehousemen as pickups and floor sweepings was equal to 3.58 pounds for each thousand pounds of gross sales. Of this amount 2.43 pounds per thousand was pickups, and 1.15 pounds was floor sweepings. Table 41 shows the volume of tobacco handled by types and the amount of pickups and floor sweepings combined.

The outstanding fact shown by this table is the large volume of pickups and floor sweepings sold on the type 14 markets in Georgia and Florida. The loss of more than 1 percent, or 11.26 pounds for every 1,000 pounds sold for type 14, compares with less than a third of a percent, or less than 3 pounds per thousand, on the markets selling the other types. The difference is in part accounted for by the way in which the tobacco is prepared for market in Georgia and Florida. The tobacco sold on those markets is not tied in hands when prepared for market and the loose leaves are more easily displaced from the basket.

The volume of such sales also varies greatly between warehouses of the same type and on the same market. Table 42 shows the range in the volume of pickups and floor sweepings for each thousand pounds of sales by markets, and by individual warehouses within each type. It also shows the range on the market where the range between the warehouses is greatest.

TABLE 41.--Gross sales and pickups and floor sweepings by type, 1951

Type	Gross sales	Pickups and floor sweepings	
		Total	Per 1,000 pounds of gross sales
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>Pounds</i>
11a-----	312,174	512	1.64
11b-----	186,420	525	2.82
12-----	527,114	1,399	2.65
13-----	356,949	1,034	2.90
14-----	191,871	2,160	11.26
All-----	1,574,528	5,630	3.58

TABLE 42.--Range in the volume of pickups and floor sweepings by markets, by warehouses and within the market with the widest range, by type, 1951

Type	Range in volume per 1,000 pounds of gross sales		
	Markets	Warehouses	Within market with widest range
	<i>Pounds</i>	<i>Pounds</i>	<i>Pounds</i>
11a-----	1 - 5	1 - 8	1 - 7
11b-----	1 - 5	1 - 9	2 - 9
12-----	2 - 7	1 - 14	3 - 14
13-----	1 - 6	1 - 9	1 - 9
14-----	6 - 17	2 - 22	10 - 22

The range by markets is less than by warehouses for the type, as a high warehouse is averaged with a lower warehouse. However, the range within the market with the widest range shows that there is a wide variation within some of the markets. The quantity of pickups and floor sweepings at a warehouse depends largely on the care with which the tobacco is handled. Adequate space between the rows and within the rows will help reduce the volume of pickups and floor sweepings (18).

A large number of warehousemen hold the quantity of pickups and floor sweepings to a low proportion of the volume of tobacco handled. However, a number of others have a volume of such sales much higher than it need be if more care were exercised in the handling of the tobacco. Table 43 shows the number of firms grouped by the pounds of pickups and floor sweepings per thousand pounds of tobacco handled in their warehouses. The warehouses selling types 11a, 11b, 12, and 13 have been placed in one group and those selling type 14 in another.

In 1951 the tobacco companies purchased in excess of 5,600,000 pounds of flue-cured tobacco which had been on the baskets which they had previously purchased, and which had been charged to them. This amount is well within the tolerance allowed on the weight of the tobacco and is relatively a small proportion of total sales. However, the total is substantial. If valued at the price paid for the baskets of tobacco from which the tobacco came, it was worth a total of \$2,869,000. (See table 44.)

TABLE 43.--Number of firms selling pickups and floor sweepings of flue-cured tobacco by stated range per 1,000 pounds of gross sales and type, 1951

Types 11a - 13		Type 14	
Range	Firms	Range	Firms
<i>Pounds</i>	<i>Number</i>	<i>Pounds</i>	<i>Number</i>
Up to 1.0-----	52	Up to 6.0-----	9
1.1 - 2.0-----	69	6.1 - 10.0-----	20
2.1 - 3.0-----	52	10.1 - 14.0-----	18
3.1 - 4.0-----	43	14.1 - 18.0-----	7
4.1 and over-----	47	18.1 and over-----	6
Total-----	263	Total-----	60

TABLE 44.--Quantity of pickups and floor sweepings at producers' price per 100 pounds and estimated value, by type, 1951

Type	Quantity	Price	Value
	<i>1,000 pounds</i>	<i>Dollars</i>	<i>1,000 dollars</i>
11a-----	512	50.85	260
11b-----	525	54.27	285
12-----	1,399	55.60	778
13-----	1,034	52.39	542
14-----	2,160	46.46	1,004
Total-----	5,630	---	2,869

This total cannot be taken as the loss to the companies through the careless handling of the tobacco on the warehouse floor. If rates of 1 pound in 1,000 pounds sold in types 11 to 13 and 6 pounds in 1,000 pounds in type 14 were taken as a desirable goal, the goal was reached in 1 market out of 5 in types 11 to 13 and in 1 out of 7 in type 14. Reaching this goal in all markets would greatly reduce losses. (see table 45.) The difference in the value of the quantities represented in tables 44 and 45 can be taken as a measure of the excess losses to the buying companies from careless handling. These amount to \$1,594,000.

The buying companies must consider the loss of tobacco from the baskets they purchase as a part of their costs to be covered by the margin between the price they pay the grower and the price they receive for their product. If the companies' losses from this source were less, the margin they would need to cover their costs would be less, and conceivably the difference could go to the grower as an increase in price. Thus, the grower is indirectly affected, since the buyer must allow for this cost in the price he pays the grower.

The loss of the buying companies is in contrast to the gains of the warehousemen on these transactions. The gross income of warehousemen selling flue-cured tobacco in 1951 was increased by \$1,578,000 from the sales of pickups and floor sweepings. This accounted for 5 percent of their gross income. The proportion of the income from such sales varied from 2 percent for the warehouse firms selling type 11a to 17 percent for those selling type 14 in Georgia and Florida. The averages by types conceal much wider variations between firms.



TABLE 45.--Quantity and estimated value of pickups and floor sweepings if reduced to 1 pound per thousand gross sales by types 11a-13 and 6 pounds per thousand for type 14

Type	Quantity	Price	Value
	<i>1,000 pounds</i>	<i>Dollars</i>	<i>1,000 dollars</i>
11a-----	312	50.85	159
11b-----	186	54.27	101
12-----	527	55.60	293
13-----	357	52.39	187
14-----	1,151	46.46	535
Total-----	2,533	--	1,275

Some of the firms receive a substantial portion of their income from such sales. Of the 263 firms selling types 11a, 11b, 12, and 13, 26, or a tenth, sold a sixth of the pickups and floor sweepings. Such sales increased their income by more than 10 percent and were equal to 11 percent of their income from warehouse charges.

Even greater relative returns were secured from this source by 8 firms selling type 14. These firms sold 24 percent, or almost one-fourth of the total pickups and floor sweepings sold by all 60 firms operating on type 14 markets. The 8 firms added more than a third to their income from this source, and such sales were equal to 42 percent of their income from warehouse charges. The share of these warehouse operators' income from this source seems abnormally large compared to the share they receive from the normal operation of their warehouses as warehouse charges on the sale of the growers' tobacco.

Careful handling of the tobacco would eliminate this loss. It is a matter for the individual warehouse operator to correct. Growers and buyers could encourage the better warehousemen by giving their patronage to them in preference to the small number who have excessive sales of pickups and floor sweepings. The State departments of agriculture could also assist by publicizing such sales. These departments are required by law in the States in which flue-cured tobacco is marketed to collect and make public information on the operation of tobacco auction warehouses.

### Joint Action to Increase Efficiency

This study has not shown any outstanding deficiency in the marketing of flue-cured tobacco. It has shown that there are more facilities than required to market the volume of flue-cured tobacco now being produced. The overexpansion of warehouse space is the most serious cause of inefficient use of resources. There is from a third to a half more space than needed. Savings of 2 1/4 million dollars appear possible by more efficient utilization of the space and the disposal by the firms of the excess space. Of these possible savings, 1 1/2 million dollars could be attained by correcting the excess warehouse space and the remainder by more efficient use of space. Although the volume of tobacco varies from one season to another and during each season, this reduction would leave ample space for the efficient handling of the largest volumes which would come to market.

Fewer firms and fewer sets of buyers would increase efficiency and lower costs. If some of the smaller warehouse firms combined their operations, a saving of over \$175,000 in wages and salaries would appear possible. Rather than reducing competition, the consolidation of the smaller firms would, by bringing this cost in line with that of the other firms, make it possible for the small firms to compete more actively for a larger share of the tobacco coming to market. The reduction in the number of sets of buyers would save the buying companies over \$200,000 by reducing the number of representatives

required to buy the same volume of tobacco. The taxpayers would save over \$45,000 by having fewer Federal inspectors to grade the same volume of tobacco if fewer sets of buyers were used.

The number of sets of buyers could be reduced by having one less set of buyers in markets with multiple sets, by having one set serve two markets, or by discontinuing a set on a market where the growers can be served as well on another market. With good roads and trucks most growers are within a fraction of an hour of more than one market. There is often little difference in the cost or convenience to the grower in patronizing one market rather than another. Therefore, the reduction in the sets of buyers would cause little, if any, inconvenience to growers. The smaller tobacco companies find it too costly to have a representative on many markets. With fewer sets of buyers, the smaller companies would have an opportunity to bid on a larger proportion of the tobacco, thus increasing competition. The representatives of the companies are highly trained expert tobacco men with years of experience in judging the quality of tobacco; yet the ability of the individual representatives to judge accurately the value of the different qualities of tobacco on the warehouse floor varies. With fewer sets of buyers the companies would need only their better tobacco men on the markets. These men, because of their better judgment, would be able to make their bids more nearly in line with the quality of the tobacco on each basket and less according to the average prices at which the tobacco had been selling. This would be the important advantage to the grower.

Savings of 1 1/2 million dollars or more in the margin taken at the auction market appear possible by a reduction of resales, by better sorting and preparation, and by judicious rejection of low bids on the part of the growers. More careful handling, resulting in a smaller volume of pickups, also should reduce the cost of the tobacco received by the tobacco companies another 1 1/2 million dollars. The total of these items is \$5,600,000.

It might appear that any action to correct the situation would be ineffective, because the excess of warehouse space and other facilities already exists. However, it is desirable to prevent further expansion; also there are other uses in many markets for the resources now being utilized at less than capacity, such as the warehouse space.

The marketing problems of the flue-cured auction markets are not simple and will not be easily solved. They are interrelated and affect the growers, warehousemen, and buying companies. Nor are they limited to any one belt but rather are region wide. More education is needed to bring about a better understanding by all interested parties of the functions of the auction system, of the way it operates, and the problems which hinder its efficient and orderly operation.

This study has shown that the rules for distributing selling time and other rules limiting the sales have led to increases in facilities. One suggestion for action might be to abolish the rules and permit the warehouse firms to compete more freely. It is unlikely that the warehouse firms would compete by lowering their charges as this might lead to a "price war" with the possibility of operating at a loss.

The rules have been adopted to provide orderly operation of the markets, individually, and of different groups of markets as units. If each firm could operate without regard to the other firms and could sell at any time it had tobacco on its floor, each buying company would have to have a representative at each warehouse or not be represented at the sale. The latter would lessen competition for the tobacco. Some method of organizing and conducting the sales is necessary to promote orderly and efficient marketing of the tobacco and competition among the buyers. The volume is determined by the amount produced, particularly within the area of each market.

Cooperation of all the parties is needed if the system is to operate efficiently. All parties have an interest in the opening dates of the markets, hours of selling time, number of sets of buyers, methods of allocating selling time, and other rules and practices, and the participation of all parties in determining these rules and practices



would be desirable. At the present time the rules are largely the result of action taken by the warehousemen with the acceptance of the growers and the buying companies but without their active participation.

Basic to a solution of the problem of utilizing the facilities more efficiently is the limiting factor of the total selling time available for selling all flue-cured tobacco produced and the production of each belt or type. This is influenced by the number of sets of buyers, the opening dates for each market, the hours of selling time per day, and the rate of sale per hour. These are all questions of mutual concern to growers, warehousemen, and tobacco companies and should be solved by joint action of all three groups.

Although the growers do have an interest in the method of distributing selling time, the question of the distribution of sales time on each market is of more interest to the local warehouse operators. A method such as the present one, which induces the operators to overexpand their facilities, decreases the efficiency and adds unnecessary costs. The groups should jointly seek a method for distributing selling time. The application to the local situation should be left to the local tobacco board of trade.

There is no mechanism to bring these groups or representatives of these groups together to consider their mutual problems. In part, this is a fear of antitrust action, but there are other contributing factors. The interests of the several groups in these problems are not identical. This leads to a feeling on the part of each group that the other groups are mainly responsible for any unsatisfactory conditions. Another is the lack of appreciation of what can be accomplished by public consideration of the problems.

Probably the most important factor for the lack of any mechanism for holding public discussions is that there is no organization which has been given or which is recognized as having responsibility for the operation of the flue-cured markets as a whole. It is desirable that a mechanism be developed whereby all interests may be represented in the making of the decisions which affect them.

The Division of Markets in each State in the flue-cured region has been authorized to carry on certain activities with respect to the tobacco auction markets. These agencies could hold public hearings at which the several groups could present their views on the opening dates, hours of sale, rate of sales, sets of buyers, and other questions affecting the time and volume of sales. Since these problems are not bounded by State lines, but concern the whole area of flue-cured production and marketing, uniform or united corrective action is apparently needed. One way which has been suggested, by members of the tobacco industry and others<sup>13</sup> is the establishment of a representative committee to consider in advance of each marketing season the problems and practices that hinder the orderly and efficient operation of the system. Informal committees have operated to some extent in the past. Such a committee should be one that is recognized throughout the flue-cured region and by all interested parties. The committee could hold one or more meetings to hear the opinions of experts and of all parties interested in these problems. It could then recommend market opening dates, hours of selling time, number of sets of buyers, methods of allocating selling time, and other desirable rules or practices. The recommendations of the committee need not be binding upon any organization or agency. But any action taken contrary to the recommendations would be carefully considered and justified by those taking such action.

Because the markets and warehouse firms were established by and operate under State laws, one way to establish such a committee would be for the divisions of markets of the States where flue-cured tobacco is grown, to select persons familiar with tobacco production and marketing. Another way would be for the general farm organizations to set up a committee including growers, warehousemen, and buyers.

---

<sup>13</sup> Austin, Robert Carter. Marketing Problems in United States Cigarette Tobacco. April 1951. (Unpublished Ph.D. Thesis., Harvard University.) 248 pp., illus.



The Tobacco Division of the Agricultural Marketing Service could present its plan for scheduling the inspectors on the several markets and the reasons for distributing the available inspectors as planned. Under the support program as it operates for flue-cured tobacco, this is a key decision with respect to the number of markets, the number of sets of buyers, and the time when the markets are open. Warehousemen are reluctant to operate their warehouses if the support program is not available.

The meeting should be held sufficiently in advance of the marketing season to enable the Tobacco Division and the tobacco companies to schedule the time of their representatives on the different markets. A small continuing committee should be provided to hear requests for changes and to make recommendations with respect to these.

Charges that are high enough to provide the warehousemen with large profits will continue to encourage the overexpansion of facilities. If conditions continue to encourage this overexpansion, two alternatives are possible. The maximum rates established by State law can be lowered. A better method would appear to be to have the charges adjusted by bargaining between groups of growers patronizing the different markets and the warehousemen on the markets.

It has been shown that the costs of operating the warehouses vary with the volume sold, and, further, that the volume is dependent to a considerable extent on the production in the local marketing area and the available selling time. Charges adequate to cover costs in one market may be inadequate or excessive in another. To bring the charges into line with costs and the services rendered should be the aim of such bargaining between warehousemen and groups of growers. They could also consider jointly some method of scheduling the grower's tobacco into the several warehouses. These groups should not seek to compel all growers to join and would not need to secure the cooperation of all warehousemen.

Groups of growers in cooperation with the local warehousemen could consider the question of improving the sorting and preparation of tobacco for market in order that the grower would secure the market value for each lot. They could consider the services to be rendered, including the placing and spacing of the baskets and the careful handling of the tobacco on the warehouse floor. The problem of loss through pickups and floor sweepings is more important to the tobacco companies and should be considered by their representatives with the warehousemen. Once the several groups begin to consider their mutual problems it is likely that they will find other ways of advancing their mutual interests.

The purpose of the auction marketing is rather simple. It is to transfer lots of tobacco of different qualities from the growers to the tobacco companies at prices representing the market value of the different qualities. There is no complicated handling of the tobacco on the warehouse floor. What is required is an expert knowledge on the part of the growers, warehousemen, and tobacco company representatives of tobacco quality and the conditions that influence the market value of the differing qualities. The auctioneers' chatter and much of the action on the auction floor which is colorful and entertaining are not central to the purpose of the auction market.

### LITERATURE CITED

- (1) Clark, Carl M., and Browning, Wilmer.  
1953. Organization of the Looseleaf Tobacco Auction Market. Kentucky Agr. Expt. Sta. Bull. 599, 91 pp.
- (2) Darkis, F. R., Dixon, L. F., and Gross, P. M.  
1935. Flue-Cured Tobacco--Factors Determining Type and Seasonal Differences. Indus. and Engin. Chem. 27: 1153.
- (3) Gage, Charles E.  
1950. Marketing of Tobacco--Discussion. Jour. Farm Econ. 32 (4): 924-930.

- (4) Gooch, Ernest D., Jr., and Clark, Carl M.  
1952. Basket Price Variations for Burley Tobacco. Kentucky Agr. Expt. Sta. Bull. 591, 44 pp.
- (5) Howrey, Edward F.  
1954. Economic Evidence in Antitrust Cases. Jour. of Mktg. 19 (2): 119-124.
- (6) Martin, Lee R.  
1950. Some Aspects of Research in the Marketing of Tobacco Leaf. Jour. Farm Econ. 32 (4): 907-923.
- (7) Royster, Fred S.  
1952. Warehouse Expansion Disliked by Royster. Tobacco 134 (9): 10. February 28.
- (8) Tilley, Nannie Mae.  
1948. The Bright Tobacco Industry. Univ. of North Carolina Press. 754 pp.
- (9) United States Agricultural Marketing Service.  
1954. Official Standard Grades for Flue-Cured Tobacco (U. S. Types 11, 12, 13, and 14). U. S. Agr. Mktg. Serv. 7 pp.
- (10) United States Bureau of Agricultural Economics.  
1929. Classification of Leaf Tobacco Covering Classes, Types, and Groups of Grades. U. S. Bur. Agr. Econ. Serv. and Regulat. Announc. 118, 8 pp., illus.
- (11) United States Bureau of Agricultural Economics.  
1953. Crop Production Practices. U. S. Bur. Agr. Econ. F.M. 92, 193 pp.
- (12) United States Bureau of the Census.  
1951. United States Census of Business: 1948, vol. 5, Wholesale Trade--Area Statistics.
- (13) United States Laws, Statutes, etc.  
1929. An Act to provide for the collection and publication of statistics of tobacco by the Department of Agriculture. 70th Cong., Pub. 661, 2 pp. January 14, 1929.
- (14) United States Laws, Statutes, etc.  
1932. To amend the act entitled "An act to provide for the collection and publication of statistics of tobacco by the Department of Agriculture," approved January 14, 1929. 72d Cong., Pub. 284, 1 p. July 14, 1932.
- (15) United States Laws, Statutes, etc.  
1935. An act to establish and promote the use of standards of classification for tobacco, to provide and maintain an official tobacco inspection service, and for other purposes. 74th Cong., Pub. 314, 6 pp., Aug. 23, 1935.
- (16) United States Laws, Statutes, etc.  
1935. To amend the act entitled "An act to provide for the collection and publication of statistics of tobacco by the Department of Agriculture," approved January 14, 1929, as amended. 74th Cong., Pub. 356, 2 pp. August 27, 1935.
- (17) United States Production and Marketing Administration.  
1951. Flue-Cured Tobacco Market Review, 1950-51 Season (1950 crop). U. S. Prod. & Mktg. Adm. 46 pp.
- (18) United States Production and Marketing Administration.  
1951. Tobacco at the Warehouse. U. S. Dept. Agr. PA-175, 4 pp., illus.
- (19) United States Production and Marketing Administration.  
1952. Annual Report on Tobacco Statistics, 1952. U. S. Dept. Agr. Statis. Bull. 117, 71 pp., illus.
- (20) United States Production and Marketing Administration.  
1952. Flue-Cured Tobacco Market Review, 1951-52 Season (1951 crop). U. S. Prod. & Mktg. Adm. 46 pp.









