Several months ago when I was asked to prepare a program related to the cash activity of the grain industry, I accepted, considering it an honor to be asked to make this presentation. As I thought about this program, I felt that I had taken on a real task, but after further thought and consideration, I started thinking about the operations in cash grain and realized that they are so much a matter of daily business routine to those of us involved, that it is a good thing to sit back and try to put into words a presentation that will explain the relation of the terminal elevator operator to the futures market.

Up to this point in the seminar you have been concerned with the mechanics of the activities and operations of the futures market. Now we will introduce the relation of the futures market to cash grain operations, as it relates to carrying charges and cash basis.

In grain merchandising, every terminal and subterminal market throughout the country, as well as the local country elevators, is concerned with carrying charges and basis in its cash grain operations, with location and transportation the important factor to be considered.
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It should be pointed out that the terminal elevator operator has a place and purpose in the structure of commodity markets. He serves as the warehouseman for crops that move to market in volume during a short period of time once or twice a year, to be resold for consumption during the next twelve months. The producer, with the increase of mechanization on the farm and increased yields due to scientific farming improvements, moves an ever greater volume in a shorter period of time. He sells that portion of his crop which he intends to, obtains payment for his grain, and thus relieves himself of the problems of storage, conditioning, insurance, and financing.

These factors are now passed on to the terminal warehouseman. At the time of purchase the terminal operator has a general idea of his outlets for the grain, when sales can be made, and approximate sales value. It is the desire of the terminal operator to be able to buy and accumulate his inventory at a price in relation to the futures that will compensate him for his expense of carrying the grain as well as the drying, cleaning, and turning that might be necessary to keep his inventory in condition. It is therefore obvious that the elevator operator must have an effective means of minimizing his risk from wide price fluctuations, and obtain carrying charges and merchandising margins for the length of time he has the grain in his elevator.

In the most simple illustration of hedging, it is shown how grain is bought and hedged in the current future, and then resold and the current hedge lifted. This does occur on a certain portion of the elevator volume that is handled on a "turnover" operation. When grain is purchased, the first problem of the elevator operator is to decide where hedges will be placed against inventory accumulation. There are available to the warehouseman four or five future delivery months for
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hedging purposes. It becomes a matter of market judgement where to place the hedge. So at this point the elevator operator has to look at the “carrying charge” presented to him by the various delivery months and decide if the difference shown is as wide as can be expected, or whether it is best to hedge in the current future, and wait for a more opportune time to move his hedge to a deferred future.

Before taking up carrying charges in detail, I would like to present an illustration of price relationship of corn in an attempt to show you how the “basis,” that is the premium or discount of grain relative to a futures contract at a given point is determined. (See Figure VI page 180)

This illustration on the price relationship of corn values at interior and export points in the United States compared to CIF\(^1\) values at the United Kingdom and Rotterdam was prepared by Mr. Ted Rice of our New York office. I feel this sketch is helpful in pointing out how values at various interior points in the United States relate to the world values, and it will also give you a picture of the cash value compared with Chicago futures prices. This relationship of cash price to a futures, or “basis” is the operating fundamental of a cash grain warehouseman.

For purposes of simplicity of calculation some of the values in the example are slightly different from actual. It must be remembered that ocean freight rates, including the differential between Gulf and St. Lawrence, change constantly. The interior prices shown are to the elevator loaded on barge, or freight car, as the case may be, and not the price paid to the producer. Elevator margins vary according to location and time of year. The purpose of the illustration is to point out a logical range of values relative to Chicago at a number of points.

\(^1\) CIF means “cost, insurance, and freight”.

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Figure VI

THEORETICAL PRICE SURFACE FOR CORN

On Barge
Minneapolis $1.25

Delivered to Chicago
$1.29

Barge Freight
2¢

Delivered Toledo
$1.31

Local Rail Rate
9¢

Elevation and Ocean Freight
24¢

CIF United Kingdom
$1.56

CIF Rotterdam
$1.55

On Barge
Lockport, Ill.
$1.27

Elevation and Ocean Freight
15¢

Rail Export to
Champaign, Ill.
$1.20

Rail Export to
Norfolk, Va.
$1.41

Elevation and Ocean Freight
18 1/2¢

Elevation and Ocean Freight
17¢

Rail Export to New Orleans
11¢

Barge Freight to New Orleans
13¢

Delivered Rail
Norfolk, Va.

Elevation and Ocean Freight
18 1/2¢

Delivered New Orleans
$1.38

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Using the Chicago May corn future at $1.29, our bid to the country elevators for delivery by truck to our Lockport elevator would be a basis of 4 under May, or $1.25 (allowing 2¢ for elevation) which from the illustration would equal $1.29 Chicago or May price delivered Chicago. We would also be bidding the same $1.29 or May price delivered Chicago for rail grain from other origins. The truck bid is usually under rail because of the value of billing for transit purposes.

Let's look at this same illustration and go back to harvest last fall when Chicago December corn was $1.23 and May was $1.29 or a carrying charge of six cents was “showing on the board”, and use Minneapolis corn for purposes of illustration. Navigation of the upper Mississippi River closes in early December and does not open again until late March or early April. Let's assume the buying basis delivered our Minneapolis river elevator during harvest was 9 cents under December, or $1.14. The elevator operator can place a hedge in the December corn at that time or can look at the May future and sales volume for opening of navigation for purposes of carrying charges. Let's say that this corn is hedged in the May at $1.29 so the cost of the corn is now 15 under May. During the months prior to opening of the upper river, trading is done on Minneapolis corn basis “opening of navigation.” Let's assume in line with our illustration that sales are made basis 9 over the May, or 1.38 CIF NOLA with futures prices unchanged or $1.29 May. From this difference of 15 under to 9 over, or 24 cents, is deducted the barge freight of 13 cents, leaving 11 cents to cover elevation costs, shrink, interest and other minor expenses. The interest on $1.14 corn for four months, December 1 to April 1 at 5% is 1.9 cents per bushel. If we would place the other costs at approximately 3 cents, then we have captured the six cents carrying charges showing on the board last fall at harvest time.
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Our sketch also shows the relationship of a central Illinois rail point, Champaign, Illinois, and the three-way possibility of merchandising rail corn from central Illinois to Chicago, New Orleans, or Norfolk. Because of many factors involved, this central Illinois corn will find a home at interior processing plants or elevators or it will move into export channels at one of the three points mentioned above. It is ideal for the central Illinois elevator to have all outlets competing for their offerings. The purpose of the foregoing was to bring out illustrations of carrying charges and basis in typical cash transaction.

Those of us in grain merchandising must be considered "opportunists" trying to devote our limited resources to those activities which present the maximum profit or minimum loss. For illustration of this point let's take a look at the wheat and corn futures close on the Chicago Board of Trade during the fall of last year as shown below:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Wheat</td>
<td>Corn</td>
<td>Wheat</td>
<td>Corn</td>
<td>Wheat</td>
</tr>
<tr>
<td>Dec.</td>
<td>1.49</td>
<td>1.51/4</td>
<td>1.51/2</td>
<td>1.51 1/2</td>
</tr>
<tr>
<td>March</td>
<td>1.52 1/4</td>
<td>1.54 1/2</td>
<td>1.55 1/4</td>
<td>1.54 1/2</td>
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<tr>
<td>May</td>
<td>1.53</td>
<td>1.54 1/2</td>
<td>1.56 1/2</td>
<td>1.55 1/2</td>
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<tr>
<td>July</td>
<td>1.49 3/8</td>
<td>1.52 1/2</td>
<td>1.52 3/4</td>
<td>1.52 1/2</td>
</tr>
<tr>
<td>Sept.</td>
<td>1.51 1/4</td>
<td>1.52 1/2</td>
<td>1.55</td>
<td>1.54 1/2</td>
</tr>
</tbody>
</table>

These closing prices show the fluctuation of prices and spreads over a period of a month and a half. The December-May carrying charge for wheat ranged from 3 to 5 cents while the same December-May corn range was 6 to 7 cents. From the November 30th close, we can see the carrying charge for corn is in line with our previous illustration reflecting approximately six cents from December to May with wheat showing 4 1/2 cents for the same period with an inverse of 3 1/2 cents.
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to July because of new crop wheat available for delivery in July.

From an elevator inventory management point of view, the relationship of carrying charges during corn harvest of these two commodities has to be compared. On October 30th the December March corn carrying charge of 4 1/4 cents against wheat at 2 3/4 cents plus the interest calculation due to price relationship would make wheat an additional 1/2¢ more expensive to carry than corn for the four month period. In addition the carrying charge to May on wheat was only 1/4 cent compared to 2 3/4 cents on corn based on the close October 30th. Therefore, wheat ownership should be liquidated and replaced with corn. The futures market prices tell us this, but it is easier said than done. It is clear that the Chicago market will try to liquidate wheat and increase corn ownership during this period of corn harvest and heavy movement. However, these same calculations are made by elevators in other parts of the country and the wheat buyers take this opportunity to be selective as to wheat class and grade and future billing requirements in making purchases against the elevator space they have available. During the period of corn harvest last year, the Chicago elevators were fortunate to find a limited outlet for red wheat in the southwest on an export rate to New Orleans that allowed transit at many Texas points. As a result, our red wheat was available to many Texas mills for blending purposes at a discount under southwestern hard wheats. The important factor during these periods of heavy corn movement is to have as much space as possible available for corn. Delivery on the December wheat contract would not be the solution to an elevator space problem. The pressure of corn harvest is usually over by December. It is more expedient to find outlets during October and November as space is needed. We have been looking at the wheat and
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corn relationship in this case. Often sales of other commodities might be more advantageous if the elevator can replace with corn at a depressed harvest basis. For example last fall when the truck corn basis dropped to 6 cents to 7 cents under December basis number two yellow at the height of harvest congestion a buyer for a cargo of soybeans with a vessel for nearby lifting would find several anxious sellers.

In the Chicago market we say we always have a sale for our grain if it is of deliverable grade because a short futures position can be satisfied by the delivery of warehouse receipts against the short position. As in the case of the foregoing illustration on wheat and corn carrying charges, the "inventory management" phase of terminal operations comes into play as each delivery month approaches. It is a policy decision of the local elevator manager, after examining his elevator inventory and hedged position of the individual grains, to decide on delivery intentions. Each grain must be studied to anticipate the potential demand of processors and users of the grain. It may be more prudent to sell cash grain before the delivery month or withhold the grain from the delivery market for more opportune sales at a later date.

How are carrying charges made? In general, we say carrying charges are created by grain not being wanted at existing prices. We decide to make delivery on a futures contract when we are unable to merchandise the cash article at as good as delivery basis. Frankly, we seldom make delivery if we believe the grain will be ordered out. The party who receives delivery does one of two things: (1) he pays for the warehouse receipts, leaves the grain in our elevator and starts paying us carrying charges, or (2) he retenders, that is, he sells futures and redelivers the grain to someone else. If the grain remains in our elevator after the original delivery, although the warehouse receipts may pass back and forth through several hands
as the current delivery is being satisfied, we are: (1) relieved of interest and insurance costs, and (2) paid .06 cents storage per bushel per day. If the grain is retendered day after day, it tends to weaken the nearby contract relative to deferred contracts. As these carrying charges widen, we will decide at some point to buy the nearby contract and sell the deferred. Then we, as a long in the current future, recapture our grain and have it hedged in a deferred future at a better basis than that which existed prior to delivery.

Another factor in carrying charges is our tax structure. If a speculator buys a future and holds it six months and one day or longer, he is eligible to capital gain if there is a profit. Because of the tax advantage of capital gain there is a tax advantage for speculators to buy futures which offer long term possibilities.

Generally speaking, carrying charge markets are bearish since they indicate the grain is not wanted. However this is not always true — in a major speculative bull market such as the 1955-56 and 1960-61 soybean markets, there is a tendency for the tax buying aspect to widen carrying charges.

Also, as a generalization, carrying charges are wide when elevator stocks at delivery markets are large and narrow when they are small. There can be exceptions to this for individual commodities.

Now let’s consider why inverse carrying charges usually indicate a bullish situation. First, they indicate there is little threat of deliveries because the cash basis at the delivery market is higher than the owner can obtain by making delivery against the futures. Second, stocks are usually relatively small with cash grain stocks needed for merchandising. Since cash ownership by the trade is small, there is little short hedging pressure. The speculative element is usually convinced that current values are temporary and will decline in the future.
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This is very logical in the most common inverse carrying charge situation — old crop/new crop such as May/July wheat or September/December corn.

Inverse carrying charges as above provide incentives for the grain trade to be short cash and long futures. Grain merchants will offer cash grain for deferred shipment at a discount relative to spot values. Grain processors usually operate with minimum inventory and cover forward needs at a discount. As time passes the long in futures will stand for delivery unless he can convert his futures to cash at a favorable basis. On the other hand, the speculative short who has no grain must buy back his futures at a price which will allow the trade to convert to cash at a profit. This is not to infer that the speculative short always loses money. The cash merchant who is long futures and short cash does not care whether the market goes up or down, he is concerned with the basis in relation to the future so he wants to be able to cover his short cash premium position at a profit.

Another facet of the futures market in cash grain merchandising is the fact that length of time for trading with the use of futures for protection is extended at least nine months in the future. This enables sales in the spring of the year of new crop grain on a basis relative to new crop future. In the case of soybeans with November futures at a discount or inverse of approximately 45 cents under the May there has been considerable buying of the new crop positions by many importing countries. In corn there has also been considerable sale of new crop for export at the discount of new crop under old crop.

Because it is normal for an inverse carrying charge to exist between old and new crop such as September and December corn, or August, September and November beans, firms such as ours will have no premium ownership and will go into
harvest short cash or premiums and long futures as a result
of forward sales mentioned above where we have sold on a
basis and bought new crop futures for protection.

As harvest expands, purchases of cash are made against sales
of futures until the short premium position is eliminated.
It is then that the grain merchant hopes that the buying basis
relative to the futures is attractive and inventory accumula-
tion can be made at a basis that will provide carrying charges
for the inventory accumulated. As this accumulation is made
the merchant is in a long cash — short futures position which
is the concept most people have of grain elevator operators.
Few people appreciate the grain trade's contribution in accel-
erating purchases at harvest by forward sales of cash commod-
ities against purchases of futures as their protection.

In this discussion I have not mentioned government activity.
Our markets are still based on the fundamental laws of supply
and demand, but government sales, storage, price support and
pricing policies are factors that affect both futures and cash
operations of the grain trade. The trade must be ever alert
to these changes and their market effect.

In conclusion, I wish to thank you for this opportunity to
appear before you today. In your program schedule time has
been allotted for discussion, so I will be happy to try to
answer any questions you might have.
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Kets are large and vice versa, narrow when they are small.

WILSON: Yes.

UHRIG: With the shifting to shell corn and perhaps delivering more corn to the elevator from the field at harvest time, would you anticipate that this carrying charge would widen in the future?

WILSON: You will have a widening of carrying charges. Let's switch to this illustration: Last fall our corn movement was well under way in October. We had an early movement last year, and on October 15th, the carrying charge December-May, was showing six cents. On October 13th when there was heavy pressure, that charge widened out to seven cents because of the pressure of the harvest movement.

ULLMAN: Well, as elevators install dryers and also utilize their storage capacity, would there be more of a tendency to hedge in the more distant futures market?

WILSON: That comes into a matter of judgment on what you would feel you could obtain in the line of carrying charges. In other words if you feel that the seven cent carrying charge is as much as could be expected, you would probably be hedging in the May at that point.

EHRICH: Do you always trade on the basis? Does your company ignore this carrying charge and just plan speculate with your —

WILSON: No, in an operation such as ours, we are really basis operators. In other words, we have to have a hedge position. With the inventories of grain that we carry all over the country, we have to continually go to the banks for financing against warehouse receipts, and unless we were in a hedge position, the banks would question how much credit they would extend us. But there could be cases where some people would feel that they wanted to be outright long, that the market was going to improve, but, then, you are a speculator in the
cash grain business. You are not really trying to be a merchant.

GOLDBERG: Do you find it more difficult to maintain the trading basis operation in markets that have inverse carrying charges like when you have the dramatic change in the price support program in '63? How do you maintain your trading basis and inverse carrying charge with as much volume activity as you can on a forward carrying charge operation?

Do you find it more difficult or not to trade in that kind of a market?

WILSON: If I understand your question correctly, yes it is rather difficult trading in an inverse carrying charge market. In your trading, you decide on a basis of value, and the futures will have an effect on this basis.

If you are short cash and the futures would work up, it could be that you would buy on a better basis than you would if the futures went down but the reason the futures go down in a market of that type is because some grain presented itself. I mean, there is some reason for the market to work off — some factor behind it.

BAKKEN: Don't large firms carry some of the risk in selective investment in their grain? That is, they don't hedge all of the grain, they carry some of the risk themselves, do they not?

WILSON: Well, not to a great extent. I mean, in any operation, such as ours or other firms in the grain business, you are never going to be completely hedged. For instance, during a period of heavy harvest pressure, we will pre-hedge before the close of the market. We will start selling futures in anticipation of grain purchases overnight by our office here and other offices in the harvest area.

ARTHUR: Let's assume you have grain in an elevator which is now covered with short future. Your customer in
FUTURES TRADING SEMINAR

Rotterdam gives you a firm order for that grain which you are going to ship physically, that order takes the place of the future contract.

WILSON: As soon as the sale is made in Rotterdam, we will buy in our short futures. That is how we keep our hedge position even.

ARTHUR: Therefore, you have an equivalent of the futures hedge in forward sales of actual cash grain. My question is, is this treated in equal terms by the banks, by the credit grantors.

WILSON: Yes. Our over-all position would be what would be examined, the cash ownership and the sales against it, and we end with a net cash position long or short, and, then, a net futures position long or short to correspond with it.

ANDERSON: You mentioned truck shipments are purchased at a discount. I wonder if you could give the basis for the discount.

WILSON: I will say that should be explained in two ways, Mr. Anderson. Concerning delivery on a futures contract, when a regular elevator delivers warehouse receipts, he has to protect the proportional billing rate from Chicago. In other words, this requires an inbound freight bill of twelve and one-half cents a hundred if he delivers grain that would have truck tonnage. That could cost seven cents a bushel if it were taken out by rail.

When we have our shipping season open, the truck bid at times will be almost equal to the rail bid. Right now, the bid that went out of here tonight on truck corn was one over, and for rail billing two and one-half over.

It is still at a discount, but as we ship grain from our elevators over the seaway, we don't need billing, so the truck grain fits the picture.

MUTTI: Is there any way to generalize on a series of fac-
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tors when you have inverse carrying charges? Can you say that this is a period of abundant storage, or can you really classify conditions when inverse carrying charges are most likely to occur?

WILSON: Well, it would be in general, as I tried to point out, when you are in an old crop-new crop situation that your inverse carrying charges would be in effect. Take the present May wheat and July wheat. May wheat closed today at approximately four cents over July. The factor behind this is the wheat here in Chicago. There are approximately four million bushels of wheat in store here in Chicago that appear to be surplus. A few days ago — the May-July inverse was seven cents. It is possible that the May could narrow further on the July unless there is a possibility of some export business or some business under Public Law 480 that would move

ANDERSON: Is this four million bushels you referred to wheat from Chicago through the St. Lawrence Seaway, privately owned stocks?

WILSON: The actual stock is more than that, but in a calculation we figure that there are approximately four million bushels of wheat left here that we don't have a home for, over regular known requirements.

ANDERSON: Then, the question I have pursuant to that is, what impact does the presence of the commodity corporation stocks in the area have on carrying charge.

WILSON: We have very little Commodity Credit stock in Chicago. There is no Commodity wheat stock. Their corn stock is down to a million, three hundred thousand bushels. Their corn stock was ordered out during the winter because they needed corn for the livestock feed program in the East and for export sales. They pretty well cleaned out their stocks of corn in Chicago.

If there are CCC stocks in a delivery market, and CCC
came out with a sales program, it could have an effect on carrying charges.

EHRICH: Mr. Wilson, do you think that the Chicago stocks have the most influence on the spread between Chicago futures — and you don't consider stocks, say, of spring wheat and stocks of hard wheat in Kansas, etc.?

WILSON: As far as your Chicago futures market spread relationship is concerned, it is the stocks that are in Chicago or available to Chicago, tributary to Chicago, that could be moved in. Spring wheat because of a price relationship would hardly find a way into Chicago. The mills here use a certain amount of spring and hard wheat in blends, and they will buy springs in the northwest and southwestern hard wheat. Chicago is really a red wheat market other than a certain portion of Northern Illinois hard wheat that moves in here each year during the harvest.

MEIBURG: I have a question on transportation. Apparently, you have to keep track of how the grains move in, the means of transportation by which they enter. Is this an Interstate Commerce Commission requirement, or what does it matter to the elevator operator or the processor how the grain moves?

WILSON: It matters because of lower freight rates when transit billing can be used. That is tied up with the railroads and the freight bureau, and we have to make a daily tonnage cancellation. In other words, we bring in grain by rail car, and when we pay the freight, the freight bill is registered. Then, when we use that same bill against an outbound shipment, we present our transit shipping directions to the Bureau, and they cancel a certain amount of the tonnage that we have received previously on inbound shipments, but we are on a daily cancellation basis and have to keep our billing in order here.
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ULLMAN: You see the use of, say, "Big John" hopper cars or other improvements in our transportation of grain changing this whole transportation structure?

WILSON: Yes, I think the influence of the "Big John" is going to be felt more and more. Last year we received hopper cars, and quite a few of them came into Chicago, not only the big hopper car, the "Big John", but because of the shortage of boxcars, they were even using open coal cars.

ULLMAN: And they do not have transit privilege available?

WILSON: On the hopper cars for instance, on the C. & E. I., they have a hopper car rate that does not have transit, I think that is what you are referring to. That is the same as a truck bill and would be considered about in line with the truck price, and that's the way they were purchased during the harvest last year.

KNOKE: Mr. Wilson, we thank you for this very interesting talk.