



Studies in Management and Accounting for the

FOREST PRODUCTS INDUSTRIES

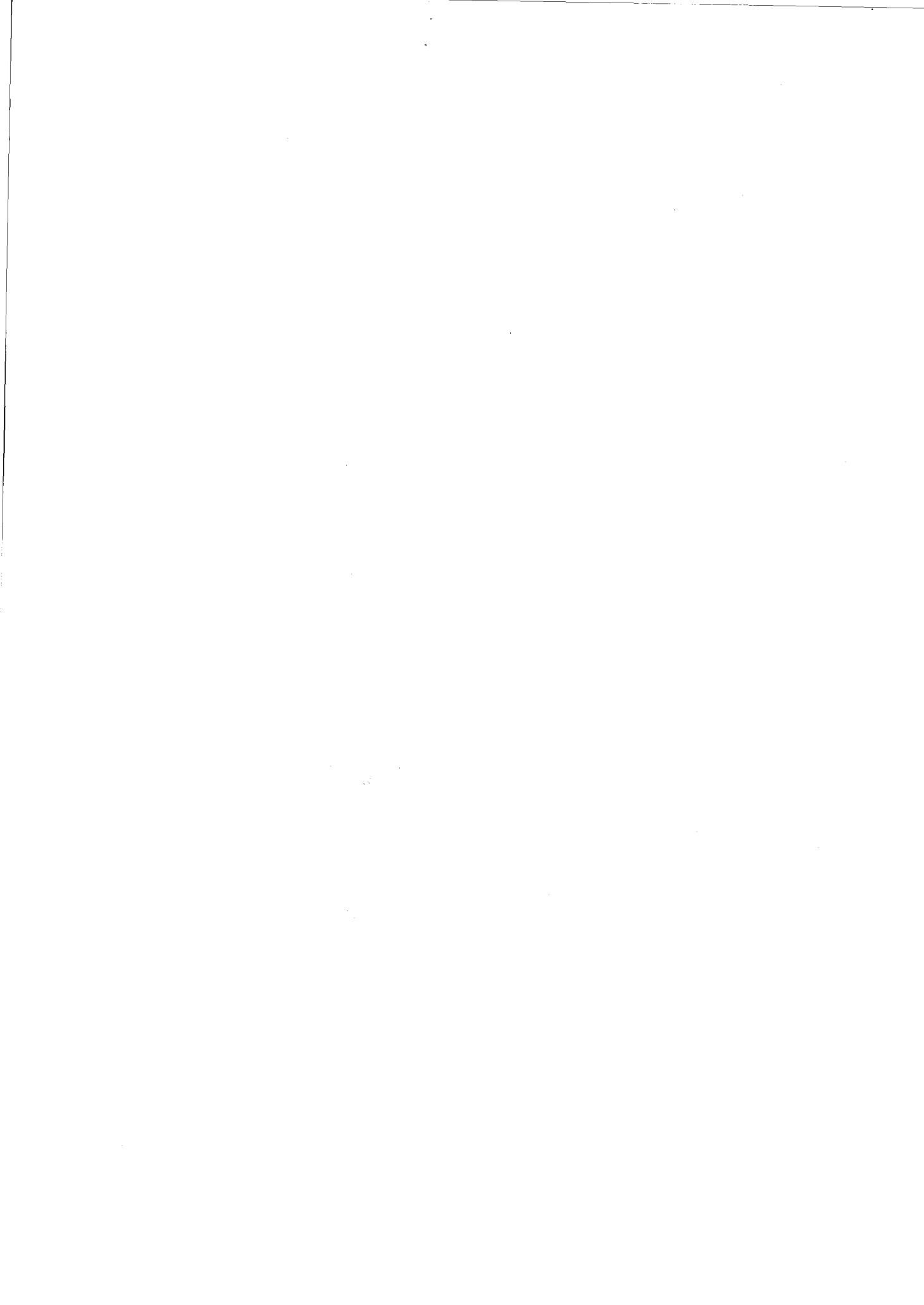
A Reporting and Control System
for
Wood Products Futures Trading Activities

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A REPORTING AND CONTROL SYSTEM FOR WOOD PRODUCTS FUTURES TRADING ACTIVITIES

by William A. Pass, Gregg L. McKee, Jr., and Robert E. Shirley

INTRODUCTION

The third monograph of this series considered futures trading by forest products companies and suggested decision rules for management. The following monograph, Number Seven, describes a system of accounting controls that could be adopted by any company engaged in commodities futures trading in wood products contracts.

In 1977, I interviewed accounting officers of seven companies actively engaged in futures trading in lumber or plywood—Crown Zellerbach, Weyerhaeuser, International Paper, Champion International, Willamette Industries, Louisiana Pacific, and Brand-S. While the companies already had accounting controls, these accountants felt that publishing our research on an accounting control system for the industry would help them in their accounting for futures transactions.

The model control system presented here possesses many features used by the seven firms interviewed and should provide a base for close cooperation between the trader and the futures accountant.

Futures trading—a relatively new activity of forest products companies—is organized in a variety of ways. The seven-firm sample indicates the diversity:

A separate Futures Trading Department, headed by a full-time trading specialist, existed in four of the firms. A fifth company assigned futures trading duties to its General Sales Manager. Another made a senior executive responsible. In the last company surveyed, the Vice President of Finance handled futures trading.

In three of the four companies with a separate department, the trader reported to a senior operating executive. In one company, the trader reported to the Assistant Treasurer.

Traders in three of the seven companies had gained experience in the brokerage business. One full-time trader had been a financial analyst with a forest products firm before assuming his present post.

All seven companies booked profits and losses for financial purposes only after trades were closed. Each of them, however, provided internal management with reports on equity in current trades.

Four firms followed trading strategies, but none related profits or losses to the strategy used. Two companies limited their hedged position to a percent of the production while two more had different hedging guidelines.

All seven companies used brokers' statements as a basic control document, but how much the firms relied on the statements varied.

A single company allocated profits or losses from its trading activities to division or mills.

The following is a case study of futures trading by a major forest products company. It shows how one company controls its futures activities while providing management with ample assurance that the activity is totally within the bounds approved by the corporation.

R. E. Shirley

**A REPORTING AND CONTROL SYSTEM
FOR
WOOD PRODUCTS FUTURES TRADING ACTIVITIES**

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SECTION 1

A REPORTING AND CONTROL SYSTEM FOR WOOD PRODUCTS FUTURES TRADING ACTIVITIES

Because we use some terms with meanings unique to futures trading, we have included a glossary at the end of this paper. Readers may want to briefly review these definitions before proceeding.

Overview

We were apprehensive once we learned that our company intended to begin trading in the lumber and plywood futures markets. Among other things, ours would be the job of developing the reporting and controlling systems to monitor the trading activity. We had heard various horror stories of tremendous losses associated with other companies' futures trading programs; and rumors spoke of losses resulting from trading activity on a scale not authorized or envisioned by corporate sponsors.

Determined to avoid these problems, we looked for the best systems of reporting and controlling futures transactions. Checking with other companies and researching publications on the subject yielded so little that we realized we would have to design our own systems, procedures, and reporting formats. We decided that our approach would involve both the reporting and controlling aspects and identified the following objectives:

- Ensure that all trading activity remains within the limits set by the company.
- Guarantee that brokers' records are correct, cash transfers accurately made, and committed funds safeguarded.
- Periodically advise management of positions taken.
- Keep the accounting simple and straightforward.
- Avoid overcontrolling the activity, which unnecessarily limits the trader's flexibility.

We have been using the system we describe here for about two-and-a-half-years. In that time, we have found all our objectives satisfied, control adequate, and the task of tracking and appraising trading activity simplified.

SYSTEM DESIGN

The reporting and control system has four distinct elements:

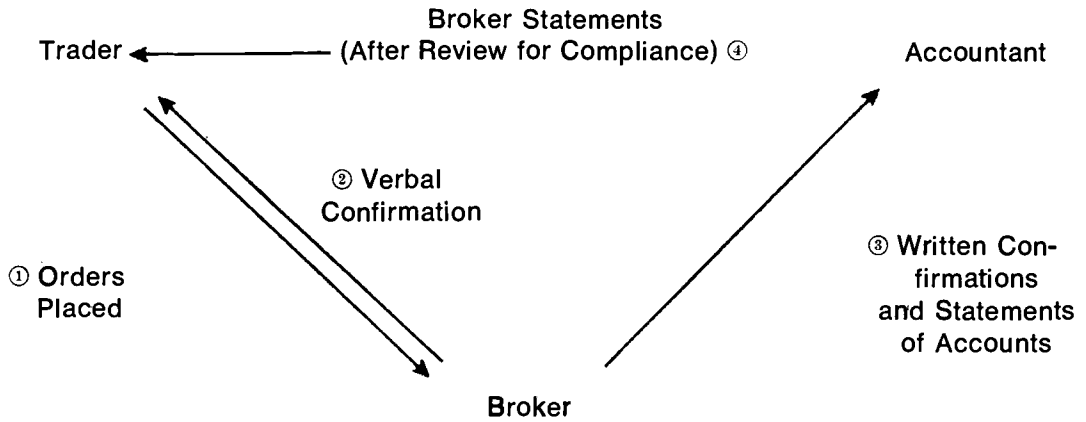
- Daily tracking of futures trades and cash transactions by the trader.
- Accounting for all transactions in both futures and cash markets, and monitoring activity to see that it complies with authorizations. An accountant performs both of these functions.
- Reporting weekly and monthly to senior management. In these reports, the trader summarizes recent activity, comments on expected performance, and reviews economic results to date.
- Continuous, unscheduled reviewing by the Internal Audit Department. These audits cover every aspect of the activity.

These first two functions are the most difficult because they involve tracking, classifying, and controlling the activity; consequently we will emphasize them in the information that follows. The third item reports in broader terms what has already been recorded, and the last item is, from our perspective, a passive function, performed outside our responsibility.

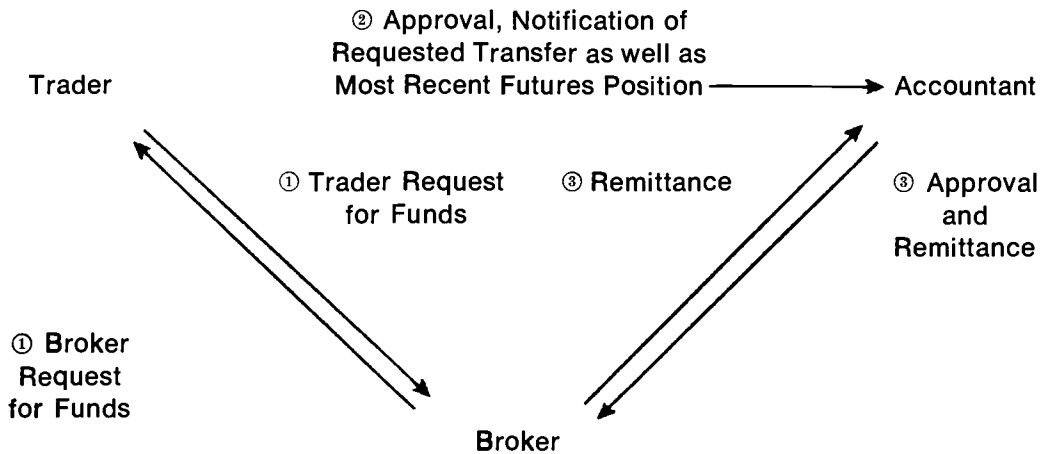
To achieve an acceptable degree of control, someone apart from the trading activity must be placed in the flow of information; this provides a third-party view of ongoing activities. There are two key information flows where this has been accomplished: in the placing of orders and in cash transfers. We use the information flows to achieve third-party viewing. As the diagrams on page 6 show, each party is involved in every information flow.

Tracking and accounting for transactions, easily the biggest job of reporting and control, has developed through trial and error. We found that, although brokers confirm each trade and provide a daily position statement, we could not rely solely on their reports for fully updated summaries of

Placement of Orders



Cash Transfers



trades in place. With normal delays in mailing, a daily report might take a week to arrive. Problems other than keeping current occurred. For example, with trades being initiated and completed daily, a broker sometimes failed to offset both sides of a trade at the time requested.

To avoid such problems, we began tracking our own trades each day. This was accomplished with a computer timeshare system using programs that maintain a master record of all open transactions. Rather than rely on brokers' reports, we use this as our main source document. (A typical daily report from the system, titled "Plywood Account Status," is shown on page 9.) At day's end, all new trades are added to or subtracted from the total record, and settlement prices are posted for each trading month. In less than fifteen minutes, an updated report is produced, one which is quite valuable, since it shows each trade and its type, an identify-

ing number, the broker used, the execution and settlement prices, and the daily equity. The trader keeps the Account Status Report current and in agreement with those trades actually in effect.

In addition to accounting for trades, the overall system monitors the total open position to ensure it complies with the corporate authorization.

To be of value, any control function must be based on trades currently in place, rather than a validation of reports which reflect a trading position of as much as a week old. The only broker information which readily exists, which is based on current trades in effect, and which can be easily checked, is the daily statement of excess or deficit cash held by the broker. If we could produce an independent calculation of excess or deficit funds which agreed with that produced through a separate procedure by the broker, then we reasoned that all of the records of open futures contracts,

calculated profits, and cash transfers must be consistent between our records and those of the firm through whom the orders were placed.

In practice, we have found this approach helpful, reliable, and not too time-consuming. We maintain a current record of all trades and the resulting equity in the trading account. (This is the Account Status Report described above.) Each morning, the trader calculates the funds payable to or receivable from a broker and compares this with the figure given by the broker. If errors in any of the account elements exist, the two numbers will be different. If the broker and trader are carrying different quantities or prices, their open equity figures will not agree, producing different cash transfer requirements. Errors in calculating profits or cash transfers, or any undisclosed charge against funds deposited with the broker, will also result in a disagreement. This characteristic forms a key element of the control system for the trading account.

Control is asserted through daily confirmation of the two cash transfer amounts. So long as they remain equal, the total daily position reported by the trader is accurate. The quantities and types of trades are checked—to see that they fall within corporate limits—by reviewing the Account Status Report.

The trader initiates all entries and changes to accounting records. He writes a Daily Activity Report, summarizing all completed trades, totaling the day's gain or loss, and categorizing the money spent or received. Accounting personnel use this report to create accounting records, to track the funds transferred to numerous accounts, and to monitor and control both the total trading position and the funds paid to or received from the broker.

After the trader has checked the broker's transfer amount against his own calculations, he gives the accountant copies of the most recent Account Status Report, his daily report, and a summary of cash transactions with the broker. (These forms are all shown on page 9.) The accountant reviews this information and, if needed, issues a check to pay any funds due the broker.

This step provides the system's second check-point. It is here that the accountant receives a listing of all trades in effect. He reviews these for compliance with authorization, and is assured of the accuracy of the list by comparing the calculated vs. the requested cash transfer amounts.

As our efforts have progressed, we have often been reminded that the system's success depends

largely on the communications which exist between the trader and the accountant. The range of possible trades in futures trading is large. Hedges, basis trades, certificate transactions and spreads may look alike from a distance, but they can require sharply different accounting treatment. The futures trader is usually the only person who knows the rationale behind a trade: For example, a trade of six short positions could encompass, say, three totally different purposes, each requiring a different accounting treatment. Since only the trader will have a full view of all components of the transaction, he must be the initial link in the chain of accounting for every item.

For the reader to fully understand our futures control system, we include a case study using six weeks' actual activity. This case study utilizes all the control forms and procedures needed to account for and control the activity.

A final word: We advise anyone who is uncomfortable with an existing futures accounting system to set up a new trading account and *start from scratch*. This ensures control of the activity from the start; surprises can come only from the old trading account. It is much easier to analyze an inactive account than an active account once control is lost. We recommend the same approach when a trader is replaced; the existing account must still be managed and closed out, but the new trader may then start with a clean slate, proceeding without inherited problems or advantages.

CASE STUDY INTRODUCTION

The following material covers six weeks of trading activity and includes the accounting records for that period. One day, January 11, 1977, is examined in detail as a sample of possible transactions and supporting accounting records. The examples illustrate how each report is checked, compared to other reports and to the broker's Confirmation Statement of Account.

The basic control documents are explained here (and diagrammed on the layout on page 9):

Futures Control Sheet. The accountant uses this schedule to control the total accounting activity. Each broker has a control sheet, on which is shown all activities performed by the trader. The summary control sheet has as many accounts as are needed to reflect the trading activities underway. It is linked to the broker's statement by the cash balance column, since anything affecting cash deposited with the broker shows up there.

Plywood Account Status Report. (ASR) This report lists all trades which are currently in effect. The trader enters each trade and the latest settlement prices into the timeshare computer system daily and adds or deletes positions taken that day.

Every open position must be included in the Account Status Report; if any are left out, the position's open equity and therefore the trader's calculations of cash transferred to the broker will disagree with the broker's request.

As an element of control, the accountant has access to the trader's program and can independently enter settlement prices into the system and obtain the most recent record of trades. The Internal Audit Department also can access the time-sharing control files, which permits an independent, surprise check to see if the trader's records match the broker's.

Broker Cash Transactions. This record shows the cash which has actually changed hands with the broker (the Cash to Account-Actual column), profits and losses occurring in the account, the cash on deposit with the broker, and the theoretical transfer of funds as calculated by the trader.

The theoretical transfer may differ from the actual transfer because of differences in timing of some charges such as commissions or of corrections of previous discrepancies. Any differences, however, *must* be reconciled. This ensures the accuracy and control of the full system. An inability to reconcile gives an immediate warning that an error exists. Any reconciled difference between the theoretical and actual transfer is carried in the Cumulative Balance Due column.

Plywood Futures Daily Reports. The trader uses this report as his primary record of items that cause the cash balance in the brokerage account to change. It lists all trades as they are completed, shows the calculation of the resulting gain or loss, and describes the intended accounting treatment for each. It also lists such non-P&L cash transactions as freight receipts and payments, as well as other cash items flowing through the account. This is the original worksheet in the chain and communicates the intent of the trader to the accountant.

The accountant's Futures Control and the trader's Broker-Cash Transaction sheets are prepared daily, but they reflect a full month's activity. Other reports are daily statements providing a snapshot of status and activity for any given day. As the case study demonstrates, these documents tie together to give control of the activity.

The activity of January 11, 1977, has been selected to show how the broker's Confirmation Statement of Account is checked with the trader's and accountant's statements. (The full chronology of activity in Section 2 shows the evolution of this day's trade, as well as the other positions then in effect.)

On that day, the trader completed a basis trade by purchasing five May contracts at \$191.50 and selling five cars of cash wood at \$204 (gross). The daily report shows exactly what the trader does after a trade and the accounting treatment needed to handle the transaction.

First, the following day's cash transfer is calculated on the Plywood Account Status Report. The trader uses the ASR and the Broker Cash Transactions Report to determine what funds are owed either to or by the broker. This amount equals the total open equity plus the broker cash balance, less margin requirements, and appears daily at the bottom of the ASR. After the trader and broker agree on the amount to be transferred, the trader sends the futures accountant copies of the ASR, the Broker-Cash Transaction Sheet, and the Futures Daily Report. If any funds are due the broker, a wire transfer is made to settle the outstanding balance.

The accountant then proceeds to post the activity. From the Daily Report, these figures are transferred to the control sheet (see exhibit 1 on page 9): the receivable of \$70,035.46 ("A"); the cost of the wood sold, \$68,656.90 ("B"); and the completed basis-trade profit of \$2,860.06 ("C"). The hand calculation at the bottom of the ASR shows \$15,653.50 ("D") as the transfer due from the broker the next morning. This entry also appears as the theoretical transfer in the Broker-Cash Transaction Statement. Control is assured when—as is shown—the broker actually does report that he is transferring \$15,653.50 ("E") to the company and this transfer amount agrees with the calculated theoretical transfer.

When the broker's statement arrives several days later, it is compared with the ASR: the total contract quantities and total open trade equity ("F" and "G") are seen to agree, disbursement of a \$33,183.50 amount confirms a similar entry on the Broker-Cash Transaction Statement ("H") for the previous day, and the account balance ("J") agrees with that shown by the trader on his Broker-Cash Transaction Statement and by the accountant on the Futures Control sheet.

FUTURES CONTROL SHEET
January 1977

Date	Hedging Gain	T-Bills	Completed Basis Trades	Cash (Sent)	Received	Certificates Outstanding	Basis Trade Wood in Storage	Flywood Certificate Wood	Accounts Receivable	Cash Balance
12/15				(139,366.66)			139,366.66			
12/16				(4,000.00)						(4,000.00)
12/16				(69,683.33)			69,683.33			(4,784.00)
12/17				(784.00)						(5,568.00)
12/17				(139,366.66)			139,366.66			(12,594.00)
12/18				(7,810.00)						(18,404.00)
12/20				(68,656.90)			68,656.90			(25,260.90)
1/3					3,700.00					(21,560.90)
1/3				(69,683.33)			69,683.33			(28,244.23)
1/4		24,893.30			274,402.94	(294,582.24)				(23,751.24)
1/4				(211,102.85)			(278,733.32)	278,733.32		(4,118.00)
1/4							211,102.85			(2,016.15)
1/5				(7,638.00)	5,840.00					(2,796.15)
1/6					8,514.00					(1,282.15)
1/10				(2,479.63)	(10,422.00)		(69,683.33)		70,035.46	(9,013.50)
1/11			"C"	(2,860.06)			(68,656.90)		70,035.46	(22,688.50)
1/13			"D"	33,183.50			(69,683.33)		68,318.91	(15,369.59)
1/13				3,744.36					140,070.80	(177,369.66)
1/13				(7,924.46)						(185,294.12)
1/14						147,291.12		139,366.66		(46,927.50)
1/17				(8,664.34)	(110,615.66)	73,644.60		(69,683.33)		(140,735.23)
1/19	(4,027.50)				18,023.00				135,264.37	52,619.00
1/20	(9,385.00)			(16,007.00)						66,614.50
1/21	(9,005.00)				2,249.50					41,224.50
1/28	(6,435.00)	(25,000.00)		(8,437.00)						34,467.00
2/2	(9,802.50)				16,315.00					(7,405.00)
2/2					2,198.50					(892.50)
2/3	(40,655.00)	(106.70)	(25,568.48)	(863,573.39)	381,023.24	(73,646.52)	70,367.62	69,683.33	483,725.20	1,306.00
	40,655.00	106.70	25,568.48		403,490.05				483,725.20	
	0	0	0	(79,003.40)		(73,646.52)	70,367.62	69,683.33	0	1,306.00

PLYWOOD ACCOUNT STATUS
CLOSE OF BUSINESS
11-Jan-77

CONTRACT NUMBER	BKN	CONTRACT	TYPE	QUANTITY	PRICE	SETTLEMENT	VOLUME	OPEN EQUITY
7701-106-11	A	JAN BT	5	188.50	188.50	75.0	-150.00	
7701-106-11	A	JAN BT	5	189.50	189.50	75.0	-230.00	
7701-106-11	A	JAN BT	5	188.75	188.75	75.0	-170.00	
*****TOTAL JAN****			15				-550.00	
7705-102-10	A	MAY BT	-5	195.50	192.40	75.0	2698.00	
7705-102-10	A	MAY BT	-5	199.50			2698.00	
7705-102-10	A	MAY BT	-5	195.50			2698.00	
*****TOTAL MAY****			-15				8094.00	
7707-101-1	A	JUL BT	-5	201.00	193.50	75.0	2280.00	
7707-101-1	A	JUL BT	-5	202.00	193.50	75.0	2280.00	
7707-101-1	A	JUL BT	-5	203.00	193.50	75.0	2280.00	
*****TOTAL BT****			-15				6840.00	
7707-101-1	A	JUL H	-5	198.50	193.50	75.0	1900.00	
7707-101-1	A	JUL H	-5	199.50	193.50	75.0	2280.00	
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7707-101-1	A	JUL H	-5	202.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	203.50	193.50	75.0	2280.00	
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7707-101-1	A	JUL H	-5	272.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	273.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	274.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	275.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	276.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	277.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	278.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	279.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	280.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	281.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	282.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	283.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	284.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	285.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	286.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	287.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	288.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	289.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	290.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	291.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	292.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	293.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	294.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	295.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	296.50	193.50	75.0	2280.00	
7707-101-1	A	JUL H	-5	297.50	193.50	75.0	2280.00	

The control point—\$15,653.50 excess funds in the account—is confirmed by the last entry on the broker statement, total equity ("K"). After the futures accountant has confirmed the accuracy of the trader's position and the account balances, he sends the broker's statement to the trader for retention.

At the end of each week, the trader prepares and distributes the Commodity Futures Activity Report. This report, listing the week's activity and all open positions, goes to senior division management for a continuing review of department activity. (A copy of the report for the week ending January 7 is shown on page 10).

COMMODITY FUTURES ACTIVITY REPORT
1-7-77

CURRENT WEEK'S ACTIVITY

Hedges:

Sold 20 July plywood at 200.75/MSF
Sold 20 September plywood at 201.25/MSF

Basis Trades:

Sold 20 May and July plywood contracts and bought 20 cars of cash wood at an average basis of \$16.73/MSF.

Certificates:

Put out 20 corporate certificates against January basis trade position.

NET OPEN POSITION

Hedges:

Month	Latest Price	Net Short	Average Price
Cash Price	184.23 net		
January	193.90	-0-	
March	196.00	-0-	
May	199.00	-0-	
July	200.70	30	200.17
Sept.	200.90	20	201.25
	TOTAL	50	

Basis Trades:

30 cars of cash wood stored against short May and July positions.

Certificates:

Certificates Outstanding	20 certs
Less: Wood in storage	20-cars
Certificates in offset	-0-
Net Unsupported	-0-

SECTION 2

CHRONOLOGY OF SIX WEEKS' ACTIVITY

CHRONOLOGY OF SIX WEEKS' ACTIVITY

12/15

The trader sold ten January futures contracts and then purchased ten cars of cash wood to offset the short positions that were established. The cost of the cash wood is carried in the Basis Trade Wood Stored account. This transaction was entered into because the "basis" (difference) between the cash and futures markets moved to more than \$10/MSF for the first time in several months.

12/16

The trader sold an additional five January contracts and purchased five cars of cash wood using the same approach as on 12/15. During the day, favorable futures market price movement developed a positive open equity of \$1,216.

12/17

The trader sold five more January contracts and five May contracts, then purchased ten cars of cash wood to complete the basis transaction. The May trades took advantage of a large price premium of May over January and spread participation in the market to more than one contract month. These ten trades are accounted for in the same fashion as in the previous examples.

In addition to the basis trades, the trader sold ten additional January contracts that he designated as hedges. Hedges involve the sale of future production into the market at prices higher than those forecast for that period. To an outsider, this transaction may look like a basis trade without any cash wood purchased to support it. The trader has to indicate and keep track of which are basis contracts and which are hedges. He does this on the Plywood Account Status report, which identifies every trade by type, so that the original intent of each transaction is not lost.

12/30

The trader placed an additional five basis trades as futures prices returned to sufficient premiums over cash. Accounting continues as in past examples.

The open equity of \$7,106, resulting from favorable price movement in the market, and previous

cash deposited with the broker (\$12,594) give total available cash in the account of \$19,700. Since the initial margins of \$400 per car require only \$16,000 to be maintained on deposit, the trader has the excess deposit of \$3,700 returned.

1/3

Several transactions occurred on this day.

Basis trades: Five more cars of wood were purchased and stored, and offsetting sales were made into the May futures contract; the accounting transaction is handled as before.

Certificates: Since the January futures contract has maintained its premium to the cash market price, the twenty basis trade contracts sold into January are settled by delivering certificates against the January short position.

When the certificates are delivered, the January position is closed and payment of \$294,000 is received. This is recorded as a liability, classified as Certificates Outstanding. The basis wood used to support the original basis trade (\$278,733.32) is moved over to the Plywood Certificate Wood column to reflect the cost of wood supporting the twenty outstanding certificates.

Treasury Bills: To avoid the loss of interest earnings on the initial margin deposits, a \$25,000 Treasury Bill was purchased for \$24,893.30. These funds then cover \$25,000 in required deposits of initial margin. (The exact margin credit received from treasury bills varies among brokers depending on the internal policies of each firm.) As a result of the day's activity, cash collected from the certificates is offset somewhat by declines in the value of the trading account (open equity), and the excess is remitted to the company on the following morning.

1/4

Basis Trades: Fifteen cars of wood were purchased, and the offsetting sale of fifteen July futures contracts was made. Cost of the wood is added to the purchased wood account, as before.

Hedges: Ten hedges were also placed in the September contract option.

1/5

Another ten September hedges were placed, bringing the total hedge position to thirty contracts.

1/6

More hedges were placed, this time by selling the July contract.

1/7

Same as the preceding day. Also on this day, the activity report for the previous week was completed and distributed to senior management. See page 10.

1/10

The trader purchased five May contracts that had previously been sold against five cars of cash wood (basis trade wood in storage). The trader then sold the basis trade wood into the cash market, completing the last leg of the basis trade—and making a profit of \$2,479.63.

In order to complete a basis trade, both sides of the transaction must be unwound by selling the actual wood into the cash market and by repurchasing the futures contract sold earlier. On this day, the basis narrowed, so the above transaction was set in motion.

Also, several outstanding certificates issued on 1/3 were retired. To achieve this, the trader sold five cars into the cash market and repurchased five January positions. The accounting for this transaction will occur when the January purchase actually results in a payment of cash. (See 1/13 for the remainder of the transaction.)

1/11

The trader lifted five more basis trades by purchasing five May contracts and selling five cars of basis wood into the cash market. This trade, due to the spread between cost and sales price, generated a profit of \$2,860.06.

Five more certificates were repurchased and five cars of wood sold into the cash market. Since no money was paid at this time through the futures accounts, records will reflect the transaction when cash changes occur in the account. (See 1/13 for the final accounting.)

12

1/13

The trader bought five May contracts and sold five cars of basis trade wood into the cash market. This basis trade transaction lost \$1,364.42 on the actual wood sale; this was more than offset, however, by the futures transaction, which yielded \$4,787.50. The total transaction netted \$3,423.08.

The ten certificates bought on 1/10 and 1/11 were received on this day. These certificates were purchased so that wood held in their support could be sold.

This transaction has four separate parts:

- The receivable of \$140,070.80 from selling five cars of wood on 1/10 and five on 1/11.
- The cost of \$143,815.16 for repurchasing the ten certificates.
- The cost of the actual material sold, amounting to \$139,366.66 (half of the cost of the twenty cars in storage supporting the certificates).
- The original sales price of ten certificates sold on 1/4 at \$147,291.12.

The \$140,070.80 receivable from this sale was used to pay for the certificates bought for \$143,815.16—resulting in a loss of \$3,744.36. The cost of wood shipped—\$139,366.66—is covered by the revenue of \$147,291.12 from the ten certificates originally issued, for a profit of \$7,924.46. These two parts of the transaction combine to give a profit on the full trade of \$3,950.07 as basis trade profit.

Note here that twenty company certificates were issued on 1/3. Although ten certificates were repurchased on 1/13, only five were company certificates; the other five were issued by another regular plywood shipper. Consequently, fifteen company certificates remain outstanding, ten cars of wood are in storage to support them, and the five non-company certificates are held to offset those not covered by wood in storage.

1/14

Five of the remaining fifteen company certificates were called for shipment. Wood from the stored inventory was shipped to satisfy the certificates. The original sales revenue for the five certificates was used to pay for the wood shipped, and the resulting \$3,960 profit was booked to Completed Basis Trades.

1/17

An additional block of ten basis trades was lifted by repurchasing July contracts and selling the cash wood into the market.

As in past examples, the receivable is used to pay for the cost of wood shipped. The original wood cost has been adjusted to present market levels through gains on the futures trades which were placed to offset the risk inherent in owning the commodity. The excess of revenue over the adjusted wood cost provides a profit of \$8,664, which is booked to Completed Basis Trades.

1/19

The trader bought five July contracts against five sold earlier, developing a hedge profit of \$4,027.50. With a general market decline, prices have fallen enough to warrant retracting hedges placed earlier. This is done with the five July hedges sold on 12/17. Profits of \$11/MSF are captured through the repurchase; the net profit is booked to the Hedging Gain column.

Certificates: Five company certificates were called. The requirement to ship wood was passed to the five non-company certificates received on 1/13. No accounting takes place since all transactions were recorded when the non-company certificates were received.

1/20

The trader lifted 10 July hedges, developing a net gain of \$9,385.00 which was booked to the hedging gain column. This activity plus the equity change left a balance to be sent to the broker of \$2,097.00. Because of the previous day's theoretical imbalance with the actual cash received, we sent the broker \$2,249.50. As a result of the transactions, which occurred on January 19 and the favorable change in market prices that day, we calculate that the broker should have sent \$15,854.50. We actually received \$16,007.00 or \$152.50 more than was expected. Upon checking, it was found that the broker had not yet applied the five purchases made on January 19 to existing shorts, and as a result, no commissions had been charged on

the five trades. The \$152.50 excess cash, resulting from five commissions at \$30.50 each, is carried in the "Cumulative Balance Due" column on the broker cash balance sheet. On January 20 these trades were offset in the broker's records, along with other trades for that day. Cash actually paid to the broker on January 21 was \$152.50 more than was calculated, thereby picking up the extra five commission charges and clearing the cumulative balance due.

1/21

The trader lifted ten more hedges (five July and five September), developing a hedging profit of \$9,005. With the change in equity on the remaining forty contracts plus today's activity, the broker owes \$8,437.

1/28

The trader again lifted ten hedges, developing an additional profit of \$8,435. The Treasury Bill matures and is redeemed, having accrued \$106.70 in interest. Due to equity changes and the results of activity, the broker sends \$16,315.

2/2

The trader lifts the last fifteen hedges, developing a profit of \$9,802.50. This plus equity change resulted in the broker's sending another \$2,198.50.

The futures control sheet is now totalled by column, and the accounts are closed into the proper profit and loss or balance sheet accounts. Recognized income and expense items are zeroed out of the futures control account and closed to their proper profit and loss accounts.

After all the transactions described have been completed, five basis trades and five certificates remain in effect or outstanding. These ten transactions are each supported by stored wood. The short sales against the basis trade wood show up on the Account Status Report, and the outstanding certificates are carried on the futures control sheet along with the wood in storage. All other transactions are complete, and the relevant accounts can be zeroed out.

SECTION 3

GLOSSARY

GLOSSARY

Basis: The difference between the current cash price for a product and the price for the same product in the nearest month of the futures market.

Basis Trade: In a basis trade, current production or inventory is sold into the futures market at a more favorable price than is possible in the existing cash market. The trade consists of two parts: Wood is bought and placed in storage, and an offsetting sale is made into the futures market.

Basis Trade Wood in Storage: Wood bought to offset futures short positions. Wood is stored at company facilities or public warehouses.

Broker: A firm through which trades are placed and which carries the company's open positions on its books. Each day, funds are transferred to or from the broker, reflecting the previous day's gain or loss.

Broker Cash Transaction Report: Prepared by the trader, each day's cash transactions and P&L items are tracked on this report. The cash balance at day's end equals the previous day's balance plus the day's theoretical cash transfer, profits, losses, commissions, and other charges or funds transferred to the account. The cash balance shown on this report differs from that shown on the broker's statement by the amount in the Cumulative Balance Due column.

Cash Balance: The running total of cash on deposit with the broker. Because excess funds are collected daily, the cash balance should equal and offset the previous day's unrecognized gains or losses in the trading account. This is the balancing account with the broker and ties back to the company's Futures Control Sheet (exhibit 1) cash balance and to the Broker's Statement (exhibit 4).

Cash to Account—Actual: The dollar amount of cash sent to (debit) or received from (credit) the broker. It comes from the Broker Cash Transaction Report.

Cash Received: Funds received from all sources.

Cash Sent: Funds used for futures activities.

Certificate: A document which commits the issuer to ship a specified quantity of a commodity at the certificate owner's request.

Contract: A sale or purchase is a contract to deliver or receive a specified commodity, as agreed when the trade was executed. Since the items traded are rights or obligations, rather than physical entities, they are referred to as contracts.

Convergence: The coming together of futures prices and cash market prices for a commodity. Convergence shows as a narrowing of the basis.

Daily and Cumulative Balance Due: From the Broker Cash Balance Report, the account carries any daily difference between funds requested by the broker and calculated as being due by the trader. Broker's and trader's records may differ in the timing of a trade's completion or there may be errors in one of the calculated transfer amounts.

Futures Control Sheet: This is the basic accounting/control document used in accounting for the futures activity. It is set up to account for all activities performed by the trader. The control sheet can be organized with as many columns as necessary to properly reflect the particular trading activity the trader is performing. The control sheet is tied back into the broker's statement through the use of the cash balance column. Only that which affects the broker's account affects the cash balance column.

Hedge: The sale of future production into the futures market, generally at prices higher than what the seller has forecast for the cash market during that period.

Long: The purchase of a futures contract. To complete the trade, the buyer must either

- (a) Resell the contract before it expires; or
- (b) Pay in full and accept delivery of the item in the quantity and at the price and time set when the purchase was made.

Open Equity: The total gain or loss in a futures trading account.

Open Position: The total of all positions not covered either by offsetting contracts or by wood in storage.

Plywood Account Status Report: This daily report lists all positions currently open, the price at which a trade was placed, the broker's name, and the type of trade. Additionally, it calculates the gain or loss for each position based on the most recent settlement price and summarizes the account's total gain or loss. The report is prepared daily by posting the day's transactions and settlement prices and is used to calculate the funds to be transferred to or from the broker on the following day.

Plywood Certificate Wood: Wood which is stored and has been paid for, specifically designated as support for certificates issued and included in the account supported certificates.

Plywood Futures Daily Report: This report is the trader's primary record of all items which change the cash balance in the brokerage ac-

count. The report shows each trade as it is completed, computes the resulting gain and loss, and describes the intended accounting treatment. Additionally, it shows non-P&L cash deposits, such as freight receipts and payments and other cash items flowing through the account.

Settlement Price: The price of the last transaction each day in each futures contract month. The settlement price is used to calculate the open equity in a trading account.

Short: The sale of a futures contract. To complete the transaction, the seller must either

- (a) Repurchase an offsetting contract at some future time, before expiration of the contract; or
- (b) Deliver the specified quantity at the price and time set when the position was first taken.

Treasury Bills: Cash deposits to cover initial margins in an account can be provided by the purchase and deposit of Treasury Bills. In this way, interest is earned on funds which are tied up and which otherwise would be incurring interest expense.

Theoretical Transfer: The amount that the trader calculates that the broker is owed. This may differ from the Cash to Account—Actual because of differences in timing of offsetting trades, and in correcting earlier discrepancies between the two accounts.

Trader: The person charged with the responsibility for making trading decisions and for managing all aspects of the activity.

Monographs published to date:

“The Rush to LIFO: Is it Always Good for Wood Products Firms?” issued in December 1974 and published in condensed form in the April 1975 issue of *Forest Industries*.

(This monograph was revised and reissued in January 1976.)

“Accounting and Financial Management in the Forest Products Industries: A Guide to the Published Literature,” issued in June 1975.

(A supplement to this monograph was issued in March 1977.)

“A Decision Framework for Trading Lumber Futures,” issued in October 1975.

“Capital Gains Tax Treatment in the Forest Products Industries,” issued June 1976.

“Measurement Difficulties in the Log Conversion Process,” issued June 1977.

“Capital Budgeting Practices in the Forest Products Industry,” issued March 1978.

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