Accounting for Purchase Commitments: Some Issues and Recommendations

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Many businesses enter into contracts, often noncancelable, to purchase goods at fixed prices in order to ensure a continued supply of the goods or as a hedge against price increases. During the period that such contracts are outstanding, fluctuations in the prices of the underlying goods can have significant effects on the financial statements. The accounting literature provides no single comprehensive discussion of the issues involved in accounting for purchase commitments. This has led companies to adopt widely varying practices. Thus, there is a need to develop a unified framework that provides a consistent treatment to account for purchase commitments. This paper discusses various theoretical and practical issues relating to purchase commitments and recommends a unifying framework to guide accounting and disclosure practices.

SIGNIFICANCE OF THE ISSUE

Existence of substantial amounts of purchase commitments is evident from the footnotes to the financial statements of many companies. However, no aspect of these commitments is recorded in the books until a loss due to the decline in their market value occurs. A review of the financial statements indicates that many of the reported losses on purchase commitments have had a substantial impact on companies' net incomes.[1] For example, consider a footnote to the 1983 financial statements of Quanex Corporation that states: "Additionally, an accrual of $13,443,000 has been made to reflect the estimated economic loss on noncancelable purchase commitments for raw materials, principally related to oil field tubular goods." The loss was 19.9 percent of the company's loss before income taxes for the year. In 1981, J. P. Stevens reported an increase in the net loss of $4,400,000 ($.31 per share) to provide for losses on certain purchase commitments. This too was a substantial amount considering that the loss per share for that year was $1.59 for Stevens. Sterling Pipe and Supply Company's 1982 loss per share of $4.36 would have been smaller by $.17 but for the losses the company recognized for reduction in the market value of purchase commitments.

While the amounts involved are significant, our review of the professional literature, and interviews with senior accounting personnel of several companies, indicates that the accounting treatment and the disclosures relating to purchase commitments vary widely in terms of comprehensiveness and clarity. For example, the after-tax effect of purchase commitments on the net income and earnings per share cannot be determined in Quanex's case whereas insufficient information is available to estimate the amount of before-tax loss in J. P. Stevens' case. There are instances where neither the gross loss nor the net loss on purchase commitments is reported in the financial statements. McQuay Perfex's 1982

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[1] The number of instances of purchase commitments disclosure is, however, low. For example, the NAARS search conducted by the authors revealed only 58 instances of disclosure of purchase commitments/obligations and/or losses on them during 1980-84.

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report, for example, included a note: "deferred income taxes comprised of, among other things, write down of purchase commitments to market ($141,000)." Borg Warner and Coleco included the loss on purchase commitments in 1978 with other items and hence the impact of purchase commitments as such cannot be easily ascertained from the financial statements.

The above discussion demonstrates that while accounting for purchase commitments may not be a very widespread problem, it is a problem that can have a significant effect on a company's bottom line and has largely been neglected by accounting policy makers. In this paper, we attempt to illuminate the issues involved, and recommend solutions to problems in accounting for purchase commitments.[2]

CURRENT LITERATURE AND ACCOUNTING PRACTICES

Three dates are important in accounting for purchase commitments: (1) the date on which the contract for purchase commitment is entered into (date of inception), (2) any year-end date that falls between the date of inception and the date of actual purchase, and (3) the date on which actual purchases are made. At the date of inception, no asset or liability is recognized since the contract is "executory" in nature; neither party has fulfilled its part of the contract.

The treatment at the end of the accounting period depends on whether the contracts are cancelable or noncancelable. For cancelable contracts, gains or losses are not recognized since they can be canceled at the option of the purchaser. Footnote disclosure is, however, appropriate if the possible gain or loss on the contract is material in amount. For noncancelable contracts, the accounting treatment at the year-end will depend on whether the year-end price is higher or lower than the contracted price. If it is higher, the unrealized gain is not recognized although the amount of the gain may be disclosed in a footnote.

The Year-End Loss: Its Recognition and Presentation

If the year-end market price is lower than the contracted price, the commitment results in a possible loss. The recognition of this loss will involve debiting an account such as Loss on Valuation of Purchase Commitments and crediting another account such as Accrued Loss on Purchase Commitments. The debit to a loss recognizes a decline in the utility of purchase commitments in the period of decline rather than deferring it until the period of sale. Accounting Research Bulletin No. 43 (AICPA, 1953, Chapter 4, Paragraph 17) is quite clear on this issue: "The net loss on such commitments should be measured in the same way as inventory losses and, if material, should be recognized in the [*financial statements*]."[3] Thus, recognition of loss on purchase commitments achieves the same result as does application of the "lower of the cost or market" rule to inventory items. ARB 43 also stipulates that the loss should be presented separately in the income statement. Thus, it cannot be put under the umbrella of other items like purchases or the cost of goods sold. However, many companies with such a loss have combined it with some other item in the income statement. The FASB Concepts Statement No. 6 (paragraphs 251-253) discusses purchase commitment losses, but essentially condones current practice.

The Credit Side Implication of Booking a Loss: A Controversial Issue

The nature of the corresponding credit created by booking a loss on purchase commitments is controversial. The current literature seems to suggest recognizing it as a current liability. However, no liability has been created because the loss, by itself, is not an obligation to pay cash or otherwise sacrifice assets in the future. As noted by the FASB Statements of Financial Accounting Concepts

[2] Unconditional purchase obligations associated with suppliers' financing arrangements covered by FASB Statement No. 47 are different from simple purchase commitments and are not discussed in this paper.

[3] ARB 43 states that the utility of purchase commitments is not impaired if the amounts to be realized from the disposition of the future inventory items are adequately protected by firm sales contracts or if there are other circumstances that reasonably assure continuing sales without price decline. This is also likely to happen in the case of intermediate products if the final product sells for a price that covers purchase commitment loss, if any, or in the case of "cost-plus" types of contracts. Thus, the recognition of losses on purchase commitments should be constrained by existing situations that affect their utility (i.e., the so called "ceiling" and "floor" price constraints under the LCM rule for inventories).

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No. 6 (FASB, 1985, Paragraph 252): "A decrease in the price that leaves the committed buyer in the position of now being able to buy the assets cheaper were it not committed to buy them at the former, higher price does not by itself create an obligation that was not already present." The predicament results because the estimated loss on purchase commitments is the recorded part of a series of transactions and events that are mostly unrecorded (FASB Statement of Concepts No. 6, 1985, Paragraph 251). In other words, under current practice, there is no asset against which the loss may be credited. Thus, the reason behind the current practice of treating such a credit as a liability is the lack of an acceptable alternative rather than a theoretical justification to recognize it as a liability.

Recording Purchases:
How to Account for Further Price Changes

A largely ignored aspect of purchase commitments is accounting for them at the time of the actual purchase of goods. Since it is possible that the market price of the contracted goods will vary, one has to decide how to deal with the change in the market price from the year-end date to the date of purchase. Since there is no explicit GAAP for the accounting treatment of purchase commitments at the time title to goods passes to the buyer, one needs to consider the hierarchy of alternative sources of GAAP (such as the AICPA audit guides, industry accounting guides, statements of position, issue papers, FASB technical bulletins, APB statements, industry practices, textbooks and articles) as suggested by Rubin.[4] It was surprising to find that textbooks constitute the predominant source of explicit guidance available to account for purchase commitments at the time of purchase.

The literature indicates two possible treatments to record purchases. Treatment 1 ignores the change in market price from the year-end date to the purchase date. The entry under this treatment debits the provision for loss on purchase commitments (a current liability) created at the previous year-end, credits the amount payable to the supplier, and debits purchases for the balance. Treatment 2 records purchases at the fair market value (not exceeding the contracted price) of the goods on the date of acquisition. Thus, it recognizes any recovery or further decline of market price from the year-end date to the date of purchase. The two treatments will lead to identical net income but the timing of recognition of any loss on the commitment will be different. The cost of goods sold, and the gross profits, would also be different under the two methods, as will be demonstrated later.[5] The journal entry under Treatment 2 would thus show an additional loss, if the price has declined further, and a gain, if it has recovered since the year-end.[6]

The present literature and practices indicate a lack of consensus on the appropriate accounting for purchase commitments at different dates in their life cycle. While the long-term effect on retained earnings will be the same under the two accounting treatments described, periodic income will be different. Moreover, important components of income (e.g., cost of goods sold) can be materially different between the two methods as can the balance sheet presentation. What is needed is a unifying framework that will provide consistent and reliable treatment of purchase commitments.

RECOMMENDED FRAMEWORK TO ACCOUNT FOR PURCHASE COMMITMENTS

Recording Commitments at Inception:
The First Important Step

We feel that formal recording of the noncancelable purchase commitments on the date of inception will significantly alleviate the problems of subsequent accounting for purchase commitments. Many authors (for example, Ijiri,[7] Shillinglaw[8]) have argued that such commitments be recorded in the books since

[4] Steven Rubin, "The House of GAAP," *Journal of Accountancy* (June 1984), pp. 122-29.

[5] Increase in market price above the contracted price would, however, not be recorded. This is in line with the LCM rule for inventories.

[6] Some authors recommend recognition of additional loss if the price has declined further after the year-end date but not gain if the price has recovered. See, for example, L. G. Chasteen, R. E. Flaherty, and M. C. O'Connor, *Intermediate Accounting*, Random House, Inc., 1987.

[7] Yuji Ijiri, *Recognition of Contractual Rights and Obligations*, FASB, Stamford, December 1980, 92 pp.

[8] Gordon Shillinglaw, "More on Doubtful Areas of Lease Capitalization," *NAA Bulletin* (November 1962), pp. 9-13.

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they involve a right to receive goods and an obligation to pay for them. The rights and obligations under a noncancelable purchase commitment are similar to those under a capital lease, except for the change in the physical possession of the asset. However, the lease commitment is required to be recorded under the present accounting principles (SFAS 13, FASB) but the purchase commitment is not. Another useful analogy is the accounting for forward exchange contracts (SFAS 52, FASB). Similar to purchase commitments, which is a firm contract to exchange a commodity for cash at a specified future date at a specified price, a forward exchange commitment is an agreement to exchange different currencies at a specified future date at a specified rate. Yet, the forward exchange contract is recorded on the date of inception whereas a purchase commitment contract is not. The reliable indication of market value, which is more readily available for forward exchange commitments than for purchase commitments, is not, in our opinion, a difference significant enough to justify different treatment.

Recording purchase commitments at the date of inception can also be justified on the grounds of utility to the readers of financial statements. If the purchase commitments are recorded at their inception, the related asset and liability accounts in the balance sheet will call the attention of financial statement readers to such commitments. This will significantly improve present practice where many material commitments go undetected until losses on them appear in the main body of financial statements long after the commitment was made.

Thus, on the grounds of decision usefulness and precedent in GAAP, an asset (such as Receivable on Noncancelable Purchase Commitment) and a liability (such as Obligation on Noncancelable Purchase Commitment) should be recorded at the date of inception. In addition, a related footnote should disclose the nature of the commitment, the time period involved, the contracted price and quantity, and the price at the end of the accounting period.

Gains and Losses at Year-End: Treat As Contingencies Under SFAS 5

We recommend that any gains and losses on purchase commitments at the year-end should be viewed as contingencies under Statements of Financial Accounting Standards No. 5 (SFAS 5) of the FASB. The gain on purchase commitments should not be booked since it would involve recognizing revenue before realization.[9] A footnote disclosure of the gain, however, would be appropriate since it would convey a message about the prudence of the purchase management of the company.

A loss on purchase commitments would have to be screened through the tests of estimability and probability under SFAS 5. The amount of loss would be considered reasonably estimable since the loss would be the difference between the contract price and the price at the year-end. The accountant would then assess whether the loss is "probable, reasonably possible, or remote." If the loss is "probable," it should be accrued by debiting the loss and crediting a contra account associated with the receivable recorded at the inception of the purchase commitment. However, if the loss is only "reasonably possible," a footnote disclosure would be sufficient and required. The footnote should also include an explicit assertion by the management that it considers the reduction in the market price of underlying goods purely temporary. If the probability of loss is remote, it is ignored.

If the loss is booked and is material, it should be shown separately on the income statement and its impact on taxes and on earnings per share should also be disclosed in a footnote. On the balance sheet, the credit arising from booking the loss would be netted against the asset, Receivable on Noncancelable Purchase Commitment. Thus, the recording of an asset at the inception of the purchase commitment contract makes the balance sheet presentation more meaningful and consistent. It resolves the dilemma of accountants not wanting to present the accrued loss as a liability since it is not an obligation by itself, and of not being able to subtract it from an asset that has not been recorded.

[9] Drawing analogy with forward exchange contracts, a case could be made to book both the gains and losses on purchase commitments. However, this would represent a drastic departure from current accounting for inventories. Hence, we do not recommend recognizing gain, if any, at the end of the year.

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Date of Purchase: Recognize Change in Prices Since Year-End

To address the accounting issues at completion of the transaction, we evaluate the two alternative treatments presented earlier. Recall that Treatment 1 ignores any change in market price from the prior year-end to the date of purchase, whereas Treatment 2 records purchases at fair market value (not exceeding contracted price) on the date of purchase. There are two significant differences between them. First, the increase or decrease in price is recognized as gain or loss in the current period under Treatment 2 whereas recognition of this gain or loss is postponed until the period in which the goods are sold under Treatment 1. The total effect on net income would be the same but the timing of its recognition would be different under the two treatments. Second, assuming the sale price is exogenously determined, the recorded cost of purchases under the two treatments will cause the gross margin percentage to be distorted under Treatment 1 but not under Treatment 2.

To illustrate the differences between the two treatments, consider the journal entries in Table 1. In this illustration, a company has contracted to purchase 1,000 units of inventory at $10 per unit. At the end of the accounting period, but prior to the actual purchase, the market price has declined to $8 per unit. The journal entries at the commitment date and at the year-end are identical under the two treatments. The journal entries on the date of purchase would, however, be different under the two treatments.[10]

Timing of Recognition of Gains/Losses

Since the market price may be higher or lower than the price at the year-end, we considered the case where the market price has further declined to $7 a unit and where the market price has recovered to $9 a unit. In these cases, the two treatments may recognize gains and losses in different periods. Treatment 1 ignores the change in the market price since the year-end and records purchases at $8,000 regardless of whether the market value is $7,000 or $9,000 on the date of purchase.[11] In other words, the gain or loss resulting from the change in market price since the year-end is not recognized on the date of purchase. Its recognition is postponed until the period in which the goods are sold.

In contrast, Treatment 2 recognizes the change in the market price since year-end on the date of purchase. Thus it records purchases at $7,000 (and a loss of $1,000) if the price has declined to $7 per unit, and it records purchases of $9,000 (and a gain of $1,000) if the price has increased to $9 per unit. This treatment results in the recognition of gains and losses in the period in which the change in utility occurs.

Effect on Gross Margin Percentage

The effect of Treatments 1 and 2 on gross margin percentages is also important. If, as discussed before, it is assumed that the company's selling price is based upon the economic utility of the cost of its purchases, then Treatment 1 will distort the company's gross margin percentage. This is illustrated in Table 2, where it is assumed that the company determines its selling price based upon a 50 percent markup on cost (i.e., in terms of the economic value of its purchases).[12] Thus, if the market price of its purchases dropped to $7 per unit, then the selling price will be $10.50 (150 percent × 7) per unit and if the market price is $9 per unit the selling price will be $13.50 per unit. Table 2 shows that Treatment 1 results in a different gross margin percentage under different market prices of goods. However, application of Treatment 2 results in a consistent 33 percent gross margin percentage

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[10] We have assumed that the purchase commitments are recorded at inception, as suggested earlier in the paper. It is not currently a Generally Accepted Accounting Principle.

[11] If the market price recovers to a level above the originally contracted price (for instance, to $13 a unit), gain would be recognized only for the difference between the year-end price and the contracted price (i.e., $2 a unit). In other words, the excess of market price over the contracted price ($3 a unit) would not be recognized at the time of purchases. This is in line with the LCM rule for inventories.

[12] If the pricing formula is based solely on the recorded cost of purchases, the gross margin percentage will be the same under the two treatments but the sale prices would differ. Under Treatment 1, the sale prices are going to be out of line with the market prices of the products. This is because the recorded cost of purchases has no relation to the market value of the underlying goods. These sale prices are unlikely to hold in an efficient market. That is the reason we prefer Treatment 2 which records purchases at their fair market value (not exceeding the contracted price) on the date of acquisition.

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TABLE 1

JOURNAL ENTRIES UNDER TREATMENTS 1 AND 2*

	Treatment 1			Treatment 2		
Date of Commitment**						
(1,000 tons at $10/unit)	Rec. on Pur. Comm.	10,000		Rec. on Pur. Comm.	10,000	
	Oblig. on Pur. Comm.		10,000	Oblig. on Pur. Comm.		10,000
Accounting Period End						
(Market Price = $8/unit)	Loss on Pur. Comm.	2,000		Loss on Pur. Comm.	2,000	
	Accrued Loss (Contra Asset)		2,000	Accrued Loss (Contra Asset)		2,000
Date of Purchase***						
IF Market Price is $7/unit	Purchases	8,000		Purchases	7,000	
	Accrued Loss	2,000		Accrued Loss	2,000	
	Accounts Payable		10,000	Loss	1,000	
				Accounts Payable		10,000
IF Market Price is $9/unit	Purchases	8,000		Purchases	9,000	
	Accrued Loss	2,000		Accrued Loss	1,000	
	Accounts Payable		10,000	Accounts Payable		10,000
				Accrued Loss	1,000	
				Gain		1,000
Date of Sale **To Recognize Cost of Goods Sold**						
IF Market Price on Purchase date was $7/unit	Cost of Goods Sold	8,000		Cost of Goods Sold	7,000	
	Inventory		8,000	Inventory		7,000
IF Market Price on Purchase date was $9/unit	Cost of Goods Sold	8,000		Cost of Goods Sold	9,000	
	Inventory		8,000	Inventory		9,000

*Note Treatment 1 ignores changes in the market price between the year-end and purchase date while Treatment 2 recognizes such changes.

**Recording of purchase commitment on the date of inception is consistent with our recommendation. It is not, however, a GAAP currently.

***On the date of purchase, the balances created by journal entry on the date of commitment will be eliminated under both treatments. We have not shown this eliminating entry.

regardless of the change in the market price of the goods.

Consistency with Related Professional Pronouncements

Treatment 2 is also consistent with APB Opinion No. 20 (APB, 1971) which deals with accounting changes. The change in the market price causes a change in the estimate of the contingent loss made at the year-end. If such a change occurs, it should be accounted for in the period of change. The amount of loss has become certain on the acquisition date and hence its impact should be disclosed in the year

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TABLE 2

EFFECT OF TREATMENTS 1 AND 2* ON GROSS MARGIN PERCENTAGE

	Treatment 1		**Treatment 2**	
	Market Price of purchases $7.00 Selling Price (1.5 × 7) = $10.50	Market Price of purchases $9.00 Selling Price (1.5 × 9) = $13.50	Market Price of purchases $7.00 Selling Price (1.5 × 7) = $10.50	Market Price of purchases $9.00 Selling Price (1.5 × 9) = $13.50
Sales 100 units	10,500	13,500	10,500	13,500
COGS 100 units	8,000	8,000	7,000	9,000
Gross Margin	2,500	5,500	3,500	4,500
Gross Margin Percentage	24%	41%	33%	33%

*Note Treatment 1 ignores changes in market price between year-end and purchase date while Treatment 2 recognizes such changes.

of acquisition only. The disclosure under Treatment 2 is consistent with ARB 43 also. If the loss were disclosed separately in the income statement at the year-end, there is no reason why an increase or decrease in it should also not be disclosed in the same fashion. Treatment 2 alone achieves this result. On the date of purchase, we therefore support Treatment 2 which is theoretically correct and is consistent with related professional literature.

Summary of Recommended Changes

Our framework to account for purchase commitments would suggest the following three changes to current accounting practice:

1. On the date of inception, purchase commitments, if noncancelable, should be recorded in the accounts. This is important for two reasons: (i) it draws the attention of financial statement readers to the existence of such commitments through recording of related asset and liability, and (ii) at year-end, the balance sheet presentation of any accrued loss at the year-end is more logical and consistent with the conceptual framework since it can be shown as a contra asset.
2. At the year-end, the gains and losses resulting from price changes should be treated as contingencies under FASB 5. Regardless of direction of change in the market price of the underlying goods, a footnote disclosure should be required to state the nature of the commitment, the time period involved, the contracted price and quantity, and the price at the end of the accounting period.
3. On the date of acquisition, purchases should be recorded at fair market value unless it is higher than cost. This approach should be followed since it recognizes change in the utility of purchase commitments from the year-end to the purchase date.

OTHER RELATED ACCOUNTING ISSUES

Interperiod Tax Allocation

The loss on purchase commitments at the year-end is recognized as a loss for financial reporting purposes only. For tax purposes, the loss gets recognized when realized, i.e., when the goods are sold. This timing difference calls for a provision for deferred income taxes at the end of the year. A footnote relating to deferred

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taxes in McQuay Perfex's 1982 annual report (referred to on page 75) illustrates the adjustments to deferred income taxes caused by losses on purchase commitments.

Sales Commitments

The discussion thus far in the paper has pertained only to purchase commitments. However, all the issues raised, and our recommended framework, are equally relevant to accounting for sales commitments. The only additional consideration would be the amount of loss to be provided at the year-end. For the seller, it is not the change in the market price of the contracted goods that calls for year-end provision for loss. It is the price of the inputs needed to fulfill the sales commitments. If market prices have gone up above the contracted price and the loss on sales commitments becomes imminent, the seller has to provide for that loss. Dramatic examples of the losses on sales commitments involve Westinghouse Electric Company and Texaco. Westinghouse had fixed-price uranium-supply contracts with electric utilities as part of its effort to sell nuclear-reactor equipment. It claimed an excuse from filling the contracts because of a sharp rise in uranium prices (from about $6 per pound in the late 1960s to $41 per pound in 1977) which Westinghouse alleged was caused by a producer cartel. It lost the case in courts and as a result accrued more than $721 million in losses by the end of 1979 on the supply commitments for uranium and estimated that unsettled litigation would result in another $228 million in losses (Eaker and Ferris[13]). Texaco agreed to pay as much as $1.7 billion in cash and fuel guarantee to Louisiana Power and Light Company to break supply contracts that required Texaco to sell natural gas at extremely low, fixed prices (*The Wall Street Journal,* June 7, 1982). If our framework had been applied to these sales commitments, more informative and timely disclosures would have been available to the financial statement users.

Multiple Purchase Commitments

If a company has multiple purchase commitments outstanding at the year-end, should it determine the loss on them individually or should it net out the gains and losses on the purchase commitments of all the items? No guidance is available on this issue from present accounting literature. Logic dictates that the answer will depend on whether the company applies the lower of cost or market rule for inventory on the individual items basis or on the aggregate basis. It is also important to consider the purpose of any hedging. If it is to protect the firm as a whole, the gains and losses should be offset against each other. Whether hedging or not, detailed disclosure of purchase commitments should be provided so that users will be aware of the effectiveness of purchase decisions of managers.

CONCLUSION

The present accounting literature lacks a unified framework for dealing with purchase commitments. As a result, practice tends to be ad hoc and variable. In this paper, we have provided a single framework that addresses the major issues involved in accounting and disclosure of purchase commitments. Recording an asset and liability on the date of inception for the noncancelable purchase commitments is suggested as the first significant step towards alleviating the accounting problems associated with the issue. At year-end, the potential gains and losses should be treated as contingencies under SFAS 5 which provides a coherent structure for the accounting and informative disclosure of such gains and losses. Finally, purchases should be recorded at their fair market value not to exceed the contract price on the date of purchase. Following this framework would result in greater consistency in the treatment of purchase commitments across companies and more useful information for users of financial statements.

[13] Mark R. Eaker and Kenneth R. Ferris, "Long-Term Supply Agreements: A New Albatross?" *Financial Analysts Journal* (November-December 1982), pp. 70-73.

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