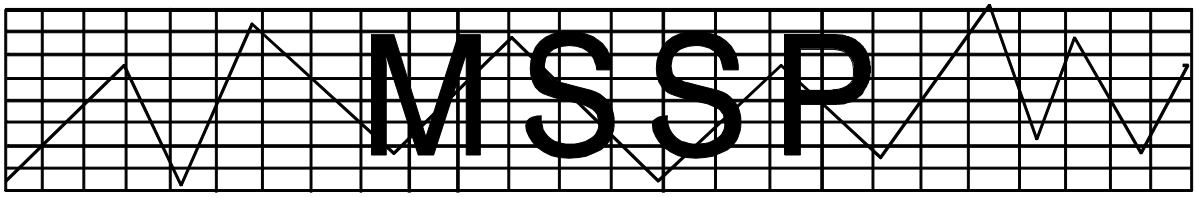

Market Segment Specialization Program

Computers, Electronics, and High Tech Industry

The taxpayer names and addresses shown in this publication are hypothetical. They were chosen at random from a list of names of American colleges and universities as shown inWebster's Dictionary or from a list of names of counties in the United States as listed in the United States Government Printing Office Style Manual.

This material was designed specifically for training purposes only. Under no circumstances should the contents be used or cited as authority for setting or sustaining a technical position.

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Internal Revenue Service

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Computers, Electronics, and High Tech Industry

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Chapter 1

INVENTORY AND COST OF SALES

INTRODUCTION

This chapter presents a discussion of inventory and cost of sales considerations encountered in the study of high tech electronics companies. We opted to emphasize audit techniques in this section, rather than detailed issue discussion, as a cost of sales audit may sometimes seem overwhelming to some examiners.

Presentation of the material is divided into five sections:

- General Background Information
- Audit Techniques
- Cost Analysis
- Standard Cost Variance Treatment
- Inventory Reserve Discussion.

The appendix material provides helpful audit tools for examination of this area and utilization of the material is encouraged.

GENERAL BACKGROUND

Cost of Sales (COS) Characteristics

The following presents typical characteristics one should expect when examining a company in the high tech electronics field. These inventory characteristics are typical of most manufacturers, however, you will discover obvious inter)relationships between manufacturing costs (COS), and product development costs (R&D) when making a determination on the clear reflection of Cost of Sales:

1. Type of activity))Manufacturing (v. Retail or Service oriented).

2. Applicability))Inventories are required. Both IRC sections 471 and 263A apply.

3. Valuation))Lower of Cost or Market. It was noted that many smaller companies utilize the Gross Profit Method for determining inventory values. This is an unacceptable method for both financial and tax purposes, as it is based on estimation.

4. Cost Flow Assumption))FIFO.

5. Many of the large companies use standard price costing and perpetual inventory cost accounting systems. This may confuse some examiners. The key here is to audit the valuation and treatment of variances (standard to actual).

6. Inventory Turnover Rate))Typically four times per year. Chip manufacturers are usually less, two to three times per year depending on the complexity of the circuitry integrated to silicon chip form, as each mask layer of circuitry fabricated, extends manufacturing time.

7. Gross Profit Margins))Vary depending on the type of manufacturing process.

8. Operating cycle is usually less than one year))Placement of order to collection of receivable.

9. Customer Base))In smaller companies, there is a higher prevalence of custom work or a reliance on one or two major customers. Larger companies generally have wide product mix and are controlled directly by the marketplace.

10. Research and development activity is prevalent within all areas of the industry. It is suggested that both COS and R&D be examined concurrently as they involve association of the same costs to each distinct function.

Case with Ideal Audit Potential

All cost of sales examinations should begin with identification and reconciliation of Schedule M)1 cost of sales and inventory accounts to the corresponding general ledger or trial balance. This analysis may reveal the major inventory accounts you may wish to examine further and clue you to possible issues related to nonstandard journal entries or reserve accounts.

At this point, care must be taken in deciding to proceed with an in)depth audit plan for cost of sales, as even a significant adjustment to ending inventory produces subsequent year inventory debits. A compliance decision must, therefore, be considered with focus on materiality. This study revealed specific non)compliant areas which indicate audit potential.

1. No physical inventory counts taken. (IRC section 471)

2. Failure to inventory Overhead Cost, Direct Labor, or Both.

3. Failure to implement IRC section 263A (file F3115). If the taxpayer properly elected the change, an IRC section 481(a) adjustment should be present on Schedule M)1 through 1991 taxable years.

4. Utilization of the Gross Profit Method for inventory valuation. This method is specifically not allowed. See change in Accounting Methods, IRC section 481(a).

5. OR, utilization of the Cash Basis method of accounting.

NOTE: If Comparative Gross Profit percentages are inconsistent. The dollar amount of Direct Materials Costs in Finished Goods (FG) and Work-in-Process (WIP) is high in relation to Total Inventory (greater than 30 percent), AND Inventory Turnover Rate is low, you have a case with very good tax adjustment potential.

Taxpayer does not have the option to select the cash method. If inventories are an income producing factor, Treas. Reg. section 1.446-1(c)(2)(i) requires the use of the accrual method to account for sales and purchases. The fact that year end inventory values are immaterial does not constitute an exception to the regulation. The significant factor is the materiality of purchases to reported revenues.

A cash basis taxpayer who has inventory, but does not recognize inventory, faces two potential audit adjustments. An adjustment requiring the recognition of inventories would be proposed under the authority of IRC section 471. The other adjustment mandating the use of the accrual method would be supported by IRC section 446.

Unique Industry Characteristics

- Most electronic application devices (that is, a computer keyboard, a printer, or a disk drive) are packaged in a kit in batch lots and sent out for assembly or are assembled in-house. Typically, an application hardware device requires customized software as part of the total product package.

- Circuit Board Shops may or may not have their own in-house engineering staff, depending on whether focus is on custom v. standard product.

- Integrated Circuit Foundries (chip manufacturers) focus primarily on custom work; however, the larger operations tend toward standard chip production (standard products).

- Software development companies exclusively involved in program development will experience high labor intensive costs.

- Telephone support engineers' salaries and related Overhead (O/H) are a post-sale cost, and do not fall under IRC sections 471 or 263A.

- In semiconductor manufacturing, the cost of "pellicularized" masks should be capitalized and depreciated over the estimated chip marketing life. Depreciation is charged to Cost of Sales and included in the overhead burden.

Inventory Issues Found in the Electronics Industry

- Inventory of Engineering costs (except for engineering costs related to Research and Development)(R&D))- Taxpayers may attempt to over allocate these costs to R&D primarily to take advantage of research credit benefits, and secondarily to avoid capitalization under IRC section 263A. Usually if engineering costs are determined to be NOT for research, then they are automatically classified as production costs.

- Officer's Salary allocation (Engineering, Purchasing, and a percentage of the General and Administrative (G&A) functions are related production costs). Significant in small companies where officers' duties are multi)functional, taxpayers fail to recognize the mixed service cost portions for IRC section 263A purposes.

- Treatment of Catalog versus Technical Manual costs may be charged to Advertising, Promotion, and Printing to avoid production identification.

AUDIT TECHNIQUES

Initial Examination Procedures

Audit emphasis should be placed on certain pre)substantive audit procedures which shall determine the depth and scope of the examination of production costs. The examination of Cost of Sales is time consuming, detailed, and many times complex, if several steps are involved in the manufacturing process. Care should be taken early in the examination when the determination is made to pursue an Inventory or Cost of Sales issue.

A solution to the audit cost/benefit dilemma is the formulation and implementation of standard preliminary audit procedures that address Cost of Sales. The examiner should always keep in mind that Materiality, Consistency, and Timing (in that order) are primary considerations in deciding whether to pursue an issue.

Comparative Years Analysis

Cost of Sales should ALWAYS be analyzed on comparative years basis due to the effects of timing on any potential adjustments.

1. Form 1120 Schedule A))Prepare a work paper comparing Cost of Sales detail for at least three consecutive years and note the following:

a. Changes in dollar amounts from year to year

b. Direction of dollar amount changes

c. Types of costs listed. Are accounts consistent from year to year?

Are there any unusual types of accounts? Are the appropriate types of costs listed? The absence of a typical account category may be an indicator that audit expansion is warranted (that is, no "Other Costs" listed, no UNICAP costs included).

2. Form 1120 Schedule M)1))Prepare a work paper comparing inventory related book to return adjustment detail for multiple years and note the following:

   a. Type of M)1 adjustments: UNICAP with related IRC section 481(a) adj., Inventory Reserves (IRC section 461), Standard Cost Variances (Reg.1.471)11(d)(3)(ii)(a). (These topics are discussed in depth later in this chapter).

      Any M)1 adjustment warrants analysis to the extent that it can be determined to be appropriate for the taxpayer's business and is being consistently applied.

   b. Observe patterns and note material changes (direction of an amount change, account change, material amount changes, account relationships).

   c. Isolate and reconcile IRC section 263A, UNICAP, and the associating IRC section 481(a) adjustment to the amount(s) presented on the tax return.

   d. Be sure a good understanding is achieved regarding ALL M)1 adjustments. Analyze the rationale underlying a difference in book and tax and the effect that any discrepancy may have on tax (noting permanent versus timing differences).

Ratio Analysis

The computation of the following ratios will give the examiner a good indication of whether an in)depth examination is warranted before looking at any work papers, journals, or source documents. This analysis can be performed from tax return information alone:

1. Compare GROSS PROFIT percentage for consecutive years. The percentage should be consistent. Changes should be explained.

2. Compute the INVENTORY TURNOVER RATE: COS / (Beg. Inv. + End.Inv. / 2). This ratio indicates the number of times a taxpayer's inventory is sold and replenished during a taxable year. Under FIFO cost flow assumptions, the reciprocal of the turnover rate will be the percentage of current year costs remaining in ending inventory. If the turnover rate is 4, 25 percent (1/4) of current production costs would theoretically be in ending inventory. As the turnover rate increases, the percentage of current costs remaining in ending inventory decreases.

   Most companies we examined experience a turnover rate of approximately four times per year. Chip manufacturers are usually less, 2)3 times per year due to the complexity of the process.

3. Compute the $$DOLLAR$$ percentage (before labor and overhead allocations) of Work)in)Process (WIP) Materials + Finished Goods (FG) Materials / Total Inventory Materials. This reflects the percentage of materials started into production and/or materials sitting in finished goods. If the ratio is relatively small (less than 30 percent) there is less audit potential, because cost allocations, (and possible adjustments), are generally made to "in)process" activity. Another way to analyze this is to compare the dollars in raw materials inventories to the dollars in WIP and FG. If the ratio of Raw Materials (RM) is low compared to WIP + FG, adjustment potential is as favorable. (Physical count summary work papers will be needed for this analysis; however, some work papers may not provide the dollar amounts).

4. Make a timing effect determination. An inventory adjustment is a timing adjustment. If inventory levels go down in a subsequent year or inventoriable costs change, this may have a favorable effect on the taxpayer. Net effects should be considered, however, if taxpayer has a compliance problem with regard to the accounting method used, or if a gross under)allocation of cost to inventory is discovered, audit correction is recommended.

5. Another helpful ratio is the NUMBER OF DAYS SUPPLY IN INVENTORY (365 / Inventory Turnover Rate), which generally measures efficiency, however, the examiner should note that most companies set a "days supply minimum" level to be maintained as managerial policy, providing a good indication of expected inventory levels.

Understanding Accountants' Work papers

1. Physical inventory count sheets. Examiner should note:

   a. The delineation of raw materials, work in process, and finished goods (additional overhead costs will be allocated to WIP and FG)

b. How parts or items are identified on the worksheet

c. The basis for determining unit costs (at actual or standard)

d. The unit cost (actual or standard)

e. That the totals foot, summarize and reconcile with ending inventory balance per book.

2. Overhead allocations for WIP and FG. Agent should ascertain that:

a. Appropriate inventory costs are considered, and ALL applicable inventory costs are included

b. Basis for allocating or burdening the costs to inventories (dollars, hours, units, square footage) is appropriate

c. Computations are correct and consistent from year to year.

3. UNICAP worksheets. See Exhibit 1-1, A "UNICAP Checksheet."

4. Standard Cost Variance worksheets may be available if the taxpayer has allocated variances to inventory. See discussion later in this Chapter.

Interview and Tour of Facilities

1. Interview Controller, Chief Financial Officer (CFO), Accounting Manager to:

a. Understand the General Ledger set)up.

b. Direct the agent to identification of potential IRC sections 471 or 263A costs within the company's general ledger.

c. Identify activity that is outside the scope of inspection: overseas production, sub)contracted processes like outside assembly, testing, or engineering.

2. Interview Production Manager to:

a. Understand the product.

b. Understand the production process (that is, steps, job functions, sub)contract functions).

c. Identify potential cost types.

3. Tour of Facilities to:

    a. Confirm testimony with actual activity.

    b. Obtain a feel for the size of the operation. (that is, active production observed, size of labor force, physical location of manufacturing versus other activity). Overhead allocations may be based on this.

    c. Inspect the existing Finished Goods, Work in Process, and Raw Materials inventories, as well as supplies and tooling.

    d. Evaluate overall integration of the operations. Information obtained by performing interviews and tour of facilities should corroborate. Disunity is an indication that further examination should be pursued.

Sample Audit Program

Presented in Exhibit 1-2 is a sample of the audit program spreadsheet prepared for a small publicly held logic chip manufacturer. The procedures listed are not meant to be all inclusive.

COST ANALYSIS

Cost Identification

Full absorption costing involves two steps on the part of the taxpayer: 1) costs must be identified, and, 2) the costs must then be allocated between inventory and cost of sales. This section discusses first the regulations that are concerned with defining the costs subject to full absorption and super)full absorption. Then the text briefly explains the procedures that allocate the costs between inventories and cost of sales.

Full absorption costing regulations establish three categories of indirect costs and prescribe different absorption rules for each category.

Under prior law, manufacturers were required to comply with the full absorption rules under Treas. Reg. section 1.471)11. The full absorption rules provided three categories of indirect costs associated with production activities.

- Category 1 costs to be included in inventories.

- Category 2 costs included or excluded from inventory depending on how the taxpayer treats the costs for Generally Accepted Accounting Principles (GAAP) purposes.

- Category 3 costs to be treated for tax purposes in conformity with treatment for financial purposes.

UNICAP eliminated the three cost category approaches in the full absorption regulations. Under UNICAP, most category III expenses must be allocated along with category I costs to inventory. Category II costs, Design, Excess Tax Depreciation, and Interest (in some cases), must now be charged to inventories.

The specific costs that are required to be capitalized can be found in the regulations. Direct production costs are defined in Treas. Reg. section 1.263A)1(e)(2) and Indirect production costs are defined in Treas. Reg. section 1.263A)1(e)(3). See Exhibit 1-3 for listing of costs to be considered.

Mixed Service Costs

Treas. Reg. section 1.263A)1(e)(4) General and Administrative (G&A) costs related to production are required to be allocated to production. Under Treas. Reg. section 1.263A)1(e)(4)(iii) the following G&A costs require an allocation to production:

Extract

Treas. Reg. section 1.263A)1(e)(4)(iii)

* * * * * * *

(A) The administration and coordination of production *** activities (wherever performed in the business organization of the taxpayer).

(B) Personnel operations, including the costs of recruiting, hiring, relocating, assigning, and maintaining personnel records or employees.

(C) Purchasing operations, including purchasing materials and equipment, scheduling and coordinating delivery and return of materials and equipment to or from factories or job sites, and expediting and follow-up.

(D) Materials handling and warehousing and storage operations.

(E) Accounting and data services operations, including *** cost accounting, accounts payable, disbursements, and payroll (but excluding accounts receivable and customer billing functions).

(F) Data processing.

(G) Security services.

(H) Legal departments.

Under Treas. Reg. section 1.263A)1(e)(4)(iv), the following G&A costs generally do

not require an allocation to production:

1. Overall management functions such as chairman or CEO
2. General business planning, economic analysis, and forecasting
3. Financial accounting and planning
4. General financial planning
5. Personnel policy
6. Quality control policy
7. Safety engineering policy
8. Insurance or risk management policy
9. Environmental management policy
10. General economic analysis and forecasting
11. Internal audit
12. Public relations
13. Tax department
14. Marketing, selling or advertising.

BURDEN / ALLOCATION OF INDIRECT COST TO INVENTORY

Treas. Reg. section 1.471)11(d)(1) prescribes this general rule for allocating indirect cost to inventory stating, "*** inventoriable costs *** must be allocated to goods in *** ending inventory *** by the use of a method which fairly apportions such costs among the various items produced."

Method should reflect "acceptable accounting principles" and should be applied in a "reasonable manner." Development of appropriate allocation method(s) require the selection of a statistical base that has a meaningful relationship to production and the incurrence of indirect costs (that is, direct labor hours, direct labor dollars, square footage, unit starts, etc.).

The statistical base selected is then related to allocable overhead costs. The result is

an overhead rate which is computed from a fraction, the numerator is the indirect cost and the denominator is the statistical base.

A change in the concept in which burden rates were developed by the taxpayer is considered a change in accounting method requiring the consent of the Commissioner under Treas. Reg. section 1.263A)1(f)(3)(i)(A).

Mixed Service Cost Allocation Methods

There are four methods of allocating a portion of mixed service costs to production activities.

1. Fact and circumstances method: Treas. Reg. section 1.263A)1(g)(4)(i). Mixed service costs (MSC) shall be allocated on the basis of a factor or relationship that reasonably relates the service cost to the benefits received by the activity.

2. Direct reallocation method: Treas. Reg. section 1.263A)1(g)(4)(iii)(A). Mixed service costs are allocated directly to production departments and then allocated to ending inventory.

3. Step)allocation method: Treas. Reg. section 1.263A)1(g)(4)(iii)(B). This requires a sequence of allocations starting with departments which provide service to most of the other service departments and ending with allocating departments that provide service to the least amount of departments. This, a step)allocation method, recognizes the benefits provided by one mixed service department to another mixed service department.

4. Simplified service cost method: Treas. Reg. section 1.263A)1(b). Instead of developing its own allocation method, a company can elect to use the "simplified service cost method" to allocate mixed service costs to ending inventory. The "simplified service cost method" determines the inventoriable amount by using the following formula:

TOTAL MIXED SERVICE COSTS X ALLOCATION RATIO

A producer may elect either the labor)based allocation ratio or the production cost allocation ratio.

A "de minimis" rule under Treas. Reg. section 1.263A)1(g)(4)(ii) applies to the "simplified service cost" method. Under the "de minimis" rule, a department's entire cost is considered production if 90 percent or more of the departments costs are related to production costs and conversely if less than 10 percent of the department's costs are related to production, then the entire cost is considered a period cost.

Ending Inventory Allocation Methods

The steps above relate to the accumulation of the total additional costs that have to be capitalized under the super)absorption rules. The following discussion addresses the allocation of indirect production costs between ending inventory and cost of goods sold. Under Treas. Reg. section 1.263A)1(f)(1), there are several methods of allocating production costs between cost of goods sold and ending inventory.

1. Specific (Facts and Circumstances) Cost allocation methods:

   a. Specific identification, Treas. Reg. section 1.263A)1(f)(2)

   b. Burden Rate method, Treas. Reg. section 1.263A)1(f)(3)

   c. Standard cost method, Treas. Reg. section 1.263A)1(f)(3).

2. Simplified production method: Treas. Reg. section 1.263A)2(b) This method involves the application of two calculations to allocate all additional costs (except interest) between inventory and cost of goods sold. The two calculations are the following:

   Step #1:

   $$\frac{\text{Total additional IRC section 263A incurred during year}}{\text{Total IRC section 471 costs incurred during year}} = \text{Absorption ratio}$$

   Step #2:

   $$\text{Absorption ratio} \times \text{Ending inventory} = \text{Total additional Cost in Ending Inventory}$$

See also 1.263A)2(b)(4) which provides an historic absorption ratio election.

See Exhibit 1-4, Preparer Checksheet.))If at all possible, examiner should have the taxpayer or the preparer compute the under capitalization adjustment. Preparer instruction worksheet for adjustment due to failure to properly implement IRC section 471 and 263A is provided for this purpose.

STANDARD COST VARIANCE TREATMENT

Manufacturers in the electronics industry often use the standard cost method for valuing their inventory and cost of sales. Under the standard cost method, engineering analysis and other costing techniques are used to project the cost of a particular item. These projections are generally made for both direct and indirect production costs. When using the standard cost method, variance accounts are used by the taxpayer to record differences between a standard cost and the actual cost. The variances can be recorded at the date of purchase, different stages of production, and when goods are transferred from work)in)process to finished goods or back to materials as a sub)assembly. The variance accounts will usually be located in the cost of sales section of the general ledger. The general ledger will show the entries into the variance account. Descriptions and detail of the entries are usually located with the journal vouchers. There are many different variances that can be developed by a company. Some of the more common variances are the following:

- Material variances can be due to the difference between the standard and actual cost of the part (price variance) or the amount of material actually used (usage variance).

- Labor variances can be due to differences in labor costs which are due to number of hours worked (efficiency variance) or the wage rate paid (rate variance).

- Overhead variances can be due to the difference between the amount of overhead applied to production at a predetermined standard rate and the amount of overhead actually incurred.

Data, such as variances, are used by management to maintain control of the company's production process by investigating why standard costs differ from actual costs. If the cause of the variance is due to production inefficiencies or waste, management will take steps to correct the problems. However, if the cause is due to outdated standard costs, then management may choose to revise the standard costs.

It should be kept in mind that standard costs are often based on estimates, averages, and data collected over a period of time. For this reason, standard costs are often difficult and time consuming to verify.

However, some audit techniques can be used early in the examination process to determine if a more in)depth investigation is needed. The following are some audit techniques that may be helpful to ensure that ending inventory approximates actual costs:

1. Sample parts in the raw materials ending inventory. Compare their standard cost to an actual purchase invoice for similar parts at year end.

2. Standard direct labor rates for production departments, such as test or assembly, are usually based on the average wage paid within each department. Verification of the wage rates used to compute the average wage in a department can be found in the employee payroll files.

3. Look at year end for large unfavorable variance account balances. According to Treas. Reg. section 1.263A)1(f)(3)(ii)(B), a taxpayer must allocate a pro)rata portion of any overhead variance and any direct production cost variance to ending inventory. The regulations allow variances to be deducted currently if the following three conditions are met:

   - Variances are not significant in amount in relation to the taxpayer's total actual indirect production costs for the year (regulations do not define significant).

   - The taxpayer must deduct the variance in their financial reports.

   - Both positive and negative variances must be treated consistently.

4. Check to see how often the standard costs are updated. If the taxpayer has revised the standard costs based on the most current costs, then there may be no need to allocate any portion to ending inventory. However, large unfavorable entries at or near year end should be investigated to determine if they are the result of rework labor, scrap, or spoilage. IRC section 263A requires such costs to be capitalized.

INVENTORY RESERVES

Introduction

As outlined by the Financial Accounting Standards Board (FASB) in the Accounting Research Bulletin (ARB) 43, Chapter 4, a departure from the cost basis of pricing the inventory is required when the market value of the goods is no longer as great as its cost. Where there is evidence that the market value of goods will be less than cost, the difference should be recognized, for financial statement purposes, as a loss in the current period. Therefore, for financial statement purposes, companies are taking a conservative approach by valuing inventory at lower of cost or market. Inventory reserves are designed to reflect the value of the inventory at less than cost. In the electronics industry, the rapid pace of technology has caused goods to become obsolete over a short period of time. This causes many problems in valuing the inventory at lower of cost or market. A common problem in the electronics industry is the production manager wants to keep the worthless inventory to fill a particular customer's need and the accountant wants the company to get rid of it in order to get a write)off.

In order for a business to write down inventory below cost for tax purposes, it must

follow the requirements under IRC section 471 and Treas. Reg. section 1.471. Treas. Reg. section 1.471)4 allows a taxpayer to elect to value inventory at lower of cost or market. These rules and regulations provide a guideline for the definition of market value and specific situations in which a taxpayer can recognize a loss from a write down of normal and abnormal goods. In ***Thor Power Tool Co. v. Commissioner***, 439 U.S. 522(1979), the courts stated that write)downs consistent with GAAP would not be sustained for federal income tax purposes unless they conformed to the applicable regulations.

Non)manufacturer

Treas. Reg. section 1.471)3(b) defines cost for merchandise purchased to be the invoice price less trade or other discounts. Treas. Reg. section 1.471)4(a) defines, under ordinary circumstances and for normal goods in inventory, "market" means the current bid price prevailing at the date of the inventory for the particular merchandise in the volume in which usually purchased by the taxpayer. In ***Thor Power Tool v. Commissioner***, 439 U.S. 522(1979), ***Bloom Brothers, Inc.***, 10 BTA 710(1928), and ***Crown Mfg. Co.***, 12 BTA 37(1928), the courts concluded that market means the price that the taxpayer would have to pay on the open market to purchase the inventory items in question.

Manufacturer

Treas. Reg. section 1.471)3(c) defines cost for merchandise produced by the taxpayer as the cost of raw materials and supplies, direct labor, and overhead. There are three methods used to define market value for manufactured goods. These three methods are the following:

1. Replacement cost method. The replacement cost method values market at the price at which the taxpayer can replace its inventory through purchase from an outside party. This method, generally, would include profit to the seller. In ***Gen. Couns. Mem. 9401***, x)1 C.B. 102(1931), the IRS took the position that the manufacturer's finished goods and work in progress inventory should be valued at the replacement cost. The IRS position was supported by the Board of Tax Appeals in ***Ideal Reversible Hinge Co.***, 7 BTA 1066(1927) and ***Rialto Mining Corp.***, 9 BTAM(P)H) par. 40,369(1940).

2. Reproduction cost method. The reproduction cost method is defined under Treas. Reg. section 1.471)4(a)(2). This method uses the current market bid price for materials, labor, and overhead for goods in process and finished goods on hand. The Court of Claims in ***Bedford Mills Inc. v. United States***, 59 F2d 263 (Ct.Cl.1932), ***cert. denied***, 290 U.S. 655(1933), valued the inventory using the lower of actual cost or the reproduction cost. The court rejected the position in ***Gen. Couns. Mem. 9401*** since they felt it did not coincide with Treas. Reg. section 1.471)4(a)(2).

Several cases have expressed an allowance for either method to be used. See ***Ralph Ellstrom v. Commissioner***, 235 F2d 181(6th Cir. 1956) and ***Space Controls, Inc.***, 322 F2d 144(5th Cir. 1963). Gertzman in ***Federal Tax Accounting*** at 6)82 states the following:

"The IRS today appears to be neutral on the issue and is willing to allow the use of either reproduction or replacement cost. This latitude could be helpful to taxpayers, since reproduction cost would be expected to be less than replacement cost because it would not include the profit to the seller."

3. Goods offered for sale: According to Treas. Reg. section 1.471)4(b), where a taxpayer has offered for sale inventory at prices lower than the current market price, the taxpayer may value inventory at this price less the cost of disposition. This value will be supported with actual sales of the merchandise within a reasonable time before or after the date of the inventory. Prices which vary materially from the actual selling price will not be accepted as reflecting the market.

   In ***Herbert A. Nieman***, 19 Tax Ct. Mem. 634 (1960), the court valued the taxpayer's inventory at the price at which identical goods were sold for the taxpayer 16 days prior to the inventory date.

   In ***Space Controls, Inc. v. Commissioner***, 322 F.2d 144(5th Cir. 1963), the courts applied the write)down to both goods in process and finished goods. The court stated that the regulation deliberately used the term "merchandise" which would mean the finished product. But the regulation did not then proceed to limit the benefit of paragraph (b) to inventory in so far as it was represented in such "merchandise." Rather the regulation itself states that in such event "the inventory may be valued at such sales prices less direct cost of disposition."

   a. **Abnormal Goods**

      Under Treas. Reg. section 1.471)2(c), goods in inventory which are unsalable at normal prices or unusable in the normal way because of damage, imperfections, shop wear, changes of style, odd or broken lots, or other similar causes, including second hand goods taken in exchange, should be valued at bona fide selling prices less direct cost of disposition.

      Treas. Reg. section 1.471)2(c) defines "bona fide selling price as actual offering of goods during a period ending not later than 30 days after inventory date and the taxpayer is required to maintain such records of the disposition of the goods as will enable a verification of the inventory to be made."

b. **Accounting for Reserves**

When inventories are written)down below cost, the reduction will credit the inventory valuation account or inventory reserve account. This allows the original cost of the goods to remain in the inventory account. The contra account will reflect the amount that has actually been written down before that company actually disposes of it. During the year, the debits to the inventory reserve are items that the company actually disposed of or sold during the year. There will be an M)1 adjustment adding back to book income the current years addition to the reserve account, or conversely, reducing book income if the reserve account has been depleted. Most returns will show the M)1 item as a net figure which is the difference between the beginning and ending balance of the reserve account.

Verify the beginning and ending balance of the reserve account per book. If the company did not add back the entire ending balance and a portion has been expended for tax purposes, investigate to ensure the deduction was proper for tax purposes. If the company did not make an M)1 adjustment for reserves and the company has an inventory reserve account for book purposes, definitely examine why there was no M)1 adjustment. If abnormal goods have been written down, then, examine whether or not these goods have actually been offered for sale.

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IRC SECTION 263A
UNICAP CHECKSHEET

1. Does IRC section 263A apply?

   a. Manufacturer/producer) YES

   b. Retailer/wholesaler/distributor/reseller) YES, if greater than $10M in Gross Sales.

   c. Service provider) NO

2. Has IRC section 263A been applied timely? Check the tax return for F3115 (1st year election could be in 1987, 1988, or even 1989). Sometimes taxpayer fails to properly file F3115, but does include work papers supporting their 263A computations.

Note: From inspection of F3115:

   a. Taxpayer's fiscal/calendar year)

   b. Year F3115 filed)

   c. Cost allocation/burden methods elected (Per F3115) for:

      1) Mixed Service Costs
      2) Inventory

3. Verify IRC section 481(a) adjustment on the return where taxpayer originally elected the change in method.

   a. Check F1120 "Other Income" section and corresponding M)1 entry.

   b. Verify 481(a) spread:

      1) 4 year
      2) 75 percent rule
      3) 67 percent rule
      4) Other

   c. 100 percent recognition in year 1 (however, spread shall be allowed per audit if F3115 was properly filed).

4. Verify F1120 Schedule A entry for Additional 263A Costs (current year). This is usually presented per the return as the netted adjustment to inventory and entered on Schedule M)1 for beginning and ending year adjustments. Sometimes preparers will restate COS schedule to fully reflect UNICAP costs in total costs and inventories.

5. Perform detailed reconciliation of book to return (including all GL or Financial Statement accounts). This step is necessary in order to become familiar with those accounts already inventoried by the taxpayer, versus accounts that were taken as period cost/expense.

   Differentiate "Other Costs" v. "Other Deductions" classified by taxpayer. At this time verify that full absorption costs are proper. You will later be requesting taxpayer to support the non)inclusion of "Other Deductions."

6. Secure taxpayer's physical inventory count sheets and inventory valuation workpapers. Any adjustment to full absorption costs (IRC section 471) shall precede the UNICAP computations and must be considered first.

   a. Pay particular attention to WIP valuation and ascertain that the method is proper.

   b. Scrutinize taxpayer's method of burdening overhead costs for purposes of IRC section 471.

   c. If perpetual inventory and standard cost accounting system is used, verify the materiality and treatment of variances.

7. Secure taxpayer's IRC sections 481(a) and 263A work papers for ALL years filed. Inspect for consistency as to computations and methods elected by taxpayer. Reconcile taxpayer's computed adjustment with the return.

8. Identify Mixed Service Costs.

   a. Analyze the account set)up per the reconciled general ledger or financial statement.

   b. Start with the year under examination by scanning account by account through the reconciled general ledger noting presentation of Category 1, 2, 3 costs.

      1) GL may be set)up departmentally or under cost centers.

         De minimus rule may apply for; Sales/Marketing/Engineering/Research departments, if greater than 90 percent of the function is predominantly that

activity. (Examiner may want to sample audit the departmental accounts to ascertain that non-associated expenses aren't buried in these departments).

2) Scrutinize labor accounts, especially that of officers. Officers of closely-held companies many times have multiple job functions, which require cost allocation to the appropriate dept. Interview is particularly important in order to tie down reasonableness of the salary allocation. Separate determination should be made for each individual officer.

3) Prepare a "per audit" list of all 263A and Mixed Service Cost you have identified, and your (determination of labor cost distribution for officers.

9. Apply allocation formulas as elected by the taxpayer to the year under examination. This should be presented to taxpayer to support your proposed adjustment.

10. If adjustment exists, go through step 8 and 9, securing general ledger/financial statement information and tax returns, for the 481(a) computation and ALL other subsequent taxable years.

11. Perform an analysis of tax impact.

    a. A spreadsheet allows the best visualization of timing effects.

    b. Consider TI, NOL Carry Forwards, IRC and/or Research Credit, as well as Alternative Minimum Tax effects.

    This analysis is to precede scope expansion, as a multiple year issue adjustment net effect may have no cost benefit.

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COST OF SALES AUDIT PLAN

Purpose: To identify costs associated with production, verify amounts, consider timing and consistency in method of accounting for these costs, and determine whether the appropriate costs are properly matched to sales per IRC section 471 and IRC section 263A.

Procedures:

1. Reconcile GL to F1120 Schedule A (through accountant's grouping worksheet).

2. Perform ratio analysis:

   Three year comparative)
   - Gross Profit %
   - O/H Absorption Rates
   - UNICAP Absorption Rates
   - Direct Materials
   - Direct Labor
   - Other Costs
   - Inventory Pattern
   - % if WIP and FG to Total Inventory

3. Analyze M)1 adjustments related to inventories to determine if proper. Assess the impact of the adjustment to cost of sale as it relates to income (+/)).

a. Inventory Reserves	-	*
b. Inventory in Transit	-	*
c. Inventory Adjust to Actual	-	*
d. Software Update Accrual	-	*
e. Inventory Overhead Adjustment	*	-
f. UNICAP	*	-

4. Breakout other costs summary (work paper provided by taxpayer) by department, if necessary. Determine whether substantive tests are to be performed.

5. Secure and inspect physical inventory count documents for beginning and ending of year (don't need all count sheets; summary WP is OK).

6. Verify adequacy of internal control procedures over inventories.

7. Flowchart the production process for hardware/software from a functional v. record keeping standpoint.

8. Secure and inspect work papers allocating O/H (other costs and/or occupancy) to WIP and FG.

9. Identify direct labor personnel.

10. Identify the character of raw material/purchases.

11. Secure and inspect workpapers identifying UNICAP costs, identifying and allocating mixed service costs, and burdening these costs to inventories.

12. Ascertain consistency in accounting treatment with respect to inventory valuation (GAAP and UNICAP). Multiple year UNICAP verification (to include IRC section 481(a) computation).

13. If applicable, analyze the standard costing system for valuation of standards utilized and variance treatment.

14. If technical clarification is necessary, interview appropriate person (Program Manager, VP of Engineering, Production Manager).

Exhibit 1-3 (1 of 2)

INVENTORIABLE COST IDENTIFICATION

		471	263A
Direct Production Cost	Treas. Reg. sec. 1.263A)1(e)(2)		
Direct Material		C	C
Direct Labor		C	C
Indirect Production Cost	Treas. Reg. sec. 1.263A)1(e)(3)		
Category 1			
Repairs		C	C
Maintenance		C	C
Utilities		C	C
Rent		C	C
Indirect labor and supervisory cost		C	C
Indirect materials and supplies		C	C
Small tools and equipment		C	C
Quality control and equipment		C	C
Category 2			
Marketing		E	E
Advertising		E	E
Selling expenses		E	E
Distribution		E	E
Interest		E	E
Research and Experimental		E	E
Engineering and Design expenses		E	C
Excess Tax depreciation		E	C

Category 3	471	263A
Taxes other than local, state, and foreign income taxes	O	C
Financial statement depreciation	O	C
Strikes	O	E
Rework labor, scrap, and spoilage	O	C
Factory administrative and employee benefits	O	C
Bidding expenses	O	C
Administrative, service, and support functions related to production	O	C
Off)site storage, purchasing, and handling	O	C
Production officer's salaries and insurance	O	C
Intangible drilling costs	O	E
Mine and natural deposits development cost	O	E

Legend: C = Capitalize E = Expense(period) O = Optional

PREPARER'S CHECKSHEET

The Simplified Production Method is use to allocate 263A COSTS to ending inventory. (Do not confuse this with the simplified service cost method, which burdens mixed service costs to the 263A pool).

Additional 263A Costs Old 471 Costs	= Absorption Ratio	X	Ending 471 Inventory Balance

Burden Method Selection Considerations:

1. Future inventory levels
2. Cost / benefit of additional accounting
3. Relative size of a mixed service department. Possible splitting up of departmental costs into production and non)production eliminates allocation.

STEPS in Analyzing the General Ledger:

1. Analyze costs. Classify as,
   a. Entirely production,
   b. Non)production, or
   c. Mixed service costs.

2. Determine the allocation method to be used for mixed service costs and perform the allocation computation.

3. Classify costs by Code section, IRC section 471 v. IRC section 263A.

Special Considerations:

1. The de)minimus rule, 90 percent test for UNICAP inclusion. Total department costs are excluded for purposes of UNICAP if 90 percent or greater of the department's cost are non)inventoriable.

2. Simplified v. regular method of allocating MIXED SERVICE Costs have a different effect on income, depending on the make)up of actual manufacturing activity and associated inventories.

Simplified Service Cost Method:

) **Product Cost Absorption Ratio:**

	Total 471 & 263A Production Costs
TOTAL	(don't include MSC & Interest)
MSC X	)))))))))))))))))))))))))))))))))
ONLY	TOTAL COSTS
	(don't include MSC & Interest)
	(exclude income taxes)

) **Labor)based Allocation Ratio:**

	Total 471 & 263A Labor Costs
TOTAL	(don't include MSC labor)
MSC X	))))))))))))))))))))))))))))
ONLY	TOTAL LABOR COST
	(don't include MSC labor)

Chapter 2

RESEARCH AND DEVELOPMENT

INTRODUCTION

Electronics is an industry with rapidly changing technology. Newly developed products are often marketable for only a few years due to obsolescence. Companies must spend substantial amounts on Research and Development (R&D) to remain competitive. Consequently, issues related to research and development expenses as both a deduction and credit are encountered with increasing frequency. This chapter is devoted to a discussion of these topics.

Research and Development costs are addressed in two sections of the Code. The Internal Revenue Code of 1986, as amended, provides for two R&D incentive provisions: section 174, which allows a deduction and section 41, which allows a nonrefundable credit.

This chapter of the audit technique guide is divided into six sections:

1. IRC section 174: Definition of Research and Experimental Expenditures

2. IRC section 41: Definition of Qualified Research includes analysis of tax law and case examples for wages, supplies and contract research expenditures.

3. Computer Software Development Costs includes analysis of tax law and case examples pertaining to Revenue Procedure 69)21, Proposed Amendments of Treas. Reg. section 1.174)2, and FASB 86.

4. Computation of IRC sections 174 and 41 includes analysis of tax law and case examples relating to IRC section 280(C)(c)(3), base amount computation and alternative minimum tax.

5. Research and Development Tax Shelters

6. Auditing Techniques.

IRC SECTION 174: DEFINITION OF RESEARCH AND EXPERIMENTAL EXPENDITURES

Research and Experimental Expenditures are defined in Treas. Reg. section 1.174)2, adopted October 3, 1957, as the following: all experimental and laboratory costs incurred in connection with the taxpayer's trade or business incident to the development of an experimental or pilot model, plant process, product, formula,

invention, or similar property, or the improvement of an already existing property of similar kind; costs of obtaining a patent, including attorneys' fees expended on making and perfecting a patent application; depreciation allowances with respect to depreciable property. All IRC section 174 regulations cited and discussed in this chapter were finalized in 1957.

Per Treas. Reg. section 1.174)2, there are exceptions to the general definition of research and experimental expenditures. These are the following:

1. Expenditures for ordinary testing or inspection of material for quality control, management studies, advertising, consumer studies, efficiency surveys, or promotions;

2. Costs of acquiring another person's patent, model, process, etc;

3. Costs incurred in connection with literary, historical and similar projects involving the production of property;

4. Costs of acquiring or improving land;

5. Expenditures to acquire or improve depreciable property used in connection with the research; amounts expended for research and experimentation do not include the costs of the component materials of the depreciable property, the costs of labor or other elements involved in its construction and installation, or costs attributable to the acquisition or improvement of the property. However, costs not attributable to the construction, installation, acquisition or improvement of the property may qualify. (Note: allowances for depreciation under IRC section 167 are considered research or experimental expenditures deductible under IRC section 174).

IRC SECTION 41 DEFINITION OF QUALIFIED RESEARCH EXPENSES

IRC section 41(d)(1) states that the term "qualified research", for the purposes of the research credit, means research:

Extract

IRC Section 41(d)(1)

* * * * * * *

(A) with respect to which expenditures may be treated as expenses under section 174,

(B) which is undertaken for the purpose of discovering information --

(i) which is technological in nature, and

(ii) the application of which is intended to be useful in the development of a new or improved business component of the taxpayer, and

(C) substantially all of the activities of which constitute elements of a process of experimentation *** [relating to a new or improved function, performance, reliability, or quality].

* * * * * * *

Final Regulations were adopted May 17, 1989, for IRC Section 41. These do not reflect the definition of the term "qualified research" adopted by the Tax Reform Act of 1986.

IRC section 41(b) limits the expenditures eligible for credit to:

1. WAGES paid to an employee performing qualified services.

   Per IRC section 41(b)(2)(B), the term qualified services means services consisting of engaging in qualified research or engaging in the direct supervision or direct support of research activities.

   Per IRC section 41(b)(2)(D), the wages must be within the meaning of IRC section 3401(a).

   Per Treas. Reg. section 1.41)2(d), if at least 80 percent of an employee's services are allocable to qualified research, then all of the employee's wages may qualify for calculating the credit. Otherwise, if the employee has performed both qualified and unqualified services, only the amount of wages allocated to qualified services is eligible for the credit.

   Per Treas. Reg. section 1.41)2(c), direct support of research activities does not include general administrative services, or other services only indirectly benefitting research activities.

2. SUPPLIES used in qualified research.

   Per IRC section 41(b)(2)(C), supplies means any tangible property other than land or improvements to land, and property of a character subject to the allowance for depreciation.

   (Note: depreciation expenses for capitalized items are not includible.)

   Per Treas. Reg. section 1.41)2(b), expenditures for supplies that are indirect research expenditures or general and administrative expenses do not qualify as research expenses. However, extraordinary expenditures for utilities do qualify as research expenses to the extent the taxpayer can establish that the special character of the qualified research required additional extraordinary expenditures for utilities.

3. SIXTY-FIVE PERCENT OF CONTRACT SERVICES which are paid or incurred for qualified research.

The contractor need not separate his or her wages and supplies costs from overhead.

Per IRC section 41(d)(4), there are statutory exceptions to the general definition of qualified research. These are the following:

1. Research conducted after beginning commercial production;

2. Research for the adaptation of existing business components;

3. Research for the duplication of an existing business component of another taxpayer;

4. Research done outside the United States;

5. Research in the social sciences, arts or humanities;

6. Management studies and efficiency surveys;

7. Research funded by another person, or any governmental entity, by means of a grant or contract;

   However, per Treas. Reg. section 1.41)5(d), amounts payable under any agreement that are contingent on the success of the research and thus considered to be paid for the product or result of the research are not treated as funding. Conversely, if the taxpayer did receive payment at the conclusion of each stage of development, regardless of whether the client's product was ultimately brought to completion, the research would be considered funded.

8. Research in which taxpayer retains no substantial rights;

Also, per IRC section 41(d)(3), qualified research shall not relate to style, taste, cosmetic, or seasonal design factors.

Case Example 1

Definition of qualified research expenses with respect to wages, supplies and contract research expenditures

The corporation (hereinafter referred to as "A") is engaged in the development, manufacture, and sale of microcomputer mother boards and related computer components. Proprietor chipsets are manufactured and purchased from another company based on A's designs.

The markets for the company's products are intensely competitive. These markets are characterized by rapidly changing technology, resulting in short product life cycles and frequent price declines. A's gross profit has increased as a percentage of net sales from 15.0 percent in fiscal 1988 to 19.9 percent in fiscal 1989, 21.2 percent in fiscal 1990, and 24.7 percent in the fiscal 1991.

"A" believes that technical leadership is essential to its success and is committed to significant expenditures for research and development. As a result, the company's R&D expenses have grown significantly through the years.

A comparative analysis of Gross Sales, R&D Expenses, and R&D Credit claimed are as follows:

Year	Gross Sales	R & D Expenses	R & D Credit Claimed
8812	$26,000,000	$1,500,000	$100,000
8912	$35,000,000	$1,800,000	$175,000
9012	$81,000,000	$5,500,000	$300,000
9112	$100,000,000	$8,000,000	$500,000

In analyzing the taxpayer's books and records, the examiner discovered:

1. Wages paid to manager above the level of first) line supervisors

   A highly compensated officer in the research and development division was performing both qualified research work and an activity unrelated to research.

   Per IRC section 41(b)(1) and 41(b)(2)(B), the credit includes wages paid for the direct supervision or direct support of research activities. The taxpayer claimed that the officer's duties consisted solely of direct supervision of employees engaged in qualified research. The revenue agent closely examined purchase orders in cost of goods sold. The officer was the purchasing agent listed on the purchase order.

   Per Treas. Reg. section 1.41)2(d), an allocation between qualified and unqualified activities is made for wages includible in the credit if less than 80 percent of employee's services are qualified. The examiner was able to verify that less than 80 percent of the officer's services were allocable to qualified research. The examiner reduced the credit for research activities by wages paid to officer allocable to duties performed as purchasing agent.

2. Contract Research Expenditures misclassified as supplies

   The taxpayer had included a significant amount of the outside contractor's expense (65 percent allowable) in the supplies (100 percent allowable) for the calculation of the credit for increasing research activities.

   Per IRC sections 41(b)(1) and 41(b)(2)(C), the credit includes supplies purchased for use in qualified research. The examiner closely examined invoices for supplies with:

   a. Names more closely associated with contractors than vendors, and/or

   b. Significant dollar amounts. A portion of these items were payments for contract research expenditures rather than supplies. The examiner reduced the credit by 35 percent of the contract research expenditures misclassified as supplies.

   c. Nonqualified Research and Experimental Expenditures included as Contract Research Expenditures;

      Consulting services were for marketing research.

Per IRC section 41(b)(1) and (3), the credit includes contract research expenditures paid for qualified research. The examiner closely examined the "summary of services rendered" attached to the invoice.

Per IRC section 1.174)2, advertising is a statutory exception to the general definition of research and experimental expenditures. The examiner reduced the credit by the contract research expenditures performed for marketing research.

Case Example 2

Disqualifying dispositions do not constitute wages for purposes of IRC section 41

Corporation develops and manufactures computer software and hardware products.

Key employees of the corporation, including software and hardware engineers as well as officers of the corporation, were given stock options in Qualified and Non)Qualified Stock Plans. The corporation contracted with a company of outside consultants to produce a specific computer software product. These consultants were given stock options in Non)Qualified Plans in addition to regular consulting fees.

In 1989 the corporation became publicly held. At this time many of the employees exercised their stock options and subsequently sold the acquired stock. Three different situations resulted:

Situation 1

Employee disposes of stock from a Qualified Stock Plan in a disqualifying disposition.

In a disqualifying disposition, the employee includes as ordinary income on Form 1040 in year of disposition: the difference between the FMV on the date of exercise and the exercise price. Accordingly, in a disqualifying disposition, the employer deducts on Form 1120: the difference between the FMV on the exercise date and the exercise price.

(Note: Any stock value appreciation recognized after the exercise date is capital gain to the employee and may not be deducted by the employer.)

In Revenue Ruling 71)52, 1971)1 C.B. 278, the Service ruled that the disqualifying disposition of stock acquired by the exercise of a qualified stock option did not result in the receipt of wages for Federal Employment Tax purposes (that is, wages are not subject to withholding although the income is still taxable to the employee). Per IRC sections 41(b)(1) and 41(b)(2)(B), the credit includes wages paid for performing qualified research. Per IRC section 41(b)(2)(D), the wages must be of the type described in IRC section 3401(a). Therefore, the employer may not include amounts deducted as disqualifying dispositions in the credit for research activities as "wages paid to an employee."

Situation 2

Employee exercises stock options acquired from a Non)Qualifying Plan.

This is the situation referred to in ***Apple Computer, Inc. and Consolidated Subsidiaries v. Commissioner***, CCH Dec. 48,042, in which the Internal Revenue Service has acquiesced. In the year the stock is exercised, the difference between the FMV on exercise date and the exercise price results in the receipt of wages for Federal Employment Tax purposes. The employer may deduct on Form 1120, the difference between the FMV on the exercise date and the exercise price, if the employer has withheld in accordance with IRC section 83(h) and Treas. Reg. section 1.83)6(a)(2).

Per IRC sections 41(b)(1) and 41(b)(2)(B), the credit includes wages paid for performing qualified research. Per IRC section 41(b)(2)(D), the wages must be of the type described in IRC section 3401(a).

Therefore, the employer may include amounts allowable as a deduction from the exercise of Non)Qualified Stock Options in the increasing credit for research activities as "wages paid to an employee."

Situation 3

Non)Employee exercises stock options acquired from a Nonstatutory Plan.

In the year the stock option is exercised, the difference between the FMV on exercise date and exercise price results in the receipt of self) employment income by the independent contractor. The taxpayer may deduct on Form 1120, the difference between the FMV on the exercise date and the exercise price. There are no withholding requirements in the Internal Revenue Code for self)employment income earned by independent contractors.

Per IRC sections 41(b)(1) and 41(b)(3), the credit includes contract research expenses. Therefore, the taxpayer may include amounts allowable as a deduction from the exercise of Non)Qualified Stock Options in the credit for research activities as contract research expenses.

Case Example 3

Wages Deferred in 401(k) Plan

Corporation develops and manufactures computer software and hardware products. Employees of the corporation were able to defer a portion of their wages in a 401(k) plan.

The examiner requested all the work papers used to calculate the credit for the Form 1120 8912. The calculation of the credit includes wages deferred in the 401(k) plan.

Per IRC sections 41(b)(1) and 41(b)(2)(B), the credit includes wages paid for performing qualified research. Per IRC section 41(b)(2)(D), the wages must be of the type described in IRC section 3401(a). Wages deferred in the 401(k) plan are not wages subject to withholding. Thus, the examiner reduces the qualified research expenditures for the 8912 year by wages deferred in the 401(k) plan.

COMPUTER SOFTWARE DEVELOPMENT COSTS

Revenue Procedure 69)21, 1969)2 C.B. 303

In Rev. Proc. 69)21, the IRS announced that it would allow taxpayers to treat software development costs in a manner similar to that in which research or experimental expenditures are treated under IRC section 174. The rationale for this is that the costs of developing software in many respects so closely resemble the kind of research and experimental expenditures that fall within the purview of IRC section 174 of the Internal Revenue Code of 1954 as to warrant accounting treatment similar to that accorded such costs under that section.

Note that a deduction for computer software development costs under Rev. Proc. 69)21, does not constitute a deduction under IRC section 174. Software development costs do not qualify as qualified research expenses under IRC section 41, unless the taxpayer can prove that the activities meet the definition of the term "qualified research" under IRC section 41(d) and that the costs are in)house or contract research expenses within the meaning of IRC section 41(b).

Revenue Procedure 69)21 defines computer software to include:

All programs or routines used to cause a computer to perform a desired task or set of tasks, and the documentation required to describe and maintain those programs. Computer programs of all classes, for example, operating systems, executive systems, monitors, compilers and translators, assembly routines, and utility programs as well as application programs are included.

Case Example 4

Technical Writers

The corporation produces software packages for personal computers. The company has maintained a competitive advantage because their programs require less time to learn and are easy to execute.

The company has enjoyed a steadily improving financial position. With the increasing financial success, the company has continued to expend greater amounts on research each year. These credits are primarily derived from salaries of the employees involved in the development of software products.

In the beginning, almost all of the salary costs were associated with research. Several years later, only 50 percent of the total salaries was research related.

Generally, there are three jobs from which most of the research salary costs are derived. These jobs are software development engineer, software test engineer, and technical writer. Descriptions of the three jobs are as follows:

The **software development engineer** plans and designs computer software products. This engineer initiates the program design from an idea for an application, such as a business accounting sheet. Quite often a software development engineer will work on enhancing or creating new features for existing software programs.

The **software test engineer** tests and verifies the software products of the software development engineer. The test engineer develops test strategies, devises test plans, and implements test and verification procedures. Usually, the test engineer works alongside the development engineer to ensure that the software designed by the development engineer will work.

The **technical writer** may document the work of the development engineer and the test engineer. The technical writer also may work with the engineers to determine schedules, document coding and testing, and write department standards. The work of the technical writer also includes the writing of user manuals, on)line help statements in the software, and program tutorials.

Technical writers may perform both qualified research activities and activities unrelated to research. The technical writer performs qualified research activities when working with the software development engineer and testing engineer. The technical writer documents the engineer's work and sets up production schedules during the software development process.

However, after software development is complete, the technical writers perform activities unrelated to research in writing and editing the user manuals. The writing of the user manual occurs after the software program has been written, coded, and tested. The user manual is not part of the software program. The manual is a marketing tool.

Expenses which relate to a new or significantly improved software program are qualifying research expenses under IRC section 41. However, per Rev. Rul. 73)395, 1973)2 C.B. 87, costs incurred in the writing, editing, design, and art work directly attributable to the development of textbooks and visual aids were not deductible as research and development expenditures under IRC section 174.

Therefore, the technical writers did not perform qualified research activities when writing and editing user manuals. Taxpayer agreed to reduce the credit by the expenditures allocable to these activities.

Proposed Amendments of Treas. Reg. section 1.174)2

Proposed section 174 regulations issued in 1983 dealt primarily with computer software and stated that software development costs would constitute section 174 expenditures only if incurred for the development of "new or significantly improved" software, where the "operational feasibility of the project" was considered to be seriously in doubt. The 1983 proposed regulations were criticized and subsequently withdrawn.

Proposed section 174 regulations issued in 1989 introduced a "basic design specifications" concept and took a "time line" approach to determining whether expenditures qualify under section 174. The 1989 proposed regulations were superseded by the 1993 proposed regulations. Proposed section 174 regulations issued in 1993 retain the long)standing definition of research or experimental expenditures as expenditures incurred in connection with the taxpayer's trade or

business which represent research and development costs in the experimental or laboratory sense. Further, the 1993 proposed regulations clarify that expenditures represent research and development costs in the experimental or laboratory sense if the expenditures are for activities intended to discuss information that would eliminate uncertainty concerning the development or improvement of a product. Uncertainty exists if the information reasonably available to the taxpayers does not establish the capability or method for developing or improving the product.

FASB #86

FASB #86 was issued in 1985. It's purpose was to develop a consistent accounting for software development costs and thus enhance the comparability of financial statements among software companies. FASB #86 addresses the accounting for the costs of computer software to be sold, leased, or otherwise marketed as a separate product or as part of a product or process. It changed the predominant practice of expending all costs of developing and producing a computer software product. This statement specifies that costs incurred internally in creating a computer software product shall be charged to expense when incurred as research and development until technological feasibility has been established for the product.

Technological feasibility is established upon completion of a detail program design or, in its absence, completion of a working model (also called Beta Testing phase, which occurs when the taxpayer sends the computer software out to regular customers or universities without charge to check for bugs.) Alpha Testing is in)house testing of computer software. Thereafter all software production costs shall be capitalized and subsequently reported at the lower of unamortized cost or net realizable value. Capitalized costs are amortized based on current and future revenue for each product with an annual minimum equal to the straight line amortization over the remaining estimated economic life of the product. This Statement is applicable for financial statements beginning after December 15, 1985.

The Internal Revenue Service is currently raising the following question: Are the computer software development costs eligible for IRC section 41(d) after technological feasibility has been established?

Case Example 5

FASB #86 Capitalization

A start)up electronics company manufactures and sells a protocol converter. Sales were nominal in the first year. Per certified financial statements, in the second year:

Description	Amount
Sales	$4,000,000
Gross Profit	$2,500,000
Taxable Income	$100,000
R&D Expenses	$1,500,000

Capitalized Computer Software Development Costs	$150,000
(after Beta Testing): Wages for Software Engineers Amortization of Computer Software Development Costs	$50,000
Form 1120 Schedule M)1 showed two entries:	
Expenses recorded on books this year not deducted on this return	$50,000
Deductions in this tax return not charged against book income	$150,000
With a net effect of an increase to expenses of:	$100,000

Taxpayer claims the $150,000 of Capitalized Computer Software Development Costs becoming eligible for the credit.

The computer software development costs incurred after Beta Testing has begun may be deductible under IRC section 162 or Rev. Proc. 69)21. However, a deduction under Rev. Proc. 69)21 does not constitute a deduction under IRC section 174. Thus, software development costs do not qualify as qualified research expenses under IRC section 41, unless the taxpayer can prove that such costs meet the definition of research or experimental expenditures under IRC section 174.

Treas. Reg. section 1.174)2(a) defines research and experimental expenses as all experimental and laboratory costs incidental to the development of an experimental or pilot model.

IRC section 41(d)(1) defines qualified research as undertaken for the purpose of discovering information which is technological in nature and intended to be useful in the development of a new or improved business component of the taxpayer.

FASB #86 may provide an objective guideline to distinguish which costs of software development are qualified research expenditures and which costs are manufacturing costs. FASB #86 requires costs to be capitalized after a working model has been completed. In fact there has been criticism of FASB #86, pointing out that it allows for too much expensing. In a recent article entitled, "Why FASB 86 Needs Revision," ***Journal of Accountancy***, June 1989, the authors, Terry L. Fox and Reagan M. Ramsower took a survey of 500 software professionals to ascertain where the technological feasibility line should be drawn. The authors concluded that "FASB #86 required the expensing of far too many costs," primarily because the line demarcating technological feasibility was drawn in the wrong place.

Computer software development costs incurred after Beta Testing has begun are costs incurred after a working model has been produced. As such, they do not constitute research and experimental expenditures incurred to discover technological information and thus, are not includible as qualified research expenses per IRC section 41. Unagreed cases which address this issue are currently pending.

COMPUTATION OF IRC SECTIONS 174 AND 41

IRC section 280(C)(c)(3): Reduction of Credit Versus Expense

A research expenditure may be eligible for both the IRC section 174 deduction and IRC section 41 credit. The 174 deduction is reduced by 100 percent (for taxable years beginning after December 31, 1989) and 50 percent (for taxable years beginning after December 31, 1988, and before January 1, 1990) of the R&D credit taken.

However, IRC section 280(C)(c)(3) permits the taxpayer to elect a reduced credit instead of reducing the IRC section 174 deduction. For taxable years beginning after 1989, the election limits the taxpayer to a credit in the amount of:

1. The research credit without any reduction less
2. The product of that credit times the maximum corporate tax rate (currently 34 percent).

For taxable years beginning after December 31, 1988, and before January 1, 1990, the election limits the taxpayer to a credit in the amount of:

1. The research credit without any reduction less
2. One)half of the product of that credit times the maximum corporate tax rate (currently 34 percent).

Base Amount Computation

As originally enacted in 1981, the R&D credit was in section 44F of the Code. Thereafter, the Tax Reform Act of 1984 renumbered the section of various tax credits in the Code, placing the R&D credit in IRC section 30. Subsequently the 1986 Tax Reform Act moved the credit to section 41. The Revenue Reconciliation Act of 1989 made some basic changes to the way the R&D Credit is calculated.

Generally for taxable years beginning after 1989 a 20 percent credit for R&D expenditures is permitted to the extent qualified research expenditures for the current year exceed the taxpayer's "base amount" for that year.

The term "base amount" means the amount derived from multiplying (a) the fixed)base percentage by (b) the average annual "gross receipts" of the taxpayer for the 4 tax years before the credit year. But in no event may the base amount be less than 50 percent of the qualified research expenses for the credit year.

The "fixed)base percentage" for a taxpayer that isn't a startup company, is the percentage which the total qualified research expenses of the taxpayer for tax years beginning after 1983 and before 1989 is of the total gross receipts of the

taxpayer for such tax years.

Nevertheless, this percentage cannot exceed 16 percent. It should be noted that the period for determining the fixed)base percentage is not the same as the base period for determining the "average annual gross receipts."

For a "startup company," the Code had assigned a fixed)base percentage of 3 percent in making the above computation. A start)up company is defined as a taxpayer who did not have both gross receipts and qualified research expenses during each of at least 3 tax years beginning after 1983 and before 1989. Please note that the 1993 Act changed the computation for start)up companies.

For taxable years beginning before 1990, the above rules do not apply. Instead, for such years the research credit was computed on the excess of qualified research expenses for that year over "base period research expenses." "Base period research expenses," were the average qualified research expense paid or incurred for each year in the base period. The base period was the 3 taxable years immediately before the "determination year."

Case Example 6

Base Amount Computation

1. Base Amount Computation for taxable years beginning after 1989

   Corporation is under examination for 9012. Qualified Research Expenses for 9012 are 1,301 (in thousands).

In Thousands	8412	8512	8612	8712	8812	8912
Wages	370	400	500	600	750	1050
Supplies	40	40	30	50	55	82
Contract 65%	24	50	280	250	320	165
Total	434(a)	490(a)	810(a)	900(a)	1125(a)	1297
Gross Receipts	6280(b)	7570(b)	9210(b), (c)	8720(b), (c)	11210(b), (c)	17810(c)

Aggregate Qualified Research Expense
))))))))))))))))))))))))))))))))))))   = Fixed Base Percentage
Aggregate Gross Receipts
(1984)1988)

= Sum of (a)
Sum of (b)
= 3,759 = 9
42,990

Average Annual Gross Receipts
(1986)1989)   = Sum of (c) / 4 = 46,950 / 4 = 11738

R & D Base Amount	= Fixed Base Percentage X Average Annual Gross Receipts = 9% X 11,738 704

2. Base Amount Computation for taxable years ending before 1990

   Corporation is under examination for 8912.

In Thousands	1986	1987	1988	Total	Average
Wages	500	600	750	1850	617
Supplies	30	50	55	135	45
Contract @ 65%	280	250	320	850	283
					945

BASE PERIOD RESEARCH EXPENSES (In Thousands)	
Wages for Qualified Services	617
Cost of Supplies	45
65% on Contract Expenses	283
Total	945

Case Example 7

Effect of Prior Years on Base Amount Computation

Facts are identical to Case Example 3 (Wages Deferred in 401(k) Plan).

In addition, the base period amount includes wages deferred in the 401(k) plan. The following situation may occur:

Taxpayer contends that the base period research expenditures should be adjusted downward to reflect disallowance of 401(k) expenditures similar to those disallowed in the examination of the current year.

The IRS has taken the position that a "duty of consistency" may preclude a taxpayer from adjusting base period research expenditures in a "closed" year in order to reflect adjustments made by the IRS in an "open" year. An example of the application of the "duty of consistency" to base period expenses occurs in TAM 9040002. Whether the "duty of consistency" will apply to prevent a base period adjustment will depend on the specific facts of the case. Contact the National Office for advice.

Alternative Minimum Tax

Although Congress enacted IRC section 174 to stimulate research, it has also chosen to limit its benefit to taxpayers with too many tax preference items. Some electronic start)up companies that have a net profit immediately, may find their R&D credit limited by the AMT. A solution to the double taxation and limited credit has been to elect S)Corporation status.

The R&D credit (earned by the C)Corporation before converting to an S)Corporation) may not be carried over to the S)Corporation. However, if built)in gains at the time of the S)Corporation election are recognized in the next 10 years of the S)Corporation, it appears that the C)Corporation's R&D credit may be applied to the additional tax. R&D credit, like the general business credit, will carryback 3 preceding years and carry forward to each of the 15 years after the year of the credit.

RESEARCH AND DEVELOPMENT TAX SHELTERS

Per the Internal Revenue Manual, "Examination Tax Shelters Handbook," Chapter 900, "Research and Development Tax Shelters," R&D shelters are usually in the form of partnerships set up for the primary purpose of providing the capital necessary to accomplish a specific research project. Typically, an inventor without the capital to finance his or her research activities will take on the role of general partner. The general partner sells limited interests to outside investors. The limited partners furnish recourse notes addition to the initial cash contributions. Another organization then contracts with the partnership to develop the idea into a marketable product.

The IRM indicates that R&D partnerships may not qualify for IRC section 174 or IRC section 41 for two reasons:

1. The credit is available to only those taxpayers "carrying on a trade or business" as opposed to the standard of IRC Section 174 of "in connection with a trade or business." In ***Scoggins v. Commissioner,*** T.C. Memo 1991)263; CCH Dec. 47,400(M), certain relevant factors are enumerated: terms of the parties contractual agreements, lack of business activities of the partnership, and the lack of capacity and incentive of the partnership to use the product in its own trade or business.

2. The expense or credit is not intended "for research expenditures when the investor plans to transfer the research results in return for license or royalty payments." The "exclusiveness" of the license is a critical factor here.

AUDIT TECHNIQUES

General Techniques

You may wish to prepare a comparative analysis of wages, supplies, and contract research expenditures with the prior and subsequent years in preparation for the examination. If available during the examination, you may wish to perform a comparative analysis for the detailed calculation of wages, supplies, contract research expenditures and base period amounts with the prior and subsequent years work papers that the taxpayer used to calculate the credit.

To commence an examination of the credit for increasing research activities, secure an

organizational chart of the company. Ask the taxpayer to identify the divisions which are included in the credit for increasing research activities. The organizational chart should contain details as to supervisors and other employees within the division. In addition, have the taxpayer identify the different types of engineers and more specifically, by employee. Verify whether employees have responsibilities within more than one division.

Secure all work papers used to calculate the credit. Verify that the credit reconciles to the return. Wages, supplies, and contract expenses should each reconcile to the corresponding lines on the return. Determine how the taxpayer calculates its research credit. If by cost centers, departments and accounts taken from the taxpayer's year end adjusted trial balance: the work papers should show the general ledger accounts and amounts which reconcile to wages, supplies and contract expenses, respectively. Identify the functions of each R&D department.

Note whether an allocation is made for unqualified expenses that may exist within those accounts.

A department may even perform administrative functions which would not qualify for the credit.

If by projects, have the taxpayer identify the projects included within the research credit. Request the names of the employees involved in the projects. Also, request the project starting and completion dates to determine the percentage of employee's yearly wages applicable to the Research Credit.

Once these work papers are obtained it is possible to begin a more in)depth analysis of wages, supplies and contract expenses.

Wages

To commence an examination of wages which qualify for the increasing credit for research activities, secure the following:

1. A list of the individuals who performed qualifying services and the amount of their compensation.

2. Supporting documentation, such as Forms W)2 and 1099, to verify the compensation each individual received. Thus, the amount of their compensation divided by the Form W)2 compensation will enable the examiner to determine the percentage of the employee's wages applicable to the research credit. For example, reconcile amounts paid to highly compensated officer performing both qualified research work and non)research related work with wages included in the research credit.

3. A position description explaining the individual's duties. For example, reconcile amounts paid to technical writers with wages included in the research credit. A

portion of the technical writer's salary may be includible in the credit when he or she is working with the engineer to develop the software.

The following are more detailed examination steps for wages which may require managerial approval. These may be undertaken if warranted by the facts and circumstances of the issue. These steps are designed to clarify whether or to what extent the employees in a department are performing qualified services. Conduct an interview of the taxpayer's key scientists and engineers. Perhaps request the assistance of an IRS engineer for the interviews. Secure a copy of the company's official written job description to determine the specific duties and responsibilities of that particular job. Consider having an employee within a research and development department document his or her time for a 2-week period. The examiner may attempt to secure certain internal documents from the company such as written accounting and/or financial policy and procedures, quarterly or yearly reports submitted by Internal Audit to the Board of Directors or management, business plans within the department and personnel evaluations of employees with respect to research and development or the increasing credit for research activities.

Supplies

To commence an examination of supplies which qualify for the Credit for Increasing Research Activities, secure the following:

1. A list detailing each vendor and the dollar amount of supplies purchased by the company

2. Vendor Invoices (or access to vendor invoices) for purchases summarized at General Techniques above. Or, if the general ledger accounts numbers which are included in the Research Credit are known, the examiner can trace the entries through the books to the date and invoice number to identify the vendor invoices. Contract research expenditures (65 percent allowable) may be misclassified as supplies (100 percent allowable). Capitalized items or depreciation expense may be erroneously included in the credit as a supply expense. Thus, in sampling invoices, select supplies expenses with either significant dollar amounts or vendor's name with unusual nature.

Contract Research Expenditures

Finally, to examine Contract Research Expenditures which qualify for the increasing credit for research activities, secure the following:

1. A list detailing each vendor and the dollar amount of purchases.

2. Invoices from contractors to substantiate amounts listed in General Techniques above.

   Examine this documentation closely for amounts which are not qualified research

and experimental expenditures under IRC section 174 or qualified research under IRC section 41. Invoices with the summary of services rendered may provide this type of detailed information.

3. Any agreements, contracts, or correspondence describing the services to be rendered by contractors and the terms and conditions relating to the performance of these services.

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Chapter 3

DEFERRED REVENUE

INTRODUCTION

In the computer software and electronics manufacturing industries the deferral of revenue recognition for services or products has been a significant and recurring tax issue. Due to the frequency of occurrence and potentially large dollar adjustments, this chapter is dedicated to an analysis and discussion of deferred revenue issues.

This chapter of the audit techniques guide is divided into five sections:

1. Brief overview of the requirements for revenue recognition under generally accepted accounting principals (GAAP) as opposed to income tax law.

2. Situations giving rise to deferred revenue encountered during the study of the computer electronics industry.

3. Analysis of tax law and case examples pertaining to deferred revenue from service maintenance or licensing contracts

4. Analysis of tax law and case examples pertaining to deferred revenue from the sale or manufacture of products, applicable law and examples.

5. Audit techniques and types of records and documentation that may be available and useful in conducting an examination of this issue.

Since most corporations keep their books according to Generally Accepted Accounting Principals (GAAP) and then reconcile book income to tax income on the 1120 Schedule M, we will begin with a brief discussion of the differences in revenue recognition under GAAP and under tax law.

FINANCIAL ACCOUNTING (GAAP) VERSUS TAX ACCOUNTING

In ***Thor Power Tool Co.***, 439 U.S. 522(1979), the Supreme Court presents one of the most often cited and articulate descriptions of the differences between tax and financial accounting:

"The primary goal of financial accounting is to provide useful information to management, shareholders, creditors, and others properly interested; the major responsibility of the accountant is to protect these parties from being misled. The primary goal of the income tax system, in contrast, is the equitable collection of revenue; the major responsibility of the Internal Revenue Service is to protect the public fisc. Consistent with its goals and responsibilities, financial accounting has as its foundation the principle of conservatism, with its corollary that possible errors in measurement should be in the direction of understatement rather than overstatement of net income and net assets. In view of the Treasury's markedly different goals and responsibilities, understatement of income is not destined to be its guiding light. Given this diversity, even contrariety, of objectives, any presumptive equivalency between tax and financial accounting would be unacceptable."

"This difference in objectives is mirrored in numerous differences of treatment. Where the tax law requires that a deduction be deferred until all the events have occurred that will make it fixed and certain, * * * accounting principles typically require that a liability be accrued as soon as it can reasonably be estimated. Conversely, where the tax law requires that income be recognized currently under claim of right, ability to pay, and control rationales, accounting principles may defer accrual until a later year so that revenues and expenses may be better matched. Financial accounting, in short, is hospitable to estimates, probabilities, and reasonable certainties; the tax law, with its mandate to preserve the revenue, can give no quarter to uncertainty."

Difference Between GAAP and Tax Accounting

Primary differences between financial accounting income and taxable income are caused by one or more of the following:

1. Timing differences.

2. Carrybacks and carryforwards allowable for tax but not by GAAP.

3. Permanent differences between GAAP and tax.

In our discussion we are primarily concerned with timing differences in revenue recognition.

GAAP Rules for Revenue Recognition

Under GAAP rules revenue should be recognized when:

1. It is realized or realizable and

2. It has been earned.

The revenue realization principal is central to financial accounting theory and requires that revenue is only recognized when:

1. The earnings process is complete or virtually complete

2. Sufficient objective evidence exists as to the market value of an output, such as an exchange transaction which has taken place (usually a sale to a third party with the

receipt of cash or an obligation to pay).

An exchange transaction, for financial accounting purposes, is deemed to have occurred when rights and privileges have been exchanged even though no specific transaction has taken place. This is the case with accrued interest income earned ratably over a period of time, or with the percentage of completion method of accounting for long term contracts. The degree of certainty as to the ultimate realization of income also affects the timing of revenue recognition.

The application of the above criteria is complicated by the variety of products, contracts, agreements, and sales terms used in businesses. Consequently, the AICPA has issued a number of pronouncements to deal with particular situations where the method of revenue recognition was unclear or questionable. Other accounting practices were developed over time through standard industry practice.

Tax Rules for Revenue Recognition

Income tax law has generally followed financial accounting; IRC section 446 states that "taxable income shall be computed under the method of accounting on the basis of which the taxpayer regularly computes his income in keeping his books." The exception to this general rule is when, "in the Secretary's opinion, the method used does not clearly reflect income." This exception applies even though the taxpayer's method may conform to GAAP.

Over the years the Internal Revenue Service, Congress, and the courts have narrowed the field of acceptable accounting practices for reporting taxable revenues. For example, until the Tax Reform Act of 1986, income tax law allowed much wider use of the installment method of accounting for sales, the completed contract method of accounting for long term contracts, and the cash basis method of accounting.

Tax and financial accounting differ materially in the treatment of advances received for the sale of goods or performance of services. At this time it is important to point out that our discussion is limited to the accrual method of accounting, since the cash basis method of accounting is not acceptable for GAAP.

IRC section 451 states that "the amount of any item of income shall be included in the gross income for the taxable year in which received by the taxpayer, unless, under the method of accounting used in computing taxable income, such amount is to be properly accounted for as of a different period." This Code section would appear to allow liberal use of the accrual method of reporting revenue. However, in many cases the courts have ruled that revenue is taxable upon receipt, even though it would be deferred for financial reporting purposes.

The remainder of this chapter is concerned with the situations in which income tax law requires the reporting of revenues which are deferred for book purposes.

DEFERRED REVENUE SITUATIONS IN THE COMPUTER ELECTRONICS INDUSTRY

During the study of the industry deferred revenue was encountered in the following situations:

1. Manufacturing Contracts. Companies that manufacture large pieces of equipment may receive payments prior to the completion of a contract (called progress payments).

2. Software Engineering Contracts. A software engineering firm may specialize in designing and writing user specific software. The work is performed pursuant to a contract and the companies often bill and receive payments prior to the delivery of a completed package.

3. Distributor Agreements. The distributor usually has a right of return of unsold products and may be granted a price rebate by the manufacturer sometime after taking title to the product. GAAP requires the manufacturer to defer the revenue from the sale until the distributor has resold the product.

4. Service Maintenance Agreements. Both hardware and software manufacturers may enter into service maintenance agreements for their products. The service agreements may cover one or more years and fees are usually paid at the beginning of the agreement period. Revenue from these agreements is deferred and amortized over the period of the agreement.

5. Software Licensing Agreements. Whereas the situations listed above result in deferred book revenue, the revenue recognition rules for tax may differ. The following discussion of tax law and deferred revenue is divided into two sections: deferred revenue from service agreements and deferred revenue from the sale of manufactured goods.

DEFERRED REVENUE FROM SERVICE AGREEMENTS

Revenue Procedure 71)21

In the late 1960's, the Department of the Treasury officials committed themselves to finding a more consistent policy in the area of reporting advance payments than what had occurred previously. Controversy over the treatment of advances arose generally because of the fundamental difference in treatment of such items for financial and tax accounting purposes. With regard to services, accrual financial accounting dictates that advances not be recognized as income until the related services are performed. However, tax accounting requires that payments received for services to be performed in the future must be included in gross income in the taxable year of receipt. In an attempt to reduce the number of conflicts with taxpayers, the Service issued Revenue Procedure 71)21 which dealt with the deferral of advances for services.

Rev. Proc. 71)21 allows accrual method taxpayers, in certain specific, limited circumstances, to defer revenue recognition where the taxpayer receives advance payments for services to be rendered in the next succeeding taxable year.

Two important conditions need to be emphasized here:

First, Rev. Proc. 71)21 applies only to services, it does not apply to sales of goods.

Secondly, if the agreement provides that the services be performed over a period exceeding the year subsequent to the year of receipt, then the Rev. Proc. is not applicable and the entire advanced payment must be reported as income in the year received.

Another condition for deferral prevents a taxpayer from reporting an advance as income for financial statement purposes and then deferring it for tax. Specifically, the Rev. Proc. requires that the taxpayer's method for reporting advances for book purposes or for purposes of reports to shareholders or creditors cannot result in the item of prepaid income being reported in an earlier period than it is being reported for tax (Rev Proc. 71)21 3.11).

A significant exception to the one year deferral allowed by Rev. Proc. 71)21 concerns contingent service agreements. These agreements, often referred to as maintenance agreements, are commonly offered by manufacturers and retailers when selling their products. The term of these agreements vary in length but one year agreements are common. Under the general rule of Rev. Proc. 71)21, a prepayment on such a one year agreement would qualify for deferral. However, Rev. Proc. 71)21 sets an additional standard where the agreement requires a taxpayer to perform contingent services with respect to property that has been sold, leased, built, installed, or constructed by the taxpayer (or by a related person). Rev. Proc. 71)21 permits the one)year deferral, but only if, in the ordinary course of business, the taxpayer offers to sell, lease, build, install, or construct the property without a related contingent service agreement. The Rev. Proc. contains two examples demonstrating the application of this provision:

Situation 1

Contingent services under a maintenance contract where the taxpayer did not sell, lease, build, construct, or install the equipment that is the subject of the maintenance agreement. A television repair business received payments for one year contracts under which the taxpayer agreed to repair television sets if the set failed to function properly. The taxpayer did not sell, lease, build, install, or construct the television sets that were the subject of the maintenance contracts. Therefore, this taxpayer is entitled to report the advance over the period covered by the contract and will not be required to report the entire payment in the year of receipt.

Situation 2

Contingent services under a maintenance contract where the taxpayer did sell, lease, build, construct or install the equipment that is the subject of the maintenance agreement. The taxpayer received payments for one)year maintenance contracts with respect to television sets offered for sale. The maintenance contracts were optional and therefore the taxpayer did offer to sell the sets without maintenance agreements. Under these circumstances, the

payments can be reported over the year earned e.g., the taxpayer can defer the revenue.

Apparently, this requirement that the equipment be offered for sale without the maintenance agreement was included in the Rev. Proc. so that the stand alone value of the maintenance contract would be readily ascertainable. If the equipment was only offered for sale with the maintenance agreement, the taxpayer could artificially inflate the maintenance portion of the contract and thereby attain a larger income deferral.

The revenue procedure does not apply to (1) amounts received under a guaranty or warranty contract; (2) prepaid rent; or (3) prepaid interest.

Case Example 1

Deferred Revenue From Software Maintenance Contracts

The taxpayer is a developer and distributor of software products for IBM mainframe computer users. Software sales are actually a perpetual license to use the software. The taxpayer also provides maintenance services for its software products. These services include product updates, correction of malfunctions, and consulting. The maintenance agreements are very important to the customers. The taxpayer's products support IBM software; if IBM upgrades its software the taxpayer's product must be upgraded also. Therefore, customers almost always renew the maintenance contracts as long as they continue using the software.

When the company licenses its software products under a perpetual license, the first year of maintenance services is included at no additional charge. On the anniversary date of the sale and each subsequent year thereafter, the customer may elect to renew its maintenance agreement with the company. The customer is automatically mailed a bill for renewal 90 days prior to the anniversary date. The customer is expected to pay within 30 days after the anniversary date. Renewals are usually for one year periods. For books and for tax the taxpayer defers the maintenance contract income until the period covered by the maintenance contract. For example, if a maintenance contract is entered into in the last month of the tax year, one-twelfth of the income is recognized that year and the remaining eleven-twelfths of the income is deferred to the next year.

The taxpayer is also deferring revenue on the maintenance services provided in the first year. A charge for these services was not separately stated; in fact the taxpayer's Annual Report states that "the first year of maintenance services is included at no additional charge." The taxpayer assigns a value to these maintenance services and defers revenue in the same manner as with the maintenance contract renewals.

The taxpayer reports income and expenses on the accrual basis. The general rule is that an accrual basis taxpayer must include amounts received for services in income in the year of receipt, even if the services have not yet been performed. ***American Automobile Association v. United States***, 367 U.S. 687 (1961). In this case the taxpayer is deferring the maintenance services revenue pursuant to Rev. Proc. 71)21. This Rev. Proc. only applies to service contracts for property sold by the taxpayer if in the normal course of the taxpayer's business the buyer has the option of purchasing the property with or without the service contract.

The taxpayer claims that the deferral of maintenance contract income is allowed under Rev. Proc. 71)21. The taxpayer claims that the software may be sold with or without annual maintenance contracts. The taxpayer provided two instances in which they consider the software to be sold without a maintenance contract; (1) They have on at least one occasion sold to a foreign corporation the rights to an entire line of software. This sale did not include a maintenance contract. (2) The software is licensed for a specific CPU of the customer's. If

the customer upgrades their CPU they must purchase a new software product from the taxpayer. The customer's old maintenance contract remains in place when the new software is purchased so the taxpayer considers this the sale of software without a maintenance contract.

The Service's position is that the revenue applicable to the first year of maintenance services clearly doesn't qualify for deferral under the provisions of Rev. Proc. 71-21. The first year of maintenance service is included in all software licenses that are sold in the normal course of business. The two examples given by the taxpayer of software sales that do not include maintenance services (sale of product line and upgrade of CPU) cannot be considered to be sales in "the normal course of his business" as required in Rev. Proc. 71-21. Therefore, the revenue from the maintenance services incurred in the first year cannot be deferred. Under certain circumstances maintenance contracts may constitute sales or other dispositions within the meaning of Treas. Reg. section 1.457-5, and, therefore, advance payments may be eligible for deferral under this section.

The issue of deferral of revenue from the renewal of maintenance contracts is not as clear-cut. Until the Service position is clarified, contact the National Office for assistance.

Case Example 2

Deferred Revenue From Service Contracts

The taxpayer sells "turnkey systems" to the medical doctors' offices and to medical clinics. Per the AICPA in Statement of Position 91-1, a "turnkey system" is "an integrated group of hardware and software that is built, supplied, or installed complete and ready to operate." These systems usually require a significant amount of customization of software and are often, as in this case, designed with a specific user in mind.

Upon the sale of a system the buyer is required to execute a software contract maintenance agreement. The taxpayer does not sell the system without the agreement. This maintenance agreement lasts for one year and provides that the buyer will receive any updates or rewrites as well as telephonic support for any questions regarding the system and debugging should any problems arise. Is the taxpayer entitled to defer and bring into income ratably the sales price of the maintenance agreements over the life of the obligation?

Rev Proc. 71-21 section 3.07 would appear to require immediate recognition of the income related to the maintenance agreement since the taxpayers do not sell the system both with and without the agreement and the contract is contingent. In a recent Technical Advice Memorandum (LTR 9231002; discussed in next section), the taxpayers were allowed to defer the portion of the agreement related to rewrites, cyclicals, and updates, pursuant to the Treasury Regulations under section 1.451-5 rather than pursuant to the provisions of Rev. Proc. 71-21. It is important to note that the TAM involved updates to off-the-shelf software, not customized programming. Also, in the TAM the portion of the agreement representing telephonic support was not at issue and the TAM gives no guidance on how the portion representing telephonic support was valued and separate from the remaining elements.

Although it appears that telephonic support may be a negligible portion of the agreement, it can be most costly to the taxpayer. An article in the June 4, 1990, issue of ***Business Week*** entitled "Software: it's a new game" underlines this fact in a number of interviews with major software companies. The portion allocated to telephonic support and consulting should be commensurate with the cost of providing those services.

DEFERRED REVENUE FROM THE SALE OF GOODS

Advance Payments for Goods

IRC section 446(c) sets forth the permissible methods of accounting. One of these methods is the accrual method. Under an accrual method, income is generally recognized in the year in which:

1. All the events have occurred which fix the taxpayer's right to receive the income

2. The amount can be determined with reasonable accuracy.

As these rules indicate, the accrual method is concerned with the right to receive income. However, in certain situations, tax law requires income to be recognized upon receipt of payment even though all events that fix the right to receive the income have not occurred. Effectively, accrual method taxpayers can be treated as if they are on the cash basis. The question of how to treat a payment that precedes satisfaction of the all events test is addressed by IRC section 451.

Treasury Regulation Section 1.451)5

Treas. Reg. section 1.451)5 sets forth the circumstances under which the Treasury will permit a deferral in the recognition of income arising from an advance payment for goods. It should be noted that the regulation is limited to advances received for "goods" and does not generally apply to services. However, as discussed in more detail below, revenue allocable to services not to be performed as an integral part of the agreement but which is also less than 5 percent of the total contract price may be eligible for deferral under IRC section 451. For a discussion of income deferral on service contracts see Rev. Proc. 71)21.

The regulations at section 1.451)5 begin with a definition of "advance payment" stating that it is any amount received by a taxpayer using either the accrual or a long term method of accounting which is to be applied against an agreement for:

1. The sale or other disposition in a future taxable year of goods held by the taxpayer primarily for sale to customers in the ordinary course of business, or

2. For the building, installing, constructing or manufacturing by the taxpayer of items where the agreement is not completed within such taxable year.

The regulation cited above is referring to "goods" or items we normally think of as inventory. But this raises a question about advances received on agreements that include both "goods" and services. Treas. Reg. section 1.451)5(a)(3) discusses the treatment of advances to be applied against such a hybrid agreement. If a taxpayer receives an advance payment pursuant to an agreement that not only obligates the taxpayer to perform services that are integral to the sale, building, installing, construction, or manufacturing activity but also obligates him or her to perform

services that are non)integral; then the amount allocated to the non)integral services is not eligible for deferral. However, if the amount allocable to the non)integral services is less than 5 percent of the total contract price, such amount will be treated as allocable to the integral services and thereby qualifies for a deferral.

Assuming that the advance meets the criteria for deferral, the next question is: When should the advance be included in income? Treas. Reg. section 1.451)5(b)(1) specifies the following rules for reporting the advance:

1. In the taxable year of receipt or

2. Except as provided at Treas. Reg. section 1.451)5(c), which will be discussed below, the advance should be reported (a) In the taxable year in which it would be accruable under the taxpayer's method of accounting for tax purposes as long as this method does not result in a reporting time that is later than the period used for reporting to shareholders, partners, beneficiaries or other proprietors or to creditors.

Treasury Regulation section 1.451)5(b)(2), Example (2), present a situation of a manufacturer who uses the accrual method of accounting. In an interesting twist, this particular taxpayer accrues sales for report purposes when the goods are shipped and for tax purposes when the goods are delivered, that is, he is reporting revenue at a later date for tax than for report purposes. This method of reporting sales later for tax than for report purposes is indirectly sanctioned by IRC section 446 which requires that the tax accrual method conform with the method regularly employed in keeping the books. The example highlights the fact that "reports" and "books" are not synonymous terms. The example goes on to state that the taxpayer received an advance of $8,000 in 1974, against a contract of $20,000. The goods stipulated in the contract are shipped in December of 1974 but are not received by the customer until 1975. Although the taxpayer would normally report this sale in 1975 for tax purposes, since that is the year of delivery, the $8,000 advance must be reported in 1974 because that is the year the sale will be reported for financial statement purposes. The "financial statement" standard of Treas. Reg. section 1.451)5(b)(1)(ii)(a) accelerates the reporting to the earlier period which coincides with the taxpayer's financial statements. Note that the balance of the $20,000 contract price ($12,000) can be reported for tax in 1975 under the taxpayer's regular tax accrual method.

Under the general rule just described, it would be possible for a taxpayer to obtain a deferral of several years. However to limit the deferral period to some extent, Treas. Reg. section 1.451)5(c) make an exception for "inventoriable goods." This exception applies to payments which are both:

(1) Substantial

   (a) Substantial advance payments are defined as amounts which are equal to or exceed the total costs and expenditures reasonably estimated as includible in inventory with respect to such agreement.

(2) Received with respect to an agreement for the sale of goods which are properly includable in inventory.

(b) Inventory includes not only goods on hand that are of a kind similar to those specified in the agreement but also goods that are available through normal sources of supply.

If these two criteria are met, that is, the advance is substantial and inventoriable goods are involved, then the advance payment must be included by the last day of the second taxable year following the year in which such substantial advance is received. Therefore, notwithstanding the fact that the taxpayer would not recognize the sale for several years under its tax method of accounting, revenue recognition would be accelerated for an advance that was received in respect of an "inventoriable" item.

If a taxpayer wants to report in accordance with Treas. Regs. section 1.451)5, it must attach an information schedule to its return for each taxable year, specifying (1) the total amount of advance payments received in the current year; (2) the total amount of advance payments received in prior years and not included in income before the current year; and (3) the total amount of payments received in prior years and included in income for the current year. To adopt this method of reporting income, the taxpayer must also apply for a change in method of accounting in accordance with the normal rules governing application for changes in accounting method. If the taxpayer is already reporting in accordance with the regulatory method, it need not obtain the consent of the Commissioner to continue use of the method, but it must comply with all requirements associated with the use of that method. Treas. Reg. section 1.451)5(e).

Case Example 3

Deferral of Software Maintenance Contract Income Under IRC Section 451

In a 1992 technical advice memorandum (TAM), LTR 9231002 the IRS ruled that proceeds a computer software company received from its maintenance contracts are proceeds from the sale of goods and qualify for deferral under Treas. Reg. section 1.451)5.

The company, which uses the accrual method of accounting, has entered into perpetual term, nonexclusive licensing agreements relating to "off)the shelf" computer software that it internally develops. A purchaser of the software is entitled to one year of extended maintenance on the perpetual licensing of the underlying software. The customers may enter into contracts to renew the extended maintenance. Under an extended maintenance contract, the customer is entitled to receive, for no additional consideration, all future updates, cyclical releases, and rewrites of the underlying software.

The customers pay the entire amount for the extended maintenance contract in advance at the time they enter into the contract. For financial reporting purposes, the company recognizes revenue from extended maintenance contracts ratably over the term of the contracts, which vary from 1 to 5 years. The company contends it can similarly report this revenue for federal income tax purposes under the provisions of Treas. Reg. section 1.451)5.

In its ruling, the IRS noted that under the Uniform Commercial Code, off)the)shelf computer software is typically regarded as a "good." The Service reasoned that cyclicals, upgrades, and rewrites of the computer software, issued under the terms of the extended maintenance contracts, also constituted goods. Finally, the IRS said that transfer of the software to the customers in substance constitutes a sale (solely for purposes of determining whether payments received come within the meaning of the advance payment regulations) because the

amounts the company received under its perpetual term licenses would approximate the amount it could receive if it sold its software outright.

The Service next ruled that the company's extended maintenance contracts qualify as agreements under Treas. Reg. section 1.451)5 because the contracts obligate it to sell in the future goods it held primarily for sale to customers. It said the maintenance contracts have sufficient similarities to make an analogy to "output" contracts under section 2)306 of the UCC. (LTR 9231002).

IRC section 6110(j)(3) provides that technical advice memorandums cannot be used or cited as precedent. Yet, software firms and examiners will be looking to this TAM for guidance on the issue of deferral of service maintenance income. In using this TAM for guidance it is extremely important to note that this TAM addresses a very specific set of facts. The taxpayer in this case licenses off)the)shelf software. The TAM should not be applied to situations involving custom designed software. Its maintenance services include telephonic support and software updates. (The TAM stated that the portion of the maintenance contract income related to telephonic support is service income and is not covered by the TAM.) The taxpayer's maintenance services do not include customized programming, system application services, training, on site programming, hardware analysis, field engineering, system conversion, installation assistance, on site visitation, consulting with respect to technical or application software, or customer specific services. Other software manufacturers may include these services in their maintenance contracts. This TAM has only addressed the issue of deferring the portion of the maintenance service income applicable to the providing of updates, cyclical releases, and rewrites.

DISTRIBUTOR SALES

Another example of deferred revenue is sales to distributors. In the electronics industry sales are frequently made to distributors. The distributor usually has the right to return a product to the manufacturer. The distributor also may request a rebate on the sales price from the manufacturer if the distributor was unable to sell the product for a reasonable profit. Even if the manufacturers do not have a legal obligation to give the distributor a rebate, they may do so to maintain a good relationship with their distributor. So, in the sale to a distributor the price may not be fixed at the date of sale and there is a likelihood that the product will be returned. Therefore, GAAP many times does not allow manufacturers to recognize revenue on sales to distributors until the distributor has resold the product. There is no comparable rule in tax law. For tax purposes the revenue must be recognized when the sale is made to the distributor. ***J.J. Little & Ives Co. v. Commissioner***, 25 T.C.M. 372 (1966).

Since GAAP requires manufacturers to defer the recognition of revenue from sales to distributors and tax law requires this revenue to be currently recognized, deferred revenue from distributor sales should be a Schedule M item. Usually the taxpayer records on the Schedule M the difference between the beginning and year end deferred revenue account balances. If the taxpayer has distributor sales and does not have a Schedule M add)back, question the taxpayer about its revenue recognition policy.

Some taxpayers have authorized a price rebate to the distributor before the distributor has resold the product. They will then reduce the amount in the deferred revenue account, and reduce the Schedule M add)back, by this amount. Verify that these price rebates are not contingent before allowing a reduction in the Schedule M add)back. For example, if the taxpayer has reduced the sales price due to changes in market prices and has issued a sales credit memo or has reduced the accounts receivable, then this is not a contingent price rebate and the taxpayer is allowed to reduce its Schedule M add)back by this price rebate. On the other hand, if the taxpayer is recording price

rebates that are authorized but will be granted only if the distributor meets certain criteria, then this is a contingency and will not qualify as a reduction of deferred revenue to be recognized for tax purposes.

Distributor sales must be contrasted to sales on consignment. In a consignment sale the taxpayer recognizes income as the consignee sells the merchandise as its agent. The feature distinguishing distributor sales and consignment sales is the passage of title. If title has passed the sale has occurred and revenue must be recognized (for accrual taxpayers).

Case Example 4

Distributor Sales with Estimated Rebates

The taxpayer recognized deferred revenue on distributor sales on the tax return. However, the taxpayer reduced this revenue by an estimate of the rebate on sales price that may later occur. Using data from the general ledger, the taxpayer determined that they had previously rebated or discounted the sales price on distributors sales by 21 percent. So they reduced the deferred revenue to be recognized on the tax return by 21 percent.

This reduction of the recognized sales price based on an estimate of future discounts or rebates is similar to deducting a reserve for estimated bad debts or a reserve for estimated returns: deductions are not allowable for contingent events under the "all events" test of IRC section 461. Furthermore, this type of reduction in revenue is also not allowable because for tax years after December 31, 1991, economic performance for rebates does not occur until payment is made to the person to which the liability is owed pursuant to IRC section 461(h) and section 1.461)4(g)(3) of the Treasury Regulations.

This audit adjustment was discovered by inspecting the Schedule M work papers. The computation of the rebate estimate was on the work papers and the amount from the year end deferred revenue account was reduced by this estimate before it was entered on the return as a Schedule M add)back.

AUDIT TECHNIQUES

Pre)Audit Analysis

1. Review the balance sheet for any indication of a potential deferred revenue issue. First inspect the liability section of the balance sheet paying special attention to the statements detailing the line items. If the taxpayer is deferring revenue there will be a credit balance in some liability account. Most likely the deferred revenue will be included in "Other Current Liabilities," however, the taxpayer may include it in any other liability account such as "Other Liabilities."

2. Review Schedule M to see if the revenue that was deferred per the balance sheet was added to taxable income. The presence of deferred revenue on the balance sheet will not necessarily mean that there is an audit adjustment. The taxpayer may be properly deferring revenue under GAAP rules and reporting the revenue on the tax return.

If there is deferred revenue reported on the balance sheet and no add)back of income on the Schedule M, there may be an audit issue and the issue should be pursued in the

interview with the taxpayer.

Even if there is a Schedule M add)back for deferred revenue, still inspect the Schedule M work papers to ensure that the correct amount was included in income. For example, one taxpayer reported deferred revenue for tax purposes, but reduced this amount by an estimate of future discounts. Even though deferred revenue was reported there was an audit adjustment in the amount of the estimated future contingent rebates.

Interview

The initial interview should include questions about the firm's income recognition policy. For example:

- When is income recognized? When the product is shipped? When the customer is billed? When payment is received?
- Are customers ever billed before the product is shipped or the service is provided?
- Do customers ever pay in advance of receiving the product?
- How are advance payments from customers handled in the books?
- Are sales made to distributors? If so, when is income recognized on the sale?
- How are discounts or rebates to distributors handled? When are they deducted from gross receipts?
- Do you sell warranties or maintenance contracts? When is income recognized on these sales?
- Do you provide any services for which you charge customers? If so, when do you recognize the revenue from these services?

In the exam of a software company we found that the best source of information on the firm's policies on licenses, leases, maintenance contracts, and renewals was the company's Director of Contracts Administration. The best interview source will vary from taxpayer to taxpayer. The examiner should attempt to find the most knowledgeable person to interview.

Other Sources of Information

The taxpayer's revenue recognition policy will be clearly stated in the firm's annual reports, certified financial statements, and Securities and Exchange Commission (SEC) reports. These documents will not be available on every taxpayer. But if the taxpayer is publicly held, the examiner can obtain the annual reports and SEC reports covering several tax years. Reviewing these reports before the first appointment gives the

examiner a much greater understanding of the taxpayer and improves the quality of the initial interview. These reports are available in the San Jose Public Library, some in hard copy in the Silicon Valley Information Room; others on microfiche in the Reference section. The local library may also have a clipping file on local corporations that will include newspaper and magazine articles. A review of the clipping file will tell the examiner of any mergers, acquisitions, personnel changes, and stock offerings.

In one of the cases a software manufacturer had requested permission from National Office to change its method of income recognition on maintenance contracts. The examiner discovered that the statements made by the taxpayer in its request to National Office directly contradicted statements in the taxpayer's annual report. This illustrates the importance of reviewing all available sources of information about the taxpayer.

Books and Records

The best way to detect revenue that is improperly deferred is to scan the general ledger for deferral accounts. If the taxpayer's accounting system is accurate the deferred revenue will be in some liability account. The taxpayer may label these accounts with names that are meaningful only to employees of the accounting department so it may be necessary to ask the meaning of various accounts. The taxpayer should be asked to explain why any amounts in deferred revenue accounts should not be included in income in the year the deferral was accrued.

If the examiner determines that there may be a deferred revenue issue it is important to get copies of all appropriate documents, for example, sales contracts, distributor agreements, and licensing agreements issued in the year under audit. Later contracts may have changed. Ask the taxpayer for copies of actual signed contracts rather than blank contracts. Then you will be sure that these are the actual contracts used with customers.

Another good source of information on deferred revenue are the accountant's work papers including the Schedule M work papers. It is important to closely review these work papers to understand how the taxpayer computes the deferral amount.

Chapter 4

INTERNATIONAL ISSUES

INTRODUCTION

Many companies involved in the electronics industry engage in foreign transactions. Raw materials and components are frequently purchased from overseas. Also, some companies pay foreign subcontractors to assemble their products. These foreign entities may be unrelated to the U.S. taxpayer; in other cases they are subsidiaries of the U.S. taxpayer or are otherwise related to the U.S. taxpayer.

There are several reasons that foreign transactions are common in the electronics industry. For example, assembling and manufacturing may be cheaper abroad due to lower wages. Most of the electronics firms were started by engineers. Some of these engineers, now U.S. citizens, were born in other countries and have ties to businesses and people in their native countries, thus, making it easier to do business overseas. Also, there is a demand for U.S. high technology products overseas and U.S. corporations may set up foreign subsidiaries to handle sales transactions.

Many of the cases with foreign transactions may require the assistance of an international examiner. For example, consult with an international examiner where: the U.S. taxpayer has foreign transactions or operations; the U.S. taxpayer owns foreign corporations or entities; or the U.S. taxpayer is owned by a foreign person or foreign corporation. However, some issues involving foreign transactions may be worked by the examiner.

This chapter reviews the requirements for an International referral and then gives some examples of issues raised that involve foreign transactions.

INTERNATIONAL ENFORCEMENT PROGRAM REFERRAL CRITERIA

IRM 42(10) sets forth the requirements for when a return must be referred to an international examiner. However, an examiner may wish to refer the case even though not required to do so, such as when the case involves, for example, complex domestic IRC section 482 issues, foreign tax credit issues, controlled foreign corporations, or foreign currency provisions of the Code. International referrals are made on Form 2962. IRM 42(10)2 and 42(10)3 should be consulted for further detail as to when referral is advisable, or required.

If a return is referred and the International Group Manager decides that an international examiner will not participate in the examination, the examiner must still give consideration to international issues. The examiner will be provided the

telephone number and name of an international agent should any guidance be needed on how to proceed with the international issues. If significant issues are developed, the examiner can refer the case again.

CASE EXAMPLES

Wire Transfer)Lack of Documentation

In this case a review of the bank statements showed that the taxpayer had transferred $100,000 to an unrelated foreign corporation. The amount was expended in the Purchases account. When the examiner asked the taxpayer for documentation of the expense the taxpayer responded that there was no contract or other written agreement))the deal was arranged by telephone through a mutual acquaintance. The $100,000 was used by the foreign corporation to re)tool its factory so that it could manufacture the U.S. taxpayer's product. In exchange for the $100,000 the U.S. taxpayer was to receive the product at a price lower than the price it was currently paying. The taxpayer provided a statement from the CEO of the foreign corporation confirming the agreement terms. This statement was not prepared at the time the arrangement was entered into, but was prepared in response to the examiner's questions about the agreement.

This case illustrates two aspects of international transactions:

1. The examiner was told that, contrary to U.S. business practices, it is not unusual in this other country for deals such as this to be made based on verbal agreements. Although the examiner was skeptical, the terms of the verbal agreement as stated by the taxpayer were confirmed by the foreign entity and the examiner had no proof that these were not the agreed upon terms. The examiner verified that the taxpayer was receiving the products at a price substantially lower than the taxpayer had previously been paying. It is true that business customs in other countries may be different than in the United States. Examiners may find it useful to request Cash Transactions Report (CTR) on shareholders and corporations to see if they are engaging in any cash transactions.

2. There was no canceled check or entry in the Cash Disbursements Journal because the money was transferred by wire. The transaction was discovered in a review of the bank statements.

   In this case the examiner accepted the taxpayer's explanation of the agreement. However, the $100,000 was not deductible in the year it was paid. It was determined that it should be amortized over the period that the taxpayer was purchasing products from the foreign entity.

Expenses of Foreign Subsidiary Paid by U.S. Corporation

A corporation pays the salaries and travel expenses of its employees who go overseas

to work for the corporation's foreign subsidiaries. These expenses are deducted on the U.S. corporation's tax return. These expenses would be deductible to the U. S. corporation if the employees went overseas to protect the parent company's interests. However, in this case the employees were engineers and their expenses should be paid and deducted by the foreign subsidiary, not the U.S. corporation. See Rev. Rul. 84)68, 84)1 C.B. 31; ***Columbian Rope Co. v. Commissioner***, 42 T.C. 800(1964).

Expenses paid by U.S. corporations on behalf of their foreign subsidiaries are generally not deductible by the U.S. corporation. Other examples of expenses that are sometimes improperly deducted by U.S. corporations when paid on behalf of foreign subsidiaries include research and development expenses or manufacturing expenses. **This type of issue could be detected in the initial interview or by reviewing the employees' travel vouchers.**

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Glossary of Electronic Industry Terms

- A -

Access Time -- Time interval between the instant that a piece of information is sent to the memory device and the instant it returns.

Alignment -- The correct positioning of a mask or reticle relative to a wafer.

Ambient -- Room temperature.

Analog -- A system of measurement in which continuously varying value, as sound, temperature, etc., corresponds proportionally to another value, esp. a voltage; or by means of an analog computer.

Architecture -- The logic structure of an integrated circuit. The same architecture may be realized in different manufacturing processes.

- B -

Binary -- Numbering system using two as a base and requiring only two symbols: 0 and 1.

Bit -- Short for "Binary Digit," (Memory bit). The smallest piece of data a computer recognizes. Eight bits of data will store one character, for example a "b".

Burn In -- Testing of a chip or circuit board or other electronic device, for electrical or heat endurance.

Bus -- A circuit or path over which data is transmitted which provides a communication path between the devices.

Byte -- A number of binary bits, usually eight, that represents one numerical or alphabetic character.

- C -

CAD -- Computer Aided Design. Used by engineers to document/layout circuitry of integrated circuits.

CAE -- (Computer Aided Engineering) The hardware and software tools used by engineers to

design and verify new electronic systems.

Capacitance -- The property of a circuit element that permits it to store an electrical charge.

CAS - Column Address Strobe; the signal which tells the DRAM to accept the given address as a column address.

Cell -- A tiny area within the memory array that actually stores the bit in the form of an electrical charge.

Chip -- Another term for an integrated circuit (IC).

Cleanroom -- The super clean environment in which semiconductors are manufactured. The lower the rating, the cleaner the facility. These rooms typically have hundreds of thousands of particles less per cubic foot than the normal environment.

CMOS -- Complimentary Metal Oxide Semiconductor. A MOS device containing both N)channel and P)channel MOS active elements. One of two basic processes (MOS and Bipolar). An advanced IC manufacturing process technology characterized by high integration, low cost, low power, and high performance. CMOS is the preferred process for today's high density ICs.

Cold Testing -- Testing of a chip for cold temperature endurance.

CPU -- Central Processing Unit; the computer module in charge of fetching, decoding, and executing instructions.

- D -

Defect Density -- The number of random defects in the crystalline lattice of the silicon wafers used to manufacture integrated circuits.

Design Rules -- A set of rules establishing minimum dimensions of a transistor and minimum spacing between adjacent components.

Die -- A single rectangular piece of semiconductor material into which specific electrical circuits have been fabricated, refers to a semiconductor which has not yet been packaged.

Diffusion -- The standard procedure for doping silicon by heating wafers in a furnace from 400 to 1,150 degrees C in an ambient atmosphere of dopant atoms.

Digital -- Indicates the representation of data by a series of bits or discrete values, such as 0's and 1's.

DIP -- Dual In)Line Package. The package has leads (the metal "feet" on a packaged semiconductor chip) sticking out along two opposite edges.

Doping -- The introduction of an impurity into a semiconductor to modify its electrical properties.

DRAM -- Dynamic Random Access Memory. A type of memory component. "Dynamic" means the device's memory cells need to be periodically recharged. Information stored in the memory cells, as a positive or negative charge, is accessed randomly.

- E -

Etch -- Removal of specific material (such as portions of a given layer) through a chemical reaction.

- F -

FAB -- Abbreviation for Wafer Fabrication. Actual production of chip.

Fabless Semiconductor Companies -- A new class of semiconductor companies that design, test and sell ICs, but subcontract wafer manufacturing by forming alliances with silicon wafer manufacturers.

FAE -- (Field Applications Engineer) A field resident engineering expert who provides on)site technical support for customer applications.

Flat Pack -- A flat, rectangular IC package type with the necessary leads projecting from the sides of the package.

Foundry -- A semi)conductor chip production facility.

FPGA -- (Field Programmable Gate Arrays) A new class of integrated circuits pioneered by Xilinx for which the logic function is defined by the customer using Xilinx development system software AFTER the IC has been manufactured and delivered to the end user. Gate arrays are another type of IC whose logic is defined DURING the manufacturing process.

- G -

Gate -- The most basic logic element. Xilinx programmable logic products offer 500)10,000 usable gates per chip.

Geometries -- (Device) sizes within a device referring to the layout of components and interconnects on the die.

- I -

IC -- Integrated Circuit. A single piece of silicon on which thousands of transistors are combined. I.C.s are the major building blocks of modern electronic systems.

Ion Implant -- The process of introducing selected impurities into a semiconductor via high)voltage ion bombardment to achieve desired electrical properties in selected regions.

- K -

Kit -- Raw material components are sorted and boxed for assembly and completion of one finished product.

- L -

Lithography -- The transfer of a pattern or image from a medium to another, as from a mask to a wafer.

Logic Density -- The amount of logic, measured in gates, that may be integrated into a single IC.

Logic -- One of the three major classes of ICs in most electronic systems: microprocessors, memory and logic. Logic is used for data manipulation and control functions that require higher performance than a microprocessor can provide.

- M -

MAG -- Memory Applications Group.

Mask -- A chrome pattern on glass, representing a layer of circuitry in the photolithography process of wafer fabrication.

Megabyte -- One million binary pieces (bits) of information.

Memory -- One of three major classes of ICs used in most electronic systems. Stores data information.

Micron -- A unit of measure equivalent to one)millionth of a meter, synonymous with micrometer.

Microprocessor -- One the three main classes of ICs in most electronic systems. The information processing part of a computer that performs that basic arithmetic and logical functions of a computer central processing unit (CPU).

Mil -- One)thousandth of an inch, equal to 25.4 microns.

- O -

O.E.M. -- (Original Equipment Manufacturer) Producer supplier relationship whereby parts or components of a finished product are manufactured by a third party and labeled or identified as the O.E.M.'s product.

- P -

Parametric Date -- Measurements of the electrical characteristics of an integrated circuit.

Pellicularized -- Wafer mask designed with a protective sheath eliminates cleaning process and extends the life of the mask indefinitely. Smudging, scratches, dusk are avoided completely.

PC Board -- Printed circuit board. The board(s) used in a computer system onto which semiconductor components are connected.

Photolithography -- The process used to transfer a pattern or image from the masks on a wafer. The process uses a photosensitive emulsion and light.

PLCC -- Plastic leaded chip carrier. A type of semiconductor package.

Process Technology -- The `recipe' used to convert blank silicon wafers into finished wafers containing dozens to thousands of chips. These chips are tested and assembled into plastic or ceramic packages before final use.

- R -

Reticle -- A piece of glass with a chrome pattern for several die, used in the photolithography process.

- S -

Semiconductor -- A material which acts as conductor, such as a transistor, exploits these properties.

Shrink -- Reduction in die (chip) size.

Silicon -- A nonmetallic element that occurs in both crystalline and amorphous forms. The element (Si) silicon is used in the semiconductor industry as a substrate on which to build multiple layers of material. Silicon is grown from a crystal to form a cylinder shaped "log." Slicing the logs into sections 1/40 of an inch thick creates basic wafers.

SIMM -- Single In)line Memory Module. A high)density DRAM package alternative consisting of several plastic leaded chip carriers (PLCC) connected to a single printed circuit board (PC board). Installed in sockets, SIMMs provide upgrade capability for future generations of DRAMS without redesigning or replacing the PC board.

SIP -- Single In)line Package. This is a package with a straight row of leads along one edge. Same as SIMM except that it has pins and is installed directly into a PC board.

SOJ -- Small Outline J)bend. A package type used for surface mounting on PC Boards.

SRAM -- (Static Random Access Memory). An integrated circuit similar to a DRAM which requires no constant refreshing or recharging. It retains stored information as long as power is applied to the computer, hastening information retrieval process time. A high volume commodity memory product employing CMOS process technology.

Surface Mount -- A PC board assembly technique for high density manufacturing using TSOP, PLCC, and SOJ packages.

- V -

VRAM -- Video Random Access Memory. A branch of the DRAM family that uses two data ports to channel information reducing the relay time between accessed information and a video graphics display.

- W -

Wafer -- A thin disk (or slice) of silicon on which many separate chips can be fabricated and then cut into individual die.

- Y -

Yield -- Number of acceptable units (die) produced on each wafer compared to the maximum possible.

- Z -

ZIP -- Zigzag In)line Package. A type of semiconductor package that stands on its side and has zig)zagged leads along one side.