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Financial Statements  
and  
Business Calculations

for  
Commercial Fishermen

A Do-It-Yourself Guide

Craig S. Wiese

Marine Advisory Bulletin No. 14

University of Alaska

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NARRAGANSETT, RI 02882

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INTRODUCTION.....	1	
PART I	EVALUATION OF PRESENT AND PAST PERFORMANCE	
	Statement of Income and Expenses (and Cash Balance).....	5
	Opportunity Costs and Return to Labor and Investment.....	15
	Statement of Assets and Liabilities (Balance Sheet).....	21
PART II	PLANNING AND BUDGETING FOR FUTURE OPERATIONS	
	Market Analysis.....	35
	Pro forma Income Statement and Cash Balance...	39
	Income Calculation.....	44
	Expense Calculation.....	55
	Break-Even Analysis.....	67
	Alternative Use Comparison.....	75
	Cash Flow Statement.....	81
APPENDIXES		
1.	Depreciation.....	87
2.	Mortgage Payment Table.....	93

# Introduction

Am I making money fishing? Is it enough? Could I be making more in another fishery? Would I be making more in another occupation? What price should I get for my fish to make ends meet, or how much do I have to catch at a given price to pay bills and live comfortably?

This publication is designed to help answer these questions and others that characterize the success of a fishing operation. It is a reference manual for the fisherman, lender, investor, or accountant who needs practical assistance in completing standard financial statements and business calculations as they apply to commercial fishing. Worksheets are the reason for this book. The worksheets will lead you step-by-step through fishing income and expense projections, profit and loss statements, balance sheets, break-even analysis, cash flow statements, returns to labor and investment, and other financial calculations which are useful in making business decisions. Anyone who can add, subtract, multiply, and divide can do all of the calculations and prepare the financial statements discussed.

Since the worksheets are largely self-explanatory, the text is brief. It lists reasons why each financial statement or calculation is useful, defines terms, and explains certain points that facilitate completion of the worksheets.



John Doyle



Craig Wiese



There is probably no situation that requires preparation of all of the financial statements and calculations illustrated. A good plan of attack is to skim through the entire publication to see how the statements and calculations relate to one another.

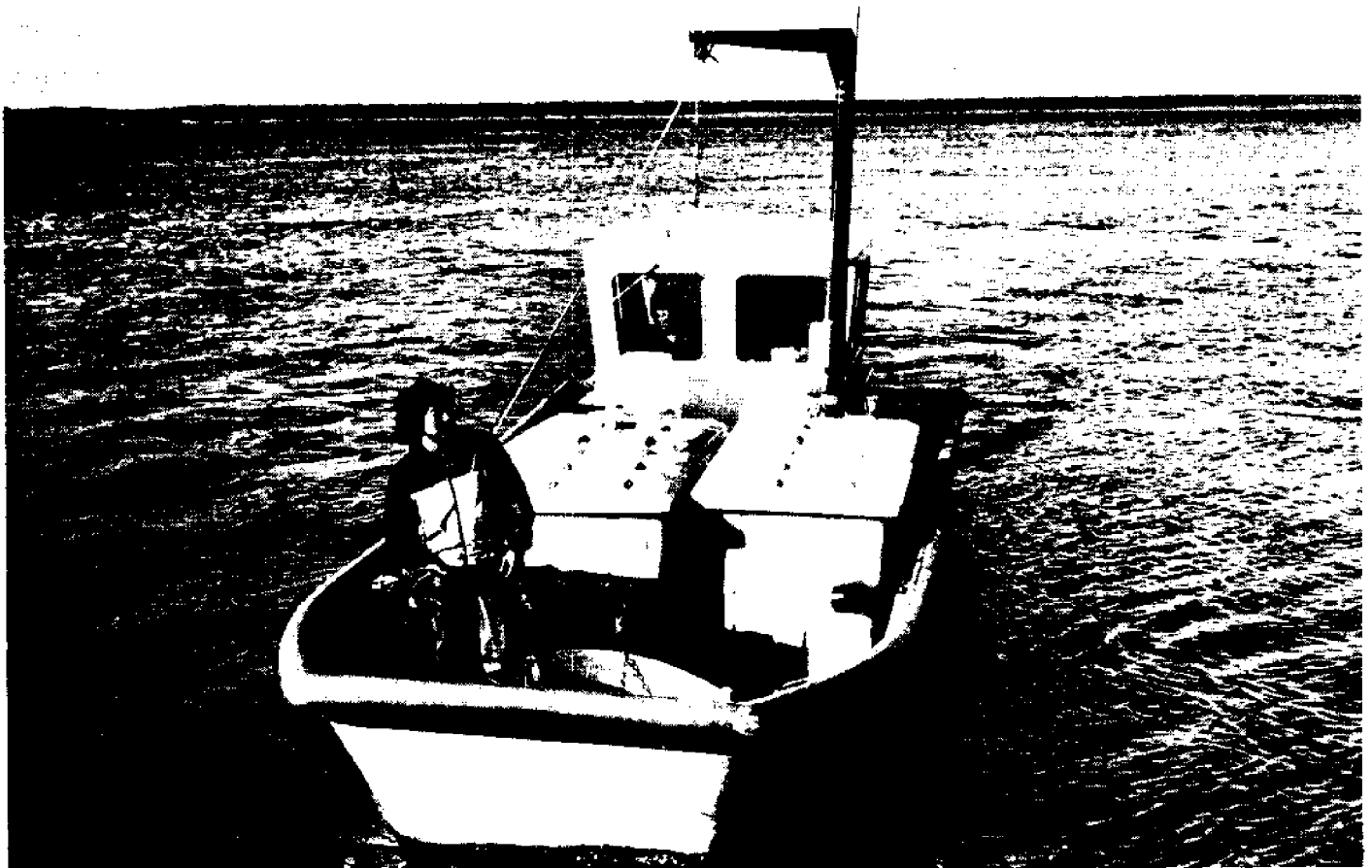
(Notice how often you see a list of income and expenses or the need for the net profit figure.) Then return to those sections that show how to prepare the statements or calculations you need.

If your business analysis skills are at the beginning level, start with the income and expense statement. It is the foundation for most of the financial statements and a

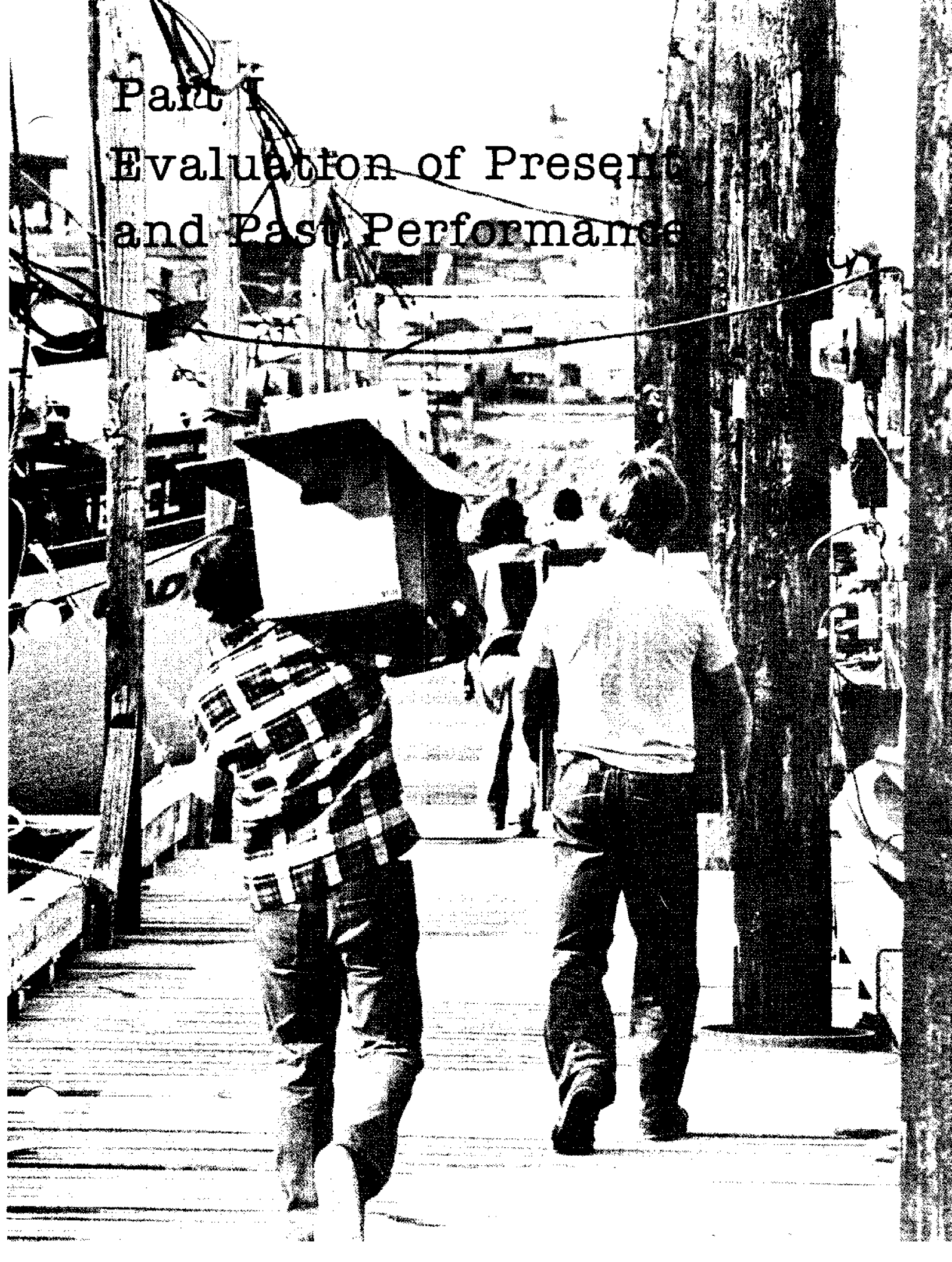
prerequisite for many of the financial analysis calculations. Make up your own list of income and expense items if the lists used in the worksheets do not fit your fishing situation. Once you have mastered the income and expense statement and the income and expense items which are appropriate for your fishery, you will have few problems with the other business analysis procedures.

Notice that the workbook is divided into two parts. The first will help you analyze current and past operations, while the second will help you assess the feasibility and profitability of future business plans.

Don Kramer



# Part I Evaluation of Present and Past Performance







# Statement of Income and Expenses (and Cash Balance)



Don Kramer



## Reasons Needed

- This is the only statement that summarizes income and expenses. It shows total revenues and all expenses, including depreciation of capital equipment. When expenses are deducted from revenues, net profit is determined.
- It is a basic financial statement required for all loan applications.
- It contains information needed to complete federal tax form Schedule C "Profit and Loss From Business or Profession."
- The income statement can be adjusted to show net cash balance at the end of an accounting period in addition to the standard net profit used for tax purposes.

## Definitions

Refer to Worksheet 1 (Page 11) as you read.

- Variable Costs. Expenses which change with an increase or decrease in operations or catch. Fuel costs and crewshare expenses are examples.
- Fixed Costs. Expenses which are relatively constant regardless of the amount of time spent fishing. Insurance, moorage fees, interest payments, and depreciation typify fixed costs.

- Capital Equipment.  
Equipment which has an expected useful life of one year or longer. Vessels, electronics, deck gear, most fishing gear, and warehouses are examples.

### Explanation

- The source materials for preparing an income statement are the expense receipts and income records which are accumulated and filed during the course of each season. If they are then recorded in a bookkeeping ledger under major income and expense categories, the job of preparing an income statement is made simple. A recordkeeping manual published by the University of Washington Sea Grant program, written by C. A. Granger and entitled "Fisherman's Recordkeeping & Management Manual" will be helpful to those who have not already established a bookkeeping and catch record system. For a copy write: Washington Sea Grant Communications, University of Washington HG-30, Seattle, Washington 98195.
- To begin an income statement, the totals for each income category (e.g., salmon, tuna, crab, groundfish, equipment sales, investments), are listed at the top of the statement. Variable expenses are listed next, and fixed expenses

follow. Net profit is the difference between total income and total expenses. The net profit figure usually completes an income statement. However, in the statement used in this publication, "net cash balance" is calculated in addition to net profit.

- Cash balance is not normally a feature of the income statement, but is easy to calculate and is quite useful. It reflects actual out-of-pocket expenditures made during the season. It does not include depreciation which is not an out-of-pocket expense. Cash balance shows real cash on hand after expenses are paid.

Net profit like cash balance is a combination of revenues and expenses. But it includes depreciation as a capital expense.

Depreciation is an accounting convention that reflects wear, tear, and obsolescence of capital equipment, allowing the owner to subtract this loss in value as a business expense. A "useful life" is determined for each piece of equipment (see Appendix I for more on depreciation methods),

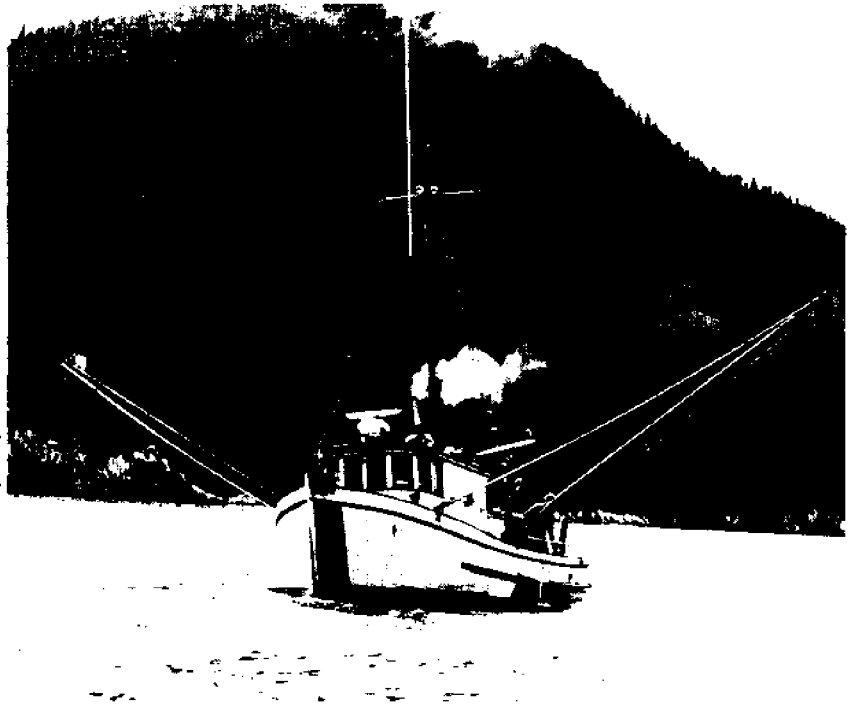
and the cost of the equipment is divided over that lifetime. Each year, a portion of the cost is deducted as a business expense.

The depreciation deduction each year of this "useful life" has no direct relationship to how quickly or slowly equipment is actually paid for. For example, you purchase a \$5,000 radar and pay cash. Your checking account balance (cash balance) is reduced by \$5,000. You cannot deduct the full amount as a business expense for taxes but you can take a portion of the cost as a deduction, reflecting wear and obsolescence for the equipment. If the radar falls into the accelerated cost recovery system (an IRS depreciation method begun in 1981) category of equipment having a useful life of five years (most likely it will) the IRS allows you to deduct 15 percent of the \$5,000 (\$750) the first year. You may deduct 22, 21, 21 and 21 percent respectively in each of the remaining four years. At the end of the first year your bank account will show a deduction of \$5,000 for purchase of the radar but your net profit for tax reporting purposes will show a depreciation deduction of only \$750 for the same purchase. Net profit consequently will be

\$4,250 greater than your actual cash balance. In the subsequent four years, as you take deductions for depreciation on that radar, your net profit for tax reporting purposes will be less than your cash balance. You continue to take deductions even though the equipment is already paid for.

When you think about all of the depreciable equipment fishermen own (boats, engines, electronics, fishing gear, deck gear), and consider that some items are paid off in less time than they are depreciated and some equipment loans are repaid over a longer period of time, it is understandable that net profit is often considerably different from cash balance.

M.W. Williams (NPS)



• Determining income is not always a straightforward matter either. When a vessel or other capital asset is sold, only net income from the sale is recognized in the profit calculation. Consequently, the original purchase price plus the cost of capital improvements must be deducted from the selling price to arrive at net income from the sale. The same applies to the sale of investments such as real estate, securities, and so on. The purchase price plus buying,

selling, and handling fees must be deducted from the selling price to determine net income. There is a further complication. As discussed above, income tax laws allow capital assets to be "depreciated" to compensate for wear and obsolescence. If a used asset is sold for more than its current depreciated value, the depreciation already claimed must be "recaptured" and becomes part of the net income from the sale.

	SELLING PRICE	\$30,000
	LESS: PURCHASE PRICE	-\$50,000
	LESS: CAPITAL IMPROVEMENTS	-10,000
	PLUS: DEPRECIATION RECAPTURE	<u>40,000</u>
	EQUALS: NET INCOME FROM SALE	\$10,000

The net profit calculation then recognizes the \$10,000 in revenue from sale of the vessel, while the cash balance calculation recognizes the entire \$30,000 selling price.

To summarize, net profit includes depreciation as a capital expense and net income from the sale of an asset as a source of revenue. Cash balance on the other hand recognizes only real expenditures for capital assets as capital expenses, including the principal portion of equipment loans, and recognizes the entire proceeds from a sale as revenue.

- The list of income and expense items in the income statement (Worksheet 1) is general and may not be appropriate for your particular fishery. Change the list to suit your fishery and your preference for grouping or detailing expenses.
- If you participate in more than one fishery during a year, as do most fishermen, it is a good idea to complete separate income and expense calculations for each fishery. A separate income statement per fishery will show which portions of your annual operation are profitable and which are losers.

Craig Wiese



- If you do more than one income summary, there are several ways to divide the cost of fixed expenses such as moorage, hull insurance, depreciation, and other expenses not directly attributable to operations among the fisheries in which you participate. Perhaps the most straightforward is to allocate the expense in proportion to the amount of time spent in each fishery.

For example, assume that you spend three months preparing for and fishing in the salmon seine fishery; four months crabbing, one month seining herring, and that for four months, the boat is idle. The vessel then operates eight months. During that time,  $\frac{3}{8}$  or 38 percent, of the time is spent in the salmon seine fishery;  $\frac{4}{8}$ , 50 percent, is spent crabbing; and  $\frac{1}{8}$ , 12 percent, is spent herring seining. Fixed costs can then be allocated to each fishery in the same proportions; 38 percent for salmon seining, 50 percent for crabbing, and 12 percent for herring.

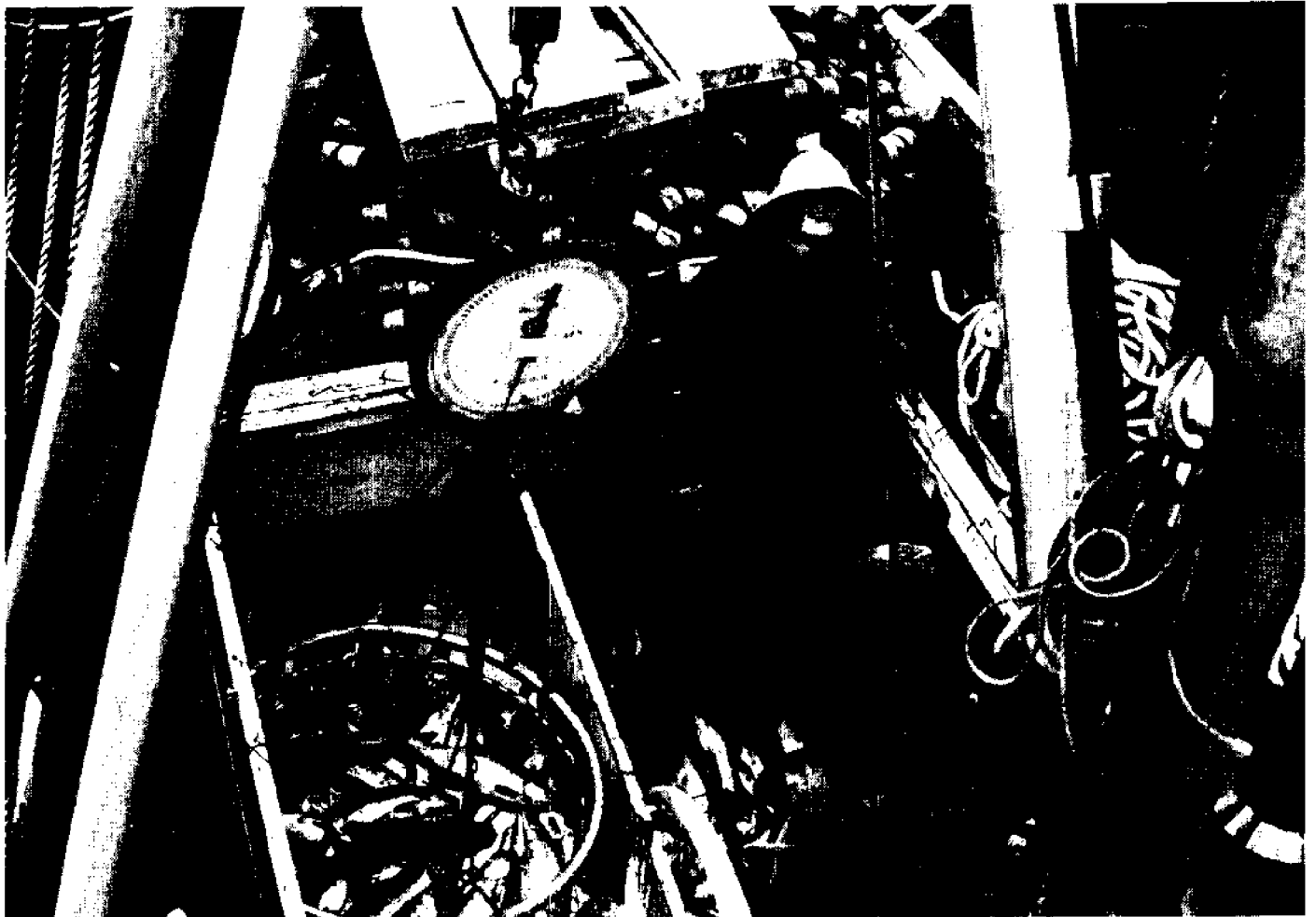


- Worksheet 1 is an expanded version of an income statement. It lists the different sources of income and the adjustments that have to be made to derive net income from the sale of capital assets. It also shows how to make these adjustments in reverse when calculating cash balance.



- Worksheet 2 illustrates a format for a standard income statement with cash balance added. Remember, if you are asked to prepare an income statement, cash balance is not a conventional feature. But, as explained earlier it is a more meaningful figure than net profit to a sole proprietor, a lender, or a potential buyer of a business, because it more accurately reflects ability to meet living expense needs, and purchase additional assets.

Gary Taylor



## Income Statement

## INCOME

ENTER	Gross sales from fishing	\$ _____
+	Vessel or equipment lease/rent	_____
+	Sale of vessel or equipment	_____
+	Sale of investments	_____
+	Interest or dividends	_____
+	Other income	_____
+	*Total depreciation on sold vessel or equip.	_____
-	*Cost of sold vessel or equipment	( _____ )
-	*Purchase price of investments	( _____ )
=	TOTAL INCOME (for tax reporting)	\$ _____

## VARIABLE EXPENSES

ENTER	Fuel	\$ _____
+	Provisions	_____
+	Gear maintenance	_____
+	Vessel maintenance	_____
+	Ice	_____
+	Bait	_____
+	Supplies & equipment	_____
+	Assessment taxes	_____
+	Travel & entertainment	_____
+	Vehicle	_____
+	Crewshare	_____
+	Other	_____
=	TOTAL VARIABLE EXPENSES	\$ _____

## FIXED EXPENSES

ENTER	Insurance	\$ _____
+	Moorage	_____
+	Warehouse/storage	_____
+	Business administration	_____
+	Professional fees (accounting, legal, etc.)	_____
+	Dues/licenses	_____
+	Interest payments on business loans	_____
+	Depreciation	_____
+	Other	_____
=	TOTAL FIXED EXPENSES	\$ _____

\*These are adjustments to income that must be made so that net profit will be correct for income tax reporting purposes.

## TOTAL EXPENSES

ENTER	Variable expenses	\$ _____	
+	Fixed expenses	_____	
=	TOTAL EXPENSES		\$ _____

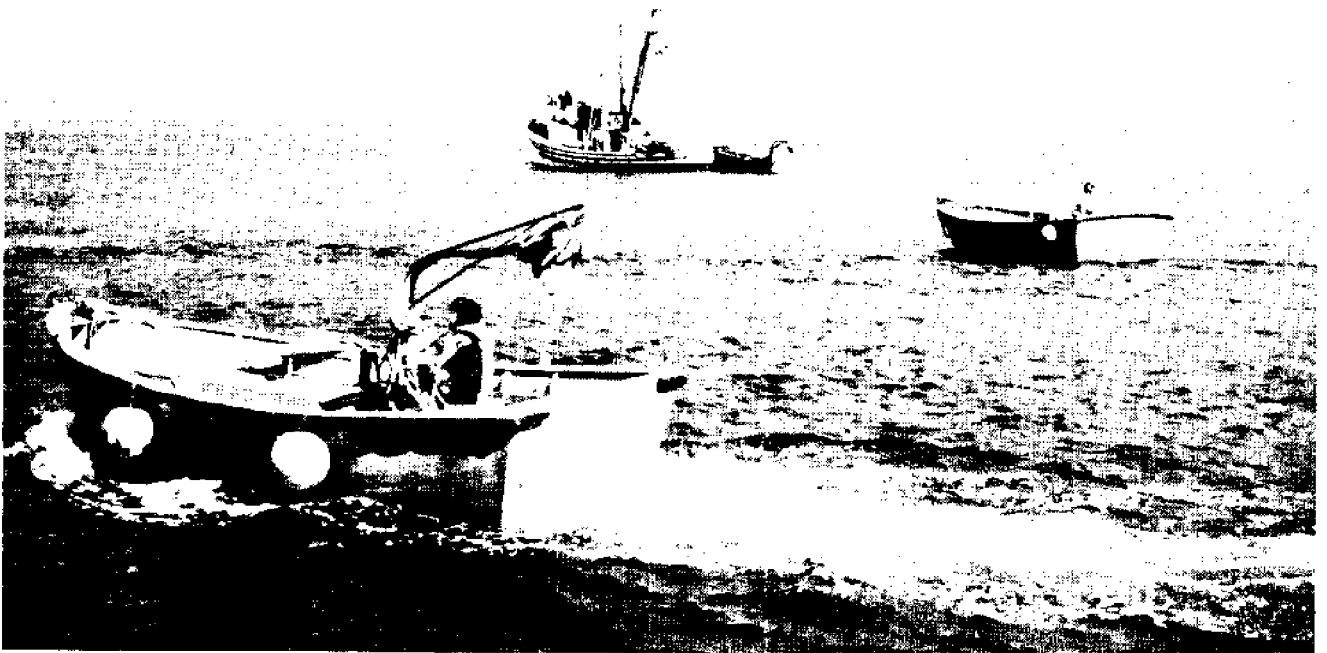
## NET PROFIT (for tax reporting)

ENTER	Total income	\$ _____
-	Total expenses	_____
=	NET PROFIT BEFORE TAXES	\$ _____

## \*NET CASH BALANCE BEFORE TAXES

ENTER	Net profit before taxes	\$ _____
+	Depreciation (from fixed expense section)	_____
-	Principal payments on business loans	( _____ )
-	Down payment on capital assets purchased	( _____ )
+	Cost of vessel or equipment sold	_____
-	Total depreciation on vessel or equip. sold	( _____ )
+	Purchase cost of investments	_____
=	NET CASH BALANCE	\$ _____

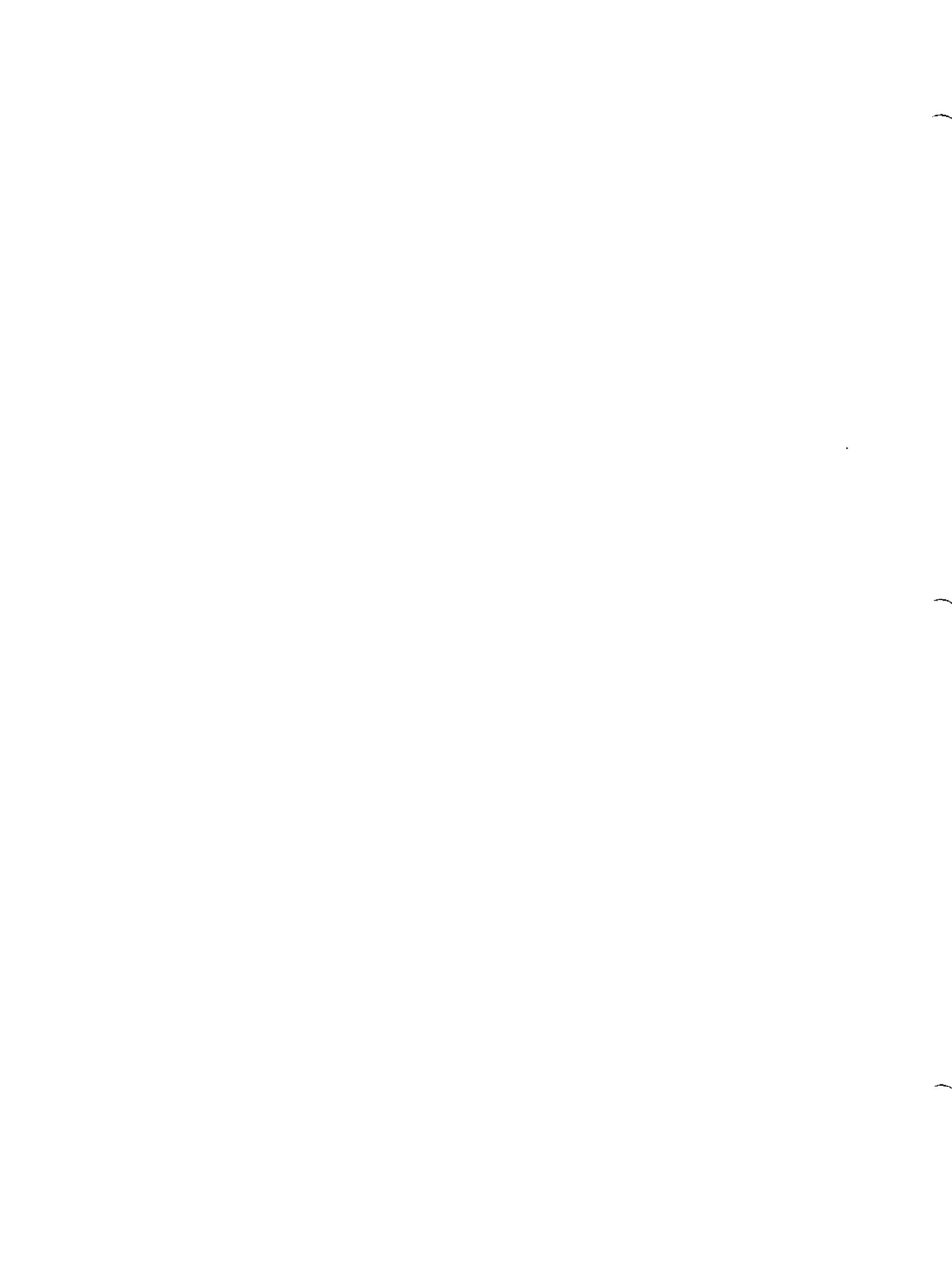
Chris Riley





## Income Statement and Cash Balance

GROSS INCOME		\$ _____
VARIABLE EXPENSES		
Fuel and Oil	_____	
Provisions	_____	
Gear maintenance	_____	
Vessel maintenance	_____	
Ice	_____	
Bait	_____	
Supplies and equipment	_____	
Taxes, fees, and assessments	_____	
Transportation	_____	
Crewshare	_____	
Other	_____	\$ _____
GROSS INCOME FROM OPERATIONS		\$ _____
FIXED EXPENSES		
Insurance	_____	
Moorage and haul-out	_____	
Warehouse and storage	_____	
Vehicle	_____	
Business administration	_____	
Professional fees	_____	
Travel and entertainment	_____	
Interest	_____	
Depreciation	_____	
Dues and licenses	_____	
Other	_____	\$ _____
NET INCOME		\$ _____
CASH BALANCE		
Net income		\$ _____
Depreciation		_____
Principal	_____	
CASH BALANCE		\$ _____



# Opportunity Costs and Returns to Labor and Investment

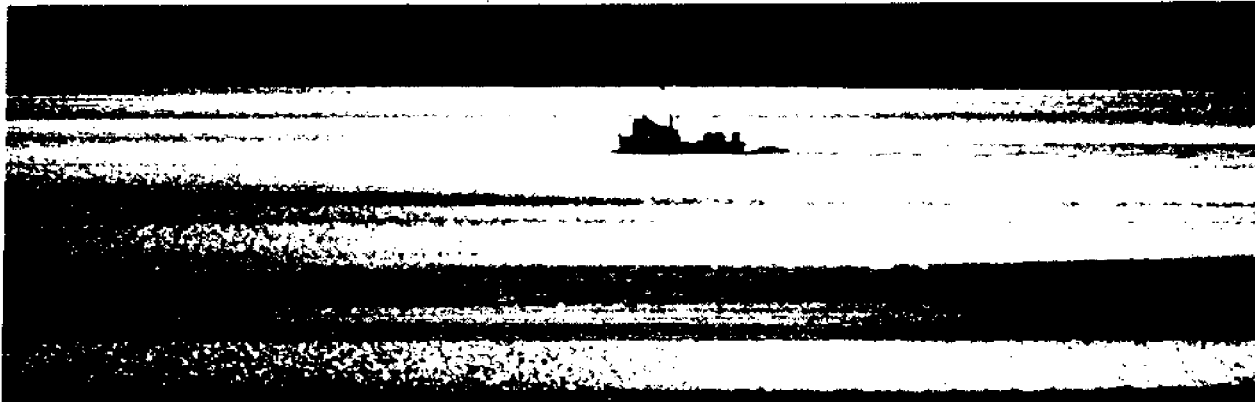
## Reasons Needed

- Returns are calculated to help determine if your investment in fishing is the best use of your money and time. When measured in terms of "labor" and "investment" as defined in this section, returns indicate whether net profit from fishing is good, bad or mediocre compared with your ability to gain income from another line of work and other investments. You might find that your skills would be more profitable if applied elsewhere.

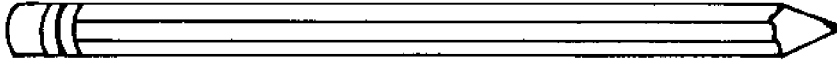


John Doyle

If you're not interested in considering any other occupation, skip this section and use the "alternative use comparison" or the "pro forma profit and loss statement" in Part II of this publication. With either of these, you will be able to compare income and expenses from your present fisheries with alternative fisheries, fishing methods, charters, or other uses of your vessel.



Craig Wiese



### Definitions

Refer to Worksheet 3 as you read.

- Opportunity cost of labor. This figure reflects income you could derive from a trade or profession other than fishing, preferably one comparable to your skills and interests. Many fishermen have marketable skills in mechanics, welding, carpentry and other crafts. Still others may qualify for work with state or federal fish and wildlife agencies.
- Opportunity cost of investment. The opportunity cost of investment is the annual return on a sum of money equivalent to the amount you have personally invested in major fishing assets, whether those assets are depreciable items such as a vessel, gear, or warehouse, or nondepreciables like land or

fishing permits. Borrowed funds should not be included. Choose a rate of return that can be gained from such safe investments as certificates of deposit, money market funds, or bonds. If you know you could do better investing in real estate or some other higher risk venture, choose that rate for comparison.

- Return to labor. Notice in Worksheet 3 that return to labor is not simply net fishing profit, but profit minus the opportunity cost of investment. Hypothetical investment earnings are deducted from net fishing profits to give an indication of what part of your fishing profit is attributable to your labor and experience alone.

- Return on investment (ROI). This dollar amount is what remains of net profit after a hypothetical salary has been deducted; a salary that represents what you could have earned in another occupation. When this remainder is divided by equity investment (defined in the following Explanation section), a percentage ROI is the result. Return on investment is commonly expressed as a percentage so that it can be compared with interest rates, bond yields, rates

Doug Coughenower



of return on stocks, real estate, and other investments.

- If your return on investment is below your desired rate of return (the rate you could obtain from another investment), ask if your vessel is appreciating in value rather than depreciating. Many well-maintained steel, aluminum, and fiberglass vessels are actually increasing in value. If yours is one of them, add the rate of appreciation to your percentage ROI. Does it meet expectations this time?

#### Explanation

Opportunity cost, as it applies to fishermen, refers to income that is given up in order to fish. There are two types of opportunity costs as outlined in the definitions. The first is your potential income from another occupation in which you are skilled. This is termed "opportunity cost of labor." The second is potential earnings that you could achieve on an amount of money equal to that you have tied up in boats, gear, permits, and equipment. This is your "opportunity cost of investment."



Think of the opportunity cost concept as a "what if" exercise. What if I sold out my boat, gear, and permit, paid off my business debts, transferred the remaining money into certificates of deposit, treasury bills, real estate, or other investments and took a regular job? Would my income from other investments and another job be greater than my net fishing income? The answer to this question can be determined by calculating "return to labor" and "return on investment" from fishing.

These calculations start with net profit from fishing (from an income statement or pro forma profit and loss statement), and make adjustments for the opportunity costs of labor and investment. Worksheet 3 illustrates how to do the calculations and how opportunity costs and returns to labor and

investment are tied together. One technical note to keep in mind is that the investment referred to in "opportunity cost of investment" is equity investment: the amount of personal money invested in your business. It does not include money that has been borrowed because the net profit calculation contained in the income statement includes a deduction for interest payments on business loans. It is therefore unnecessary to account for a return on borrowed funds to compensate for loan interest.

Now proceed through Worksheet 3, and compare the return to labor, and return on investment from fishing with the opportunity cost of labor and the opportunity cost of investment. Remember, these are your potential incomes if you cash out of fishing and enter a different occupation. Are you better off financially fishing or in another occupation?

## Returns to Labor and Investment

OPPORTUNITY COST OF LABOR

ENTER Expected income from another trade or profession \$ \_\_\_\_\_

OPPORTUNITY COST OF INVESTMENT

ENTER Equity investment \$ \_\_\_\_\_

x Reasonable rate of return (percent) \_\_\_\_\_ %

= OPPORTUNITY COST OF INVESTMENT \$ \_\_\_\_\_

RETURN TO LABOR

ENTER Net profit from fishing \$ \_\_\_\_\_

- Opportunity cost of investment \_\_\_\_\_

= Return to labor \$ \_\_\_\_\_

RETURN ON INVESTMENT

ENTER Net profit \$ \_\_\_\_\_

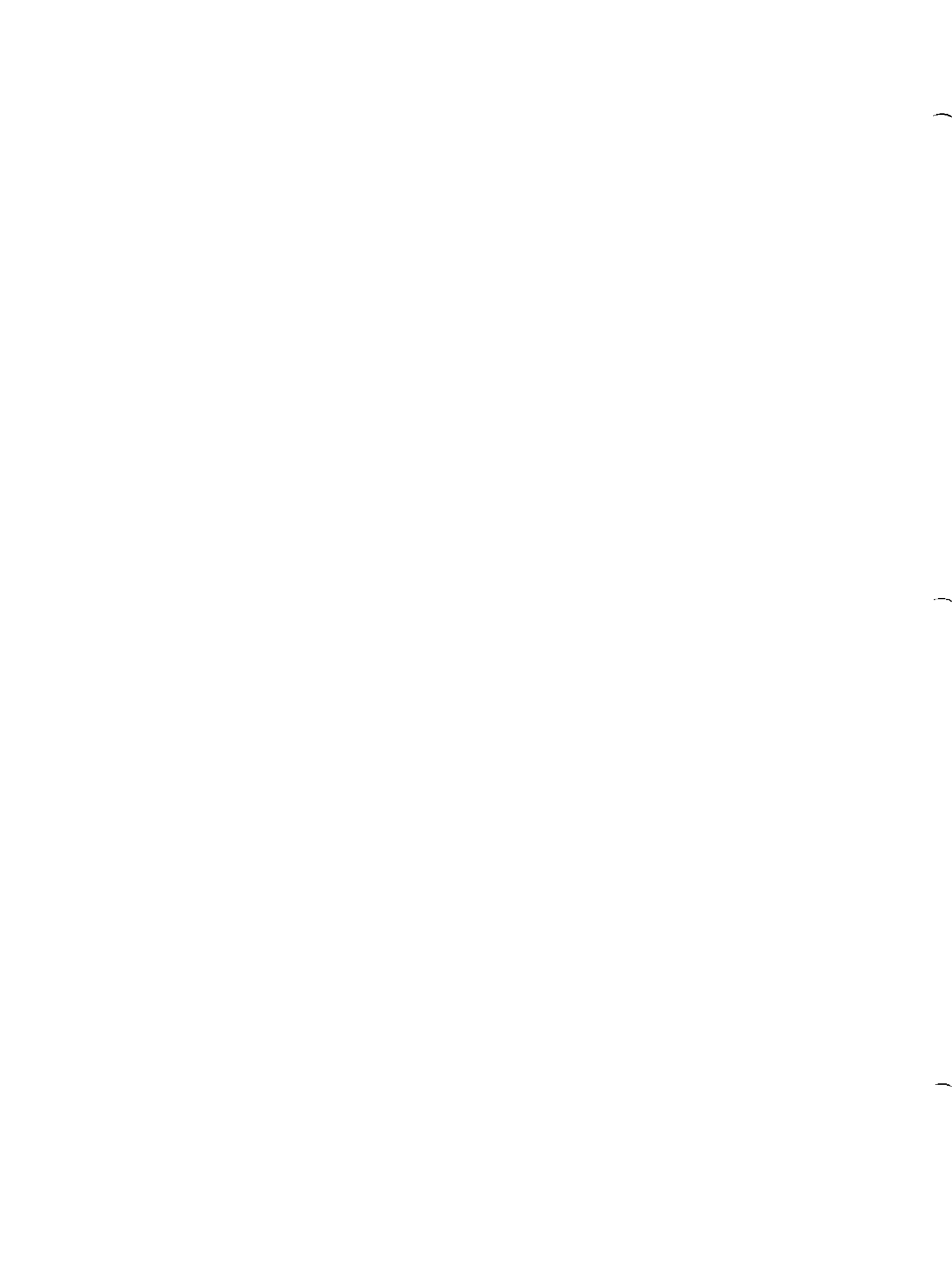
- Opportunity cost of labor \_\_\_\_\_

= Return on investment \$ \_\_\_\_\_

÷ Equity investment \_\_\_\_\_

= PERCENTAGE RETURN ON INVESTMENT \_\_\_\_\_ %

Compare opportunity costs of labor and investment from potential income sources with returns to labor and investment from fishing.





# Statement of Assets and Liabilities (Balance Sheet)

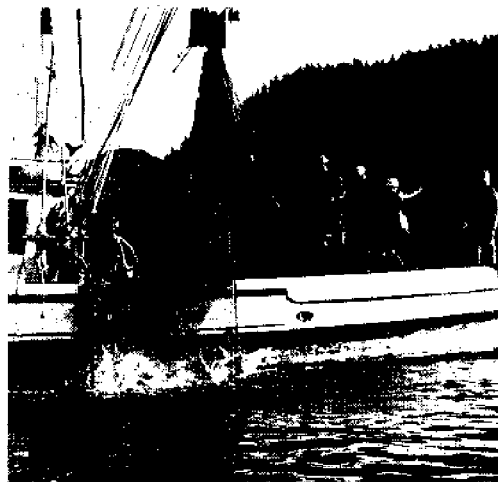
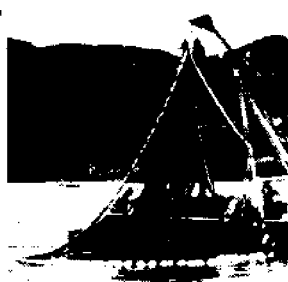
## Reasons Needed

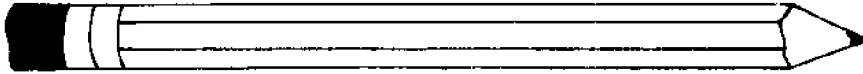
- The statement of assets and liabilities, also known as the balance sheet, is the standard financial statement used to summarize what an individual or business owns and what it owes. The arithmetic difference between assets and liabilities is net worth, equity, or owner's equity; they all mean the same thing.
- The asset and liability statement is a routine part of every loan application, as is the income statement. Lenders review a potential borrower's list of assets and liabilities to help determine the ability to repay a loan. Typically, the statement is divided into current and long-term assets, and current and long-term liabilities. Subtracting current liabilities from current assets gives an indication of short-term cash position and ability to pay existing or upcoming bills and loan payments. Subtracting long-term liabilities from long-term assets indicates the ability to repay a loan in the event that a borrower runs into financial difficulties and must liquidate assets to pay off creditors.

John Doyle



Chris Riley





## Definitions

Refer to Worksheets 4 and 5 as you read.

- Current assets. Current assets are cash or other assets which can be converted (liquidated) to cash in a short period at little or no expense. Because they can be easily liquidated, current assets are often referred to as "liquid assets." Included are checking and savings accounts, certificates of deposit, stocks, bonds, and other securities, uncollected income from the sale of fishery products to a cannery or other buyer, money due from the sale of equipment, and loans to friends or relatives--assuming they are collectible. Other such assets include prepaid insurance or rent, the cash value of an ordinary life insurance policy, and money in a capital construction fund account.

Typically, insurance (vessel, vehicle, warehouse) is paid in advance, as are leases and stall rent or moorage. If six months of vessel insurance coverage remains at the time you prepare a statement of assets and liabilities, then claim the remaining

six months value of the insurance as a current asset. Do the same for other prepaid fees, even if only one month of coverage remains. Add them and claim the total as "prepaid expenses." You should then list them separately on an attached page, along with the value of stocks, bonds, and other securities lumped together under the category of "public stocks/securities." The cash value of life insurance is the sum total of life insurance payments made on an ordinary life or similar policy less any amount borrowed.

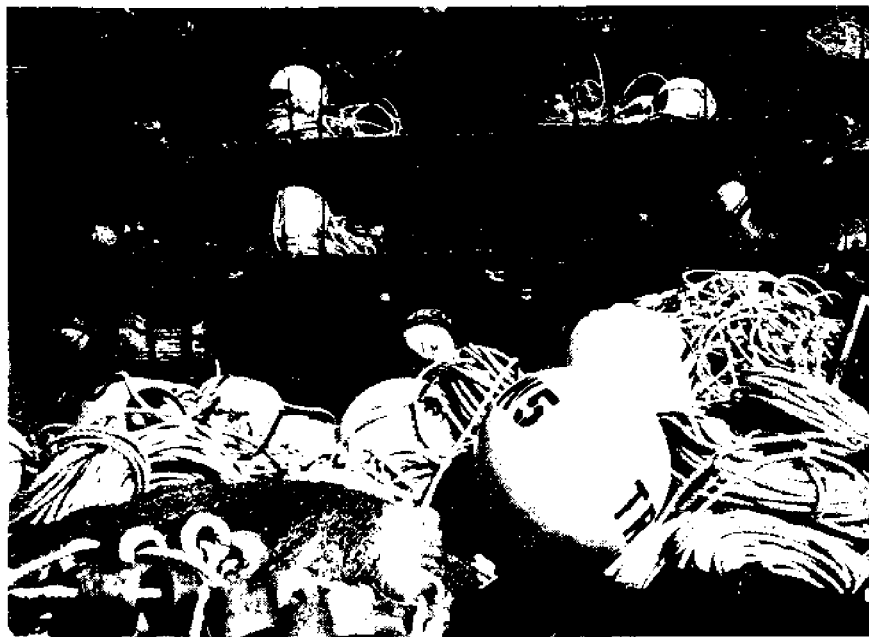
Notice that on Worksheets 4 and 5 there are "purchase price" and "current value" columns for current and long-term assets. In the current asset section, list both the purchase price and the current value of stocks, bonds, and other marketable investments whose value changes with time. In all cases, list only the current value of nonmarketable assets such as checking and savings accounts, the cash value of life insurance, prepaid expenses, and accounts receivable or money due from a cannery.

- Long-term assets. These are commonly major investments. Some are depreciable such as vessels and equipment, fishing gear, warehouses, and vehicles. Long-term assets which are not depreciable include land, stock in family or closely held corporations, mortgages or contracts held on property being purchased from you, and fishing permits. Accountants sometimes put intangible assets, including fishing permits, into a category called "other assets" to distinguish them from tangible property. We will skip that formality. The characteristic that distinguishes long-term assets from current assets is that long-term assets are not intended to be purchased and sold within one year or one accounting period (which can be less than a year), nor do they wear out in that time period.

Remember to list both the purchase price and current fair market value of long-term assets on Worksheets 4 and 5.

- Current liabilities. Bills and notes, plus loan payments and taxes which are due within one year or one accounting period are considered current liabilities. Notes are short-term loans from a bank or other creditor. Long-term loans stretch over

more than one year and are considered long-term liabilities. However, the payments on a long-term loan which are due during the current year or accounting period are considered current liabilities. Include both the principal and interest on note and long-term loan payments due. For the sake of simplicity, do not list principal and interest separately. Taxes payable within one year or one accounting period may include back taxes owed plus estimated taxes payable on net income shown on the income statement. Unpaid property tax assessments, employee withholding taxes, and social security taxes are also current liabilities.



Craig Wiese



Craig Wiese

- Long-term liabilities. These are remaining balances on mortgages and loans that are scheduled for repayment over a period of more than one year. This is exclusive of the principal payments that come due within one year or one accounting period and fall into the category of current liabilities. Do not include anticipated interest payments. Interest is not a liability until it has actually accrued.
- Net worth. Net worth is the remainder of total assets less total liabilities. Other terms for net worth are owner's equity and equity. Net worth or equity reflects what remains after selling all assets and paying all debts. Notice on Worksheets 4 and 5 that two values for net worth are calculated. By one method of calculation, all assets are valued at original purchase price. By the other calculation method, long-term and certain short-term assets (such as marketable stocks) are valued at fair market value.

### Explanation

- A statement of assets and liabilities is a summary of business or individual assets, liabilities, and net worth. Such a

statement is routinely prepared at the end of a year or an accounting period. For loan applications (which are not prepared on a given schedule) the statement should reflect the financial position of the individual or business on or near the date of application.

There is a difference between the balance sheet developed for business analysis purposes and the one filed with a loan application. For a vessel loan, as an example, individuals should list both business and personal assets and liabilities. List such personal assets as valuable jewelry, art work, personal vehicles and your home; and such business assets as your vessel, warehouse and fishing gear. Likewise, on the liability side, list remaining balances on loans for your home, vehicle, boat, equipment, fishing permits, and other items.

When preparing a statement of assets and liabilities for business analysis purposes (excluding a loan application), stick with business assets and liabilities only. Disregard personal assets; they confuse year-to-year

comparisons of a business's net worth and growth.

- Space is provided on Worksheets 4 and 5 to list both purchase price and fair market value for current and long-term assets. Generally accepted accounting principals stipulate that assets be valued at purchase price because this is a verifiable figure that accountants can trace and prove. Accountants do not like to deal with uncertainty. Fair market value can vary with the wholesale or retail level, the buyer or seller's viewpoint, the supply and demand in different geographical areas, or with each appraiser's estimate of the condition of a used asset. It is subjective and uncertain.

In many circumstances, however, a determination of net worth based upon purchase price values for assets is meaningless. For example, a lender who is reviewing a list of assets that a prospective borrower is offering as security for a loan is interested only in the current value of those assets, not their original cost. Likewise, both the seller and potential buyer of a business are interested in the current value of the business assets, not



Chris Riley

the historical value. Nor is cost basis accounting of use to individuals detailing their net worth for estate planning, retirement planning, or for determining whether they are gaining or losing wealth from year to year in their business. Consequently, for individual financial statements it has become an accounting convention to list both the purchase price and fair market value of assets on a statement of assets and liabilities and to calculate two values for net worth.

- Notice on Worksheet 4 in the list of "Current Liabilities" that there is a category called "Estimated taxes on appreciated value of assets." This estimate relates to assets whose fair market value is greater than their original purchase price. What is required, according to accounting convention, is an estimate of the capital gains taxes, and taxes on any recaptured depreciation. It is a liability that offsets the increase in current value over original purchase price. Unfortunately, an accountant will probably be needed to make the estimate, but it is a required part of a proper Statement of Assets and Liabilities. As a very rough estimate set the tax liability at 25 percent of the total recapture and capital gain amount.

- Worksheet 4 outlines how each part of a balance sheet is prepared, and Worksheet 5 illustrates the format for a complete balance sheet.



Craig Wiese

## Statement of Assets and Liabilities (Balance Sheet)

CURRENT ASSETS		*PURCHASE PRICE	CURRENT VALUE
ENTER	Cash (checking, savings, other)	\$ _____	\$ _____
+	Due from canneries	_____	_____
** +	Marketable stocks & securities	_____	_____
+	Accounts receivable (from sales or services)	_____	_____
+	Notes receivable (loans)	_____	_____
+	Capital construction fund balance	_____	_____
+	Cash value of life insurance	_____	_____
+	Prepaid expenses (remaining balance)	_____	_____
+	Other	_____	_____
=	TOTAL CURRENT ASSETS	\$ _____	\$ _____
LONG-TERM ASSETS (APPRAISED OR SURVEY VALUE)			
ENTER	Real estate (business only)	\$ _____	\$ _____
+	Fishing permits	_____	_____
+	Vehicles	_____	_____
+	Vessels and attached equipment	_____	_____
+	Fishing gear (nets, pots, lines, etc.)	_____	_____
+	Mortgages or contracts (owned)	_____	_____
** +	Closely held stocks (not public issues)	_____	_____
+	Other	_____	_____
=	TOTAL LONG-TERM ASSETS	\$ _____	\$ _____

\*In the Current Assets section list the current value in both the purchase price column and current value column of all items except "marketable stocks and securities." List the true purchase price and current price of these. List the purchase price and current value for each of the Long-Term Asset categories. If you have more than one vehicle or vessel, etc., lump the purchase prices together and current values together.

\*\*On a separate page list stocks and other securities including issuing corporation, number of shares, original cost, and current value.

CURRENT LIABILITIES		PURCHASE PRICE	CURRENT VALUE
ENTER	Accounts payable--suppliers/creditors		\$ _____
+	Accounts payable--cannery		_____
+	Current portion of long-term loans (principal and interest)		_____
+	Notes payable (short-term loans)		_____
+	Accrued taxes payable		_____
+	Estimated taxes on appreciated value of assets (capital gains & depreciation recapture)		_____
+	Other		_____
=	TOTAL CURRENT LIABILITIES		\$ _____
LONG-TERM LIABILITIES (principal balances less current portion)			
ENTER	Vehicle mortgages		\$ _____
+	Vessel & equipment mortgages		_____
+	Long-term notes		_____
+	Real estate mortgages		_____
+	Loan on life insurance		_____
+	Other		_____
=	TOTAL LONG-TERM LIABILITIES		\$ _____
TOTAL ASSETS			
ENTER	Total current assets	_____	_____
+	Total long-term assets	_____	_____
(A)	= TOTAL ASSETS	\$ _____	\$ _____
TOTAL LIABILITIES			
ENTER	Total current liabilities		_____
+	Total long-term liabilities		_____
=	TOTAL LIABILITIES		\$ _____
NET WORTH			
ENTER	Total assets	_____	_____
-	Total liabilities*	_____	_____
=	NET WORTH (equity)	\$ _____	\$ _____

\*There is only one value for total liabilities so the same number is in both the "Purchase Price" and "Current value" columns.



TOTAL LIABILITIES PLUS NET WORTH

ENTER	Total liabilities	_____	_____
+	Net worth	_____	_____
(B)	=	TOTAL LIABILITIES PLUS NET WORTH	\$ _____ \$ _____
		(should equal total assets)	

NOTE: Total assets (A) should equal (balance) total liabilities plus net worth (B).



## F/V Big Expense Statement of Assets

<u>CURRENT ASSETS</u>	<u>PURCHASE VALUE</u>	<u>CURRENT VALUE</u>
Cash (checking, other)	\$ _____	\$ _____
Due from canneries	_____	_____
Public stocks/securities	_____	_____
Accounts receivable	_____	_____
Notes receivable	_____	_____
CCF account balance	_____	_____
Cash in life insurance	_____	_____
Prepaid expenses	_____	_____
Others	_____	_____
TOTAL	\$ _____	\$ _____
LONG-TERM ASSETS (appraised or survey value)		
Real Estate	\$ _____	\$ _____
Fishing permits	_____	_____
Vehicles	_____	_____
Vessels and equipment	_____	_____
Fishing gear	_____	_____
Mortgages and contracts	_____	_____
Closely held stocks	_____	_____
Other	_____	_____
TOTAL	\$ _____	\$ _____
TOTAL ASSETS	\$ _____	\$ _____

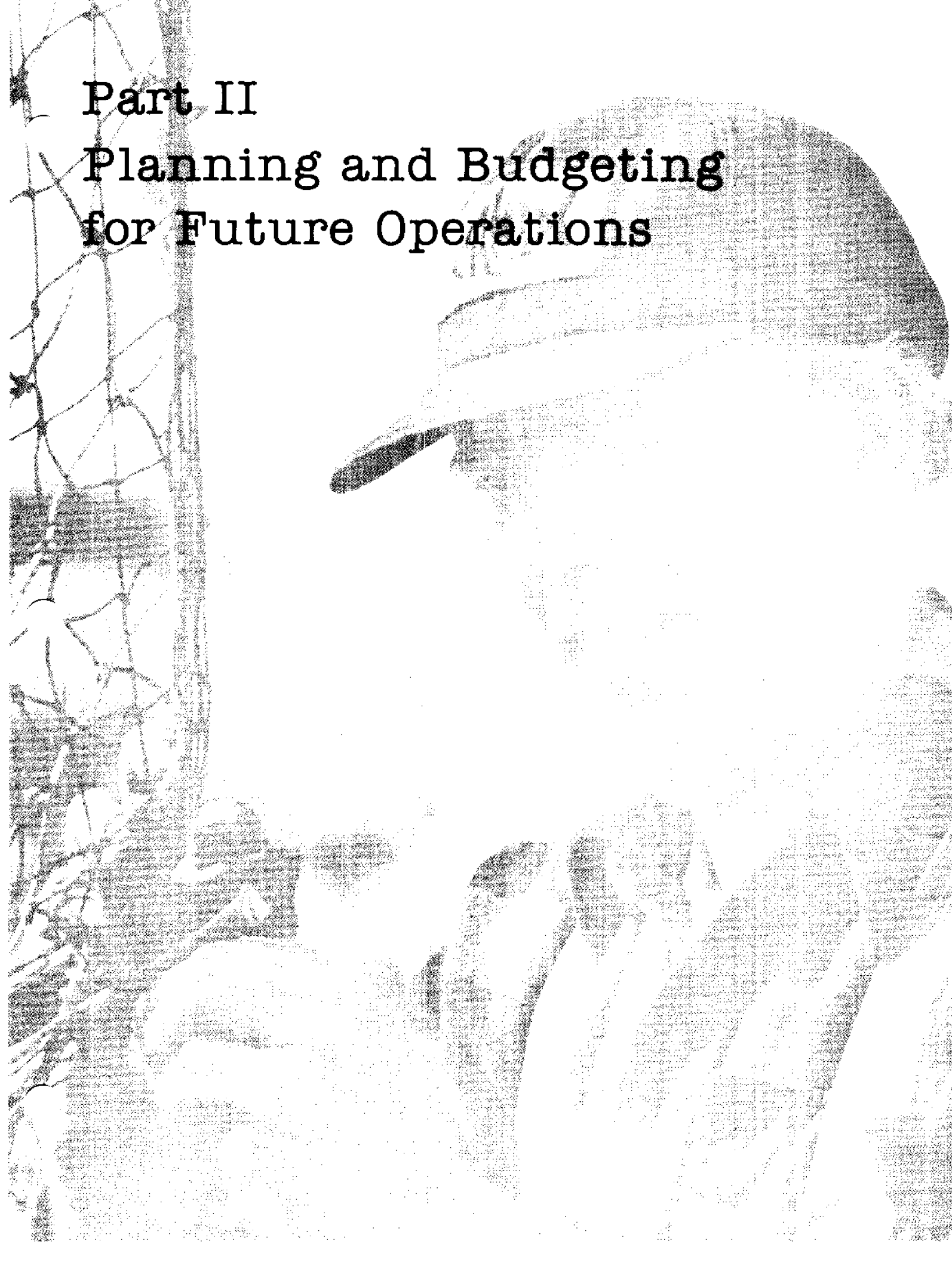
## and Liabilities December 31, 19--

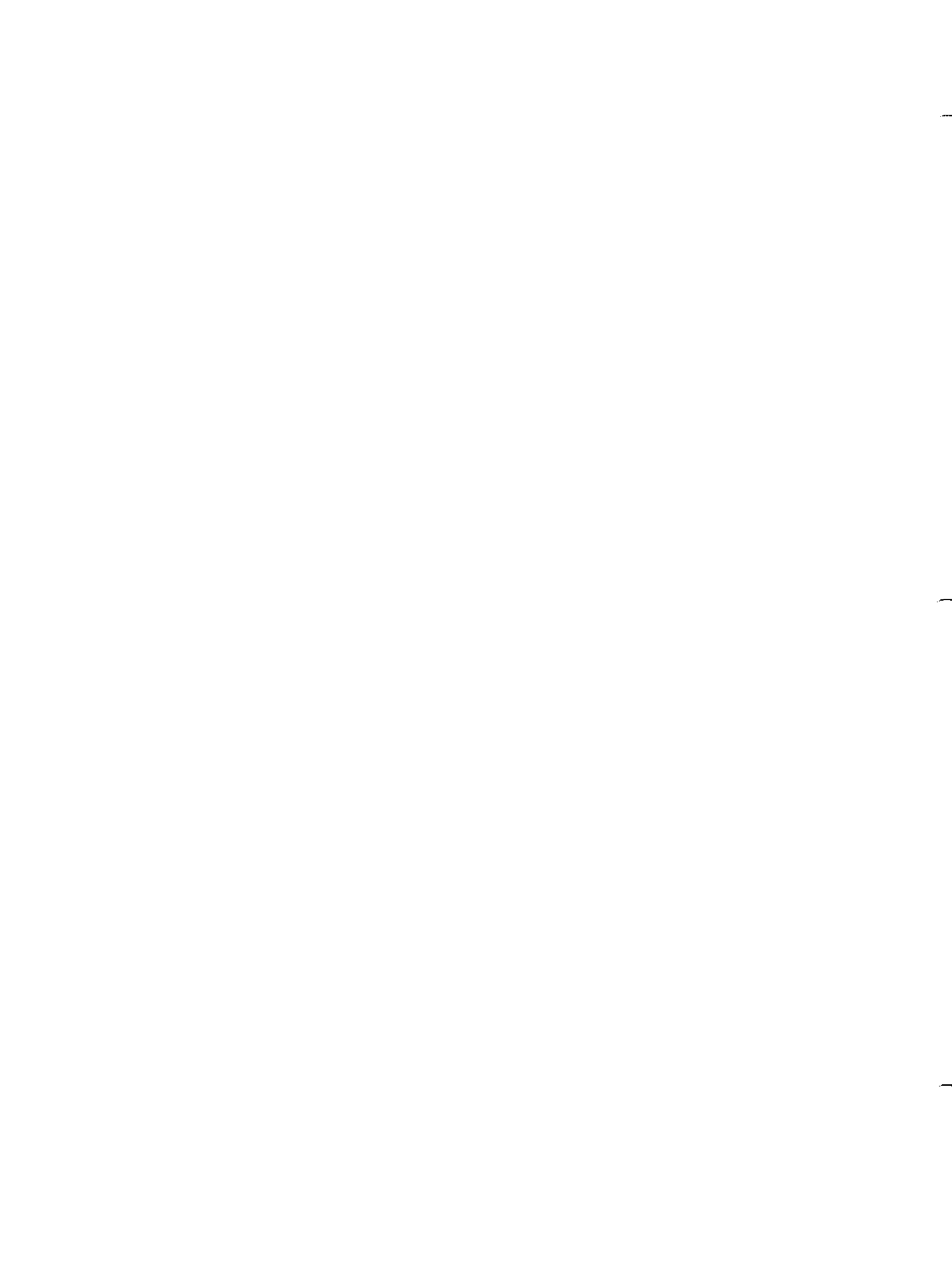
<u>CURRENT LIABILITIES</u>	<u>PURCHASE PRICE</u>	<u>CURRENT VALUE</u>
Accounts payable--suppliers		\$ _____
Accounts payable--cannery		_____
Current portion of long-term debt (principal and interest)		_____
Notes payable		_____
Taxes payable (back & current taxes)		_____
Estimated taxes on appreciated value of assets		_____
Other		_____
TOTAL		\$ _____
LONG-TERM LIABILITIES		
Vehicle mortgages		\$ _____
Vessel/equipment mortgages		_____
Long-term notes		_____
Real estate mortgages		_____
Loan on life insurance		_____
Other		_____
TOTAL		\$ _____
TOTAL LIABILITIES		\$ _____
NET WORTH	\$ _____	\$ _____
TOTAL LIABILITIES PLUS NET WORTH	\$ _____	\$ _____



# Part II

## Planning and Budgeting for Future Operations





# Market Analysis

## Reasons Needed

Craig Wiese

- Inadequate analysis of the market for a business's goods and services is one of the most prevalent reasons for new business failures in the United States.

- The most fundamental questions to be answered before making a major investment in any business are:

- Who are the buyers for this product?
- What is the demand among these buyers?
- What is the existing supply to them?
- What is the price offered?
- Is demand rising, stable, or falling at this price?

- The answers to most marketing questions can only be estimates, since demand, supply, price, and the consumer are not an easily predictable lot.

- Many lenders are requesting a marketing agreement between a borrowing fisherman and a processor or other buyer as a condition of vessel loan approval. This condition especially applies to loans of a few hundred thousand dollars or more.

Michael Broili



### Definitions

- Marketing. A merchandising process which blends the packaging, pricing, promotion, and distribution of a product to potential buyers.

### Explanation

A marketing study of existing products such as canned or frozen salmon is usually a matter of using past performance to estimate future performance. Statistics summarizing demand, supply, and price trends over a number of years for a given product are reviewed. Based on those trends, projections are made regarding how much of the product can be sold at a given price.

The following questions regarding resource and marketing factors will be helpful to the fisherman launching into a new fishery or considering new market alternatives for a traditional product. The list is not comprehensive, but it should stimulate additional questions that will help you to evaluate your particular situation.

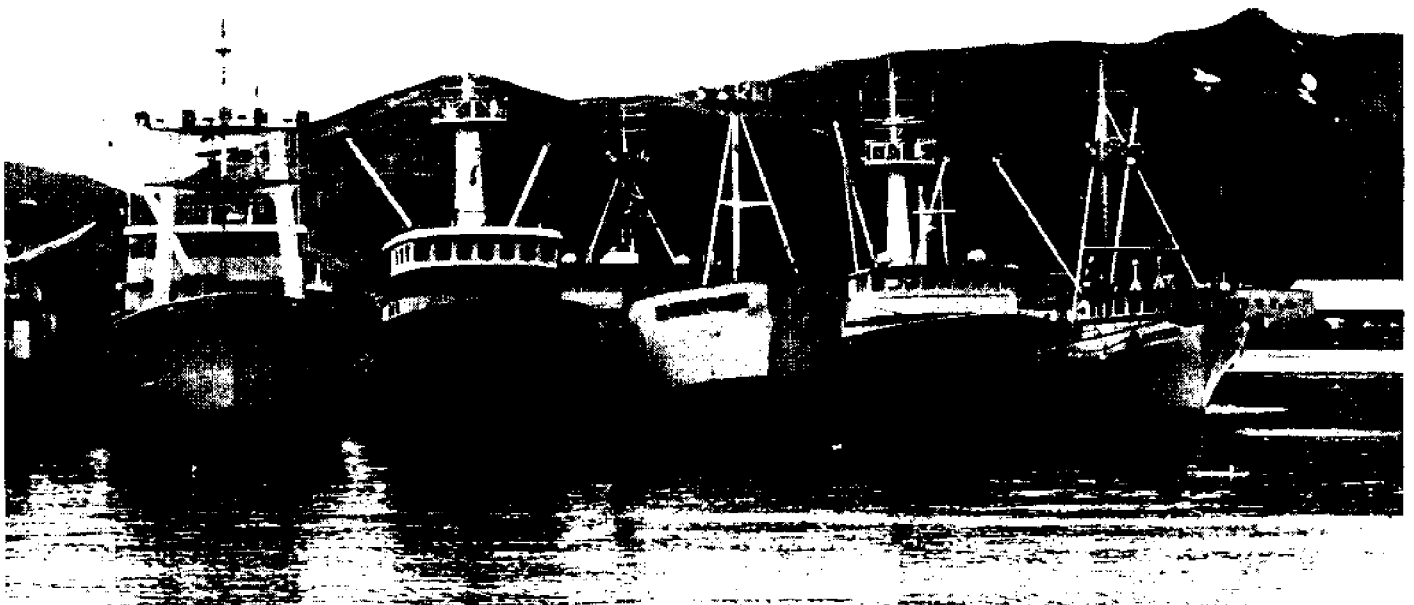
- What products (species) do you intend to sell?
- Will the products be sold live, fresh, refrigerated, or frozen?
- Will they be sold whole or processed in some way?
- What has been the local catch history for these species?
- What population life cycle is associated with each of these species?
- Is the cycle down or up?
- How many other fishermen will be harvesting the same species in the same area?
- How much of each product can you expect to sell given the competition?
- What has been the price history for these products?
- What has been the trend in demand for these products, both local and worldwide? Is it stable, increasing, decreasing, or fluctuating wildly?
- What has been the trend in supply of these products, both local and worldwide (less than demand, more than demand, just satisfying demand)?
- How greatly does price vary with changes in supply and demand?
- To whom will you sell your products?
- What is their credit record?
- What is their record for honesty and reliability?
- How long have they been in business?

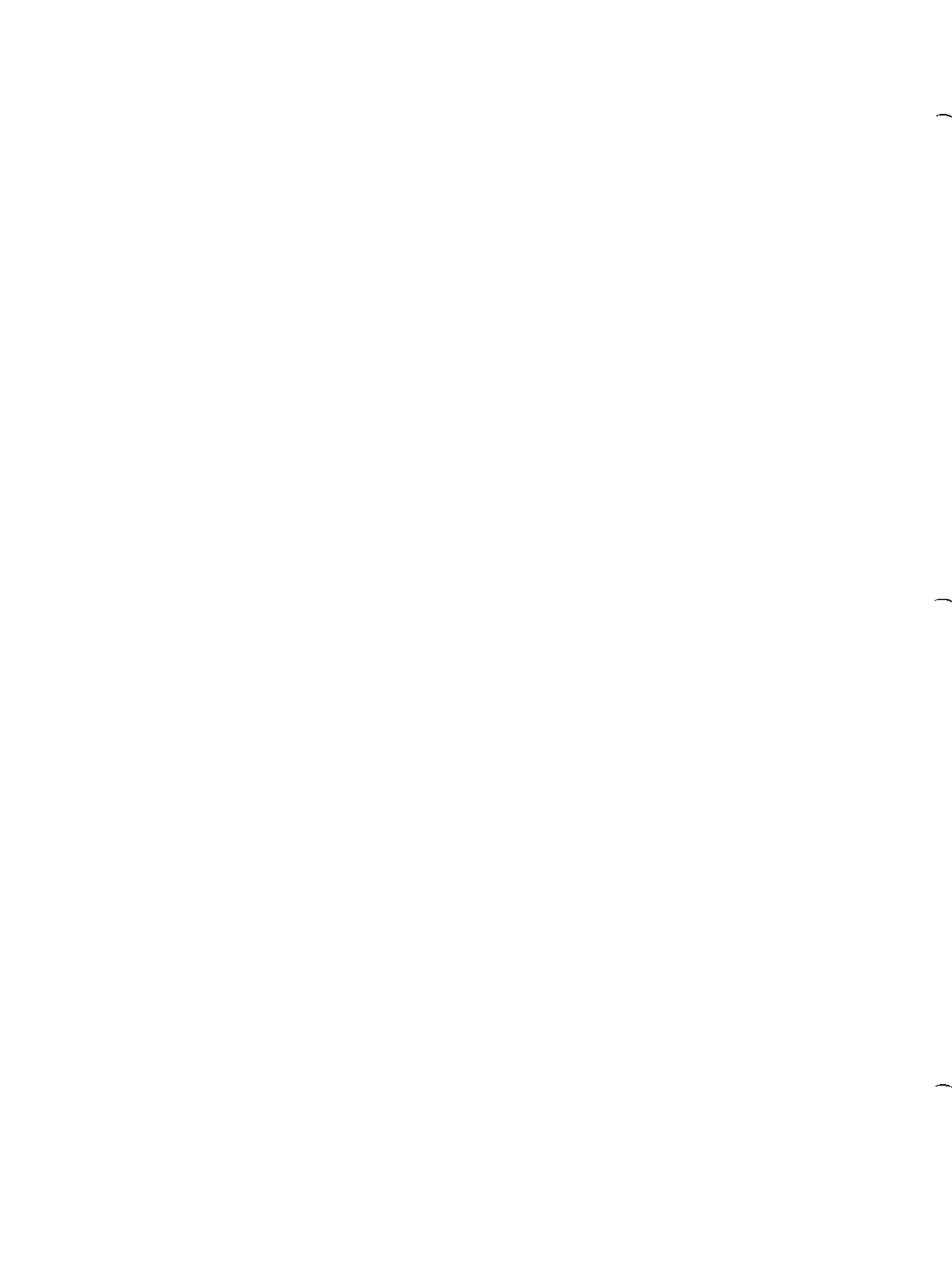


- Will they take all the products you can deliver or are there limits? What limits?
- How often and how much should you deliver in order to satisfy their production scheduling and their suppliers?
- What product forms of the species you intend to catch will bring the best ex vessel price or sell in the greatest quantity (whole unrefrigerated salmon; whole iced salmon; iced, gutted, and gilled salmon; bled unrefrigerated salmon)?
- What is the supply, demand, and price of each of these forms?
- Can you deliver these forms?
- How quickly must the product be delivered to assure good quality?
- What are the delivery logistics? (How will you hold the product on board? Will you deliver it at sea, in port to a processor, or in port to a cold storage to be packaged and shipped to another market?)
- Are there delivery costs?
- Will delivery time from port to wholesale market be a problem?
- What will be the holding and packaging costs, if any?
- Can you afford to hold the product in inventory if the wholesale price drops?

Again, this is not a complete list of marketing questions to which you should know the answers. It only provides an idea of the kind of questions that you should be asking.

Michael Broili





# Pro Forma Income Statement and Cash Balance

## Reasons Needed

- The pro forma income statement is the primary planning tool for calculating projected income and expenses. It is the point at which daydreams are put on paper.
- It is a standard part of business loan applications.
- It is the basis for projecting return on investment, return to labor, and other measures of profitability.
- It provides the fundamental information for such financial feasibility and budgeting calculations as break-even analyses, cash flow statements, and comparisons of alternative uses of vessels and gear.

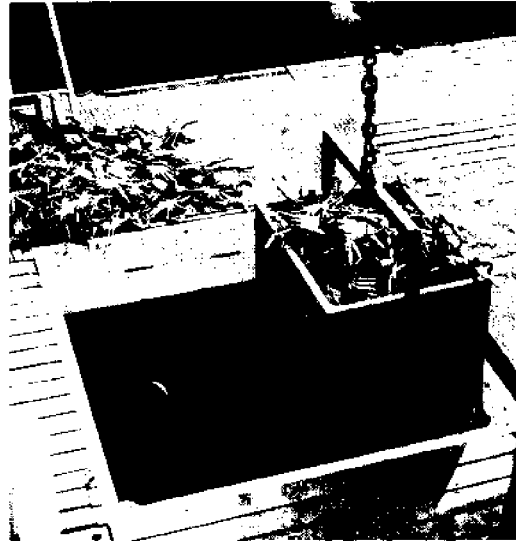
## Definition

- Pro forma. Hypothetical or projected.

## Explanation

- The pro forma income statement format is identical to a standard income statement except that its numbers reflect estimates of future operations rather than actual income and expenses from past operations.
- In preparing a realistic pro forma income state-

Craig Wiese



Chris Riley

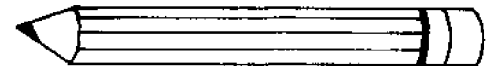
ment, revenue and expense sources should be examined in detail. This examination is especially relevant if those revenues and expenses will be generated by your participation in an unfamiliar fishery, or by the use of a vessel that is much larger than you have previously operated.

- Before beginning the pro forma income and expense calculations, it is worthwhile to establish, at least in general terms, the type of vessel and operation the pro forma is based upon. Worksheet 6 does this. It is a specification sheet which inventories vessel characteristics, operating schedules, and investment costs. The worksheet can be a useful guideline for estimating various operating and fixed costs. For example, fuel expense is related to main and auxiliary engine horsepower. It is also related to delivery mode (at sea or shoreside), and to operating schedule, time spent with gear in the water, time spent searching for fish and delivery time.

One of the business calculations, return on equity investment, is related to the portion of your total assets which was financed with your own money versus the portion financed with borrowed funds.

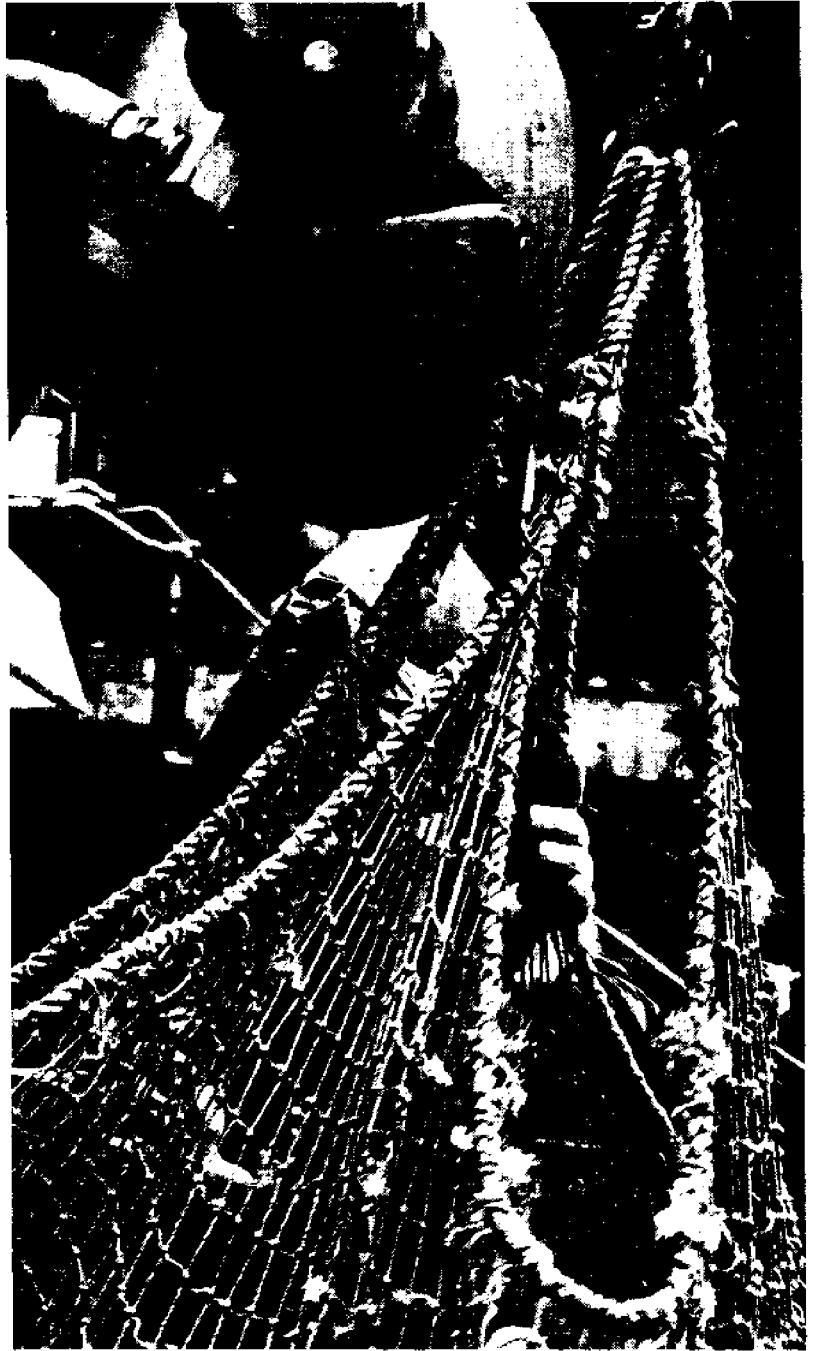


- Worksheets 7 and 8 show how to calculate income two different ways. There are separate explanations of these income calculations following Worksheet 6.



- On Worksheet 9, many of the operating costs are calculated per fishing trip and extrapolated to the seasonal or yearly scale. If it is unnecessary or unrealistic for you to think in terms of cost per trip, then use whatever unit of time or production that suits you best. The operating cost section is nothing more than a guideline to organize your thinking. As such, it should be changed to fit your fisheries and personal preferences. Delete those cost items which do not pertain to your operation and add other costs which are not listed.
- If you intend to participate in more than one fishery during a year as do most fishermen, you should complete separate income and expense calculations for each.

Separate calculations will help illustrate which parts of the year-round operation will be profitable, which will just break even, and which are potential losers. As explained in the income statement section of Part I, separate calculations become a little complicated when dealing with fixed expenses which are not directly related to a particular fishery. Hull insurance, boat payments, and accountant fees fall into this category. One way to allocate these costs among the various fisheries is to do it on a percentage basis. The percentages reflect the amount of time spent in each fishery. To repeat the example used earlier: assume that you spend three months preparing for and fishing in the salmon seine fishery, four months crabbing, one month seining herring, and four months idle. The vessel is operating eight months. Three-eighths or 38 percent of the time is spent in the salmon seine fishery; one-half or 50 percent in crabbing, and one-eighth or 12 percent in herring seining. Fixed costs can then be allocated to each fishery in the same proportions: 38 percent for salmon seining, 50 percent for crabbing, and 12 percent for herring.



Craig Wiese

## Vessel Characteristics, Operating Characteristics and Investment (Name of Fishery)

VESSEL	VESSEL #1	VESSEL #2	VESSEL #3
USE <sup>2</sup> (fishing, jitney, tender, etc.)	_____	_____	_____
Engine HP	_____	_____	_____
Fuel consumption running (gal per hr)	_____	_____	_____
Fuel consumption fishing (gal per hr)	_____	_____	_____
Auxiliary HP	_____	_____	_____
Fuel consumption (gal per hr)	_____	_____	_____
Hold capacity (cubic ft)	_____	_____	_____
Type of refrigeration system	_____	_____	_____
Fishing gear used (pots, seine, etc.)	_____	_____	_____
DELIVERY MODE (shoreside, at sea, whole, semi-processed, etc.)	_____	_____	_____
CREW SIZE (include skipper)	_____	_____	_____
OPERATING SCHEDULE:			
Days fishing per trip, week, or season	_____	_____	_____
Days running per trip, week, or season	_____	_____	_____
Days in port per trip, week, or season	_____	_____	_____
Total trips, weeks, or seasons per year	_____	_____	_____

<sup>1</sup>This information is intended to help you think through the income and expense projections on worksheets 7, 8, and 9. List additional information which will help you make these projections.

<sup>2</sup>Some methods of fishing such as seining and pair trawling require more than one vessel.

# Worksheet 6 Continued

43

## INVESTMENT COSTS

		TOTAL INVESTMENT	AMOUNT BORROWED	EQUITY
Original vessel	vessel #1	_____	_____	_____
	vessel #2	_____	_____	_____
	vessel #3	_____	_____	_____
Additional electronics	vessel #1	_____	_____	_____
	vessel #2	_____	_____	_____
	vessel #3	_____	_____	_____
Additional deck equipment	vessel #1	_____	_____	_____
	vessel #2	_____	_____	_____
	vessel #3	_____	_____	_____
Additional engine, hull, or superstructure modifications	vessel #1	_____	_____	_____
	vessel #2	_____	_____	_____
	vessel #3	_____	_____	_____
Additional refrigeration	vessel #1	_____	_____	_____
	vessel #2	_____	_____	_____
	vessel #3	_____	_____	_____
Fishing gear		_____	_____	_____
Warehouse or storage building		_____	_____	_____
Vehicles		_____	_____	_____

Craig Wiese



## Income Calculation

- Two methods of estimating potential income are illustrated in Worksheets 7 and 8. These methods are the "catch share approach" and the "weight approach." The catch share approach is useful only when a fisherman has several years of experience in a particular fishery and can use that experience to project future catches in the same fishery. The catch share approach calculates an average percentage of the total catch that a fisherman harvests over a number of years (at least three) and applies this percentage to projected future runs. It is especially useful for estimating income from species that have runs or populations which are cyclical.
- The weight approach is used when a fisherman has little or no experience in a fishery. It begins with an educated guess about anticipated catches and applies to it another guess about prices, resulting in an income estimate. The weight approach is a guessing game. However, projected estimated catch levels should reflect the reality of Department of Fish and Game historical catch statistics, their catch forecasts and additional catch information from experienced fishermen, processors, and lenders. Future prices should take into consideration past price trends and their correlation with past catch levels--in other words, the supply-demand-price interaction.

Craig Wiese

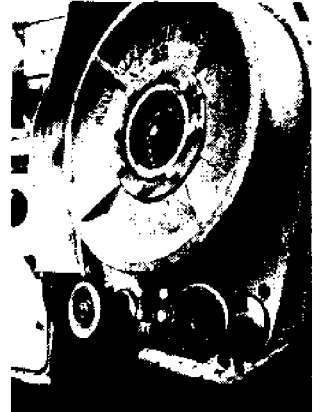




## Catch Share Approach

- The catch share approach requires at least three years of experience in the fishery for which you are projecting an income. This "track record" is a prerequisite for calculating an average catch. To calculate an average percentage catch, first determine which years of prior fishing experience will be used to represent your fishing skills and catch potential. Except for those years in which you were precluded from fishing because of mechanical problems, injury, or some other unusual event, the last five to eight years should be used to produce a good average catch statistic. You may want to exclude catch data for your first year or two in a fishery if they were spent more in learning than in catching.

Once you have chosen the years to include, the catch share calculation is simply a matter of dividing your catch for each year by the total area catch for the year (a Department of Fish and Game statistic). The resulting series of catch percentages are then averaged by adding them and dividing by the number of years in the series. This process should be repeated for each species if more than one species is caught in the proposed fishery. You may want to exclude those species that account for an insignificant income percentage. An example of the process follows. Worksheet 7 is for your own calculations.



Craig Wiese

Gary Taylor



## Catch Share Approach: An Example

Assume for a moment that you are a salmon gillnetter fishing red salmon, and only three years of catch data are available. Remember that only one species is considered here and that the process would normally be repeated for each additional species. Income will be projected three years into the future, which is common for loan applications.

### CATCH STATISTICS:

	FISHERMAN'S CATCH <u>RED SALMON</u>	TOTAL CATCH <u>RED SALMON</u>	AVERAGE WEIGHT <u>RED SALMON</u>
Year #1	3,125	638,159	6.25 lbs
Year #2	2,022	552,678	6.75 lbs
Year #3	2,763	614,125	6.50 lbs

### (A) DETERMINE THE CATCH PERCENTAGE

ENTER	Number of red salmon caught Year #1	3,125	fish
÷	Total local harvest of reds Year #1	638,159	fish
x	100 (convert to percentage)	100	
=	Percentage You Caught (approximately one-half of 1 percent)	.49	
ENTER	Number of red salmon caught Year #2	2,022	fish
÷	Total local harvest of reds Year #2	552,678	fish
x	100 (convert to percentage)	100	
=	Percentage You Caught	.37	
ENTER	Number of red salmon caught Year #3	2,763	fish
÷	Total local harvest of reds Year #3	614,125	fish
x	100 (convert to percentage)	100	
=	Percentage You Caught	.45	

(B) AVERAGE PERCENTAGE OF RED SALMON CAUGHT IN YEARS 1-3

ENTER	Percentage caught Year #1		.49
+	Percentage caught Year #2		.37
+	Percentage caught Year #3		.45
=			1.30
÷	3		
=	AVERAGE PERCENTAGE OF RED SALMON CAUGHT		.44

(C) USING THE AVERAGE CATCH PERCENTAGE TO ESTIMATE FUTURE CATCHES AND INCOME FOR THE NEXT THREE YEARS

(1)	ENTER	Average percentage catch of red salmon		.44
	÷	100 (convert from percentage to decimal fraction)	100	
	=			.0044
	x	Predicted harvest of red salmon in Future Year #1 (Fish & Game prediction)	812,000	fish
	=	Your Estimated Catch of Red Salmon	3,573	fish
	x	Average weight per fish	6.5	lbs
	x	Estimated price per pound Year #1	\$0.90	lb
	=	Estimated Income From Red Salmon in Future Year #1	\$20,902.05	
(2)	ENTER	Average percentage catch of red salmon		.44
	÷	100 (convert to decimal fraction)	100	
	=			.0044
	x	Predicted harvest of red salmon in Future Year #2	600,500	fish
	=	Your Estimated Catch of Red Salmon	2,642	fish
	x	Average weight per fish	6.5	lbs
	x	Estimated price per pound Year #2	\$1.10	lb
	=	Income From Red Salmon in Future Year #2	\$18,890.30	

Catch Share Approach Example (continued)

(3)	ENTER	Average percentage catch of red salmon	.44	
	÷	100 (convert to decimal fraction)	100	
	=		.0044	
	x	Predicted harvest of red salmon in Future Year #3	400,500	fish
	=	Your Estimated Catch of Red Salmon	1,762	fish
	x	Average weight per fish	6.5	lbs
	x	Estimated price per pound Year #3	\$0.85	lb
	=	Income From Red Salmon in Future Year #3	\$9,736.16	

(D) TOTAL ESTIMATED INCOME PER YEAR (THIS STEP IS UNNECESSARY IN OUR EXAMPLE SINCE ONLY ONE SPECIES IS BEING CONSIDERED)

Chris Riley

John Doyle



Don Kramer



# Income Calculation

## Catch Share Approach

### (1) DETERMINE THE CATCH PERCENTAGE

Use a minimum of 3 years CATCH DATA

ENTER	Amount of species #1 <u>you</u> caught in year #1	_____	fish or lbs
÷	Total harvest of species #1 in year #1 (your region)	_____	
x	100 (convert to percentage)	<u>100</u>	
=	PERCENT OF TOTAL YOU CAUGHT IN YEAR #1	_____	%
ENTER	Amount of species #1 you caught in year #2	_____	fish or lbs
÷	Total harvest species #1 caught in year #2	_____	
x	100 (convert to percentage)	<u>100</u>	
=	PERCENT OF TOTAL YOU CAUGHT IN YEAR #2	_____	%
ENTER	Amount of Species #1 you caught in year #3	_____	fish or lbs
÷	Total harvest of species #1 caught in year #3 (your region)	_____	
x	100 (convert to percentage)	<u>100</u>	
=	PERCENT OF TOTAL YOU CAUGHT IN YEAR #3	_____	%

(Repeat for each additional year and each species)

### (2) AVERAGE PERCENTAGE SPECIES #1 CAUGHT IN YEARS 1 THRU \_\_\_\_\_

ENTER	Percent caught year #1	_____	%
+	Percent caught year #2	_____	
+	Percent caught year #3	_____	
+	(Repeat for remaining years)	_____	
=	Total Cumulative Percent	_____	%
÷	Number of years in the series	_____	
=	AVERAGE PERCENT SPECIES #1 CAUGHT	_____	%

(Repeat for each species)

(3) USING THE AVERAGE CATCH PERCENTAGE TO ESTIMATE  
FUTURE CATCHES AND INCOME

ENTER	Average percentage catch-species #1	_____ %	
÷	100 (convert percentage to decimal fraction)	_____	
x	Predicted total catch species #1 in future year #1 (Fish & Game prediction)	_____	fish or lb
=	Estimated catch species #1	_____	fish or lb
x	Average weight per fish (skip this step if your estimated catch is by the pound, ton, or other unit of weight)	_____	lbs
x	Estimated price per pound or other unit of weight	\$ _____	
=	INCOME FROM SPECIES #1 IN FUTURE YEAR #1	\$ _____	
ENTER	Average percentage catch-species #2	_____ %	
÷	Predicted total catch species #2 in future year #1 (Alaska Department of Fish & Game prediction)	_____	fish or lb
=	Estimated catch species #2	_____	fish or lb
x	Average weight per fish (skip this step if your estimated catch is already by the pound, ton, or other unit of weight)	_____	lbs
x	Estimated price per pound or other unit of weight	\$ _____	
=	INCOME FROM SPECIES #2 IN FUTURE YEAR #1	\$ _____	
ENTER	Average percentage catch-species #3	_____ %	
÷	100 (convert percentage to decimal fraction)	_____	
x	Predicted total catch species #3 in future year #1 (Fish & Game prediction)	_____	fish or lbs
=	Estimated catch species #3	_____	fish or lbs
x	Estimated price per pound or other unit of weight	\$ _____	
=	INCOME FROM SPECIES #3 IN FUTURE YEAR #1	\$ _____	

NOTE: Repeat steps (1) through (3) for each future year.

(4) TOTAL ESTIMATED INCOME PER YEAR FOR FUTURE YEARS 1 THROUGH \_\_\_\_\_

ENTER Estimated income from species #1, year #1 \$ \_\_\_\_\_

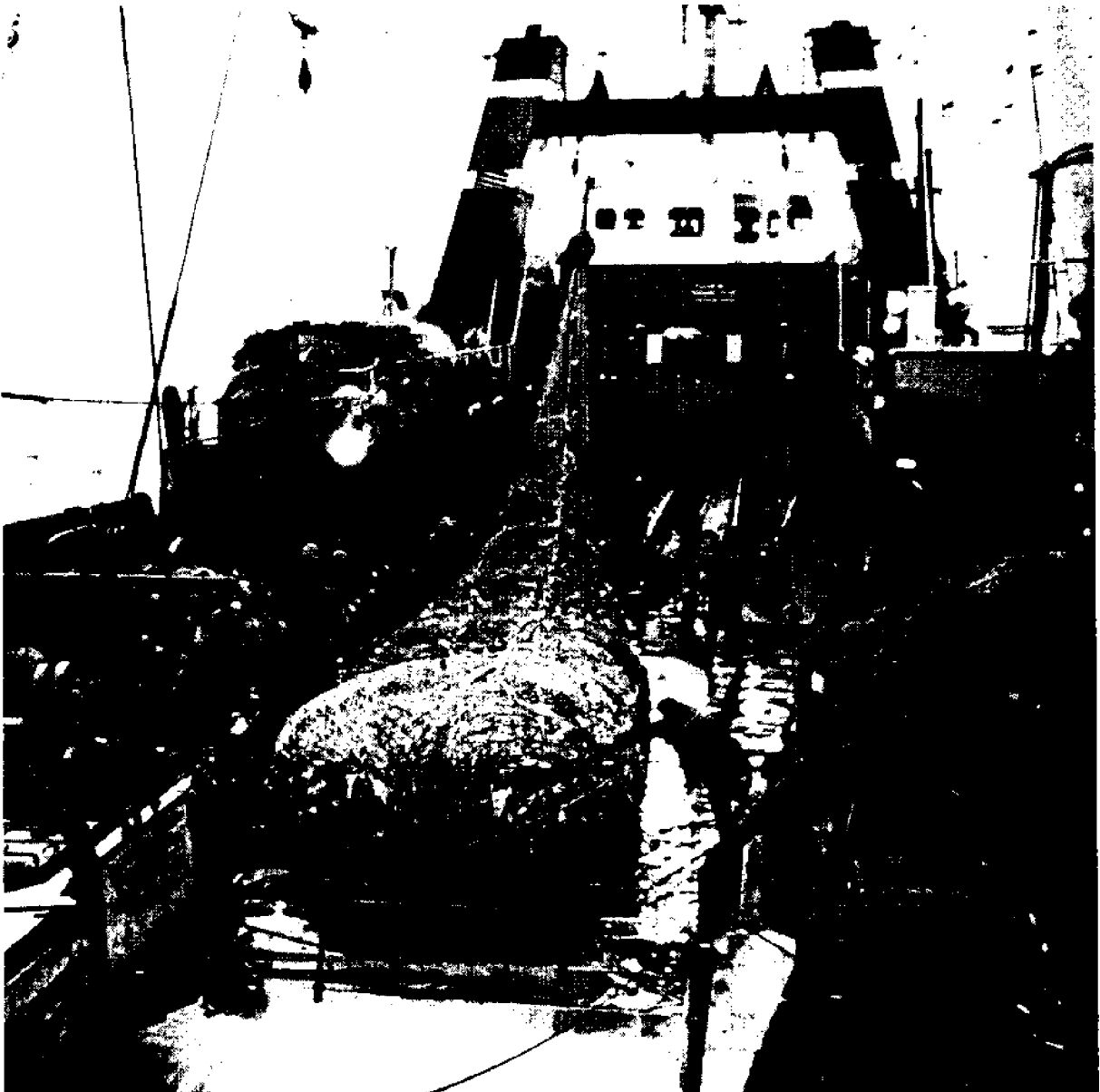
+ Estimated income from species #2, year #1 \_\_\_\_\_

+ Estimated income from species #3, year #1 \_\_\_\_\_

Repeat for additional species

= Estimated GROSS ANNUAL INCOME YEAR #1 \$ \_\_\_\_\_

Repeat step (4) for each additional year

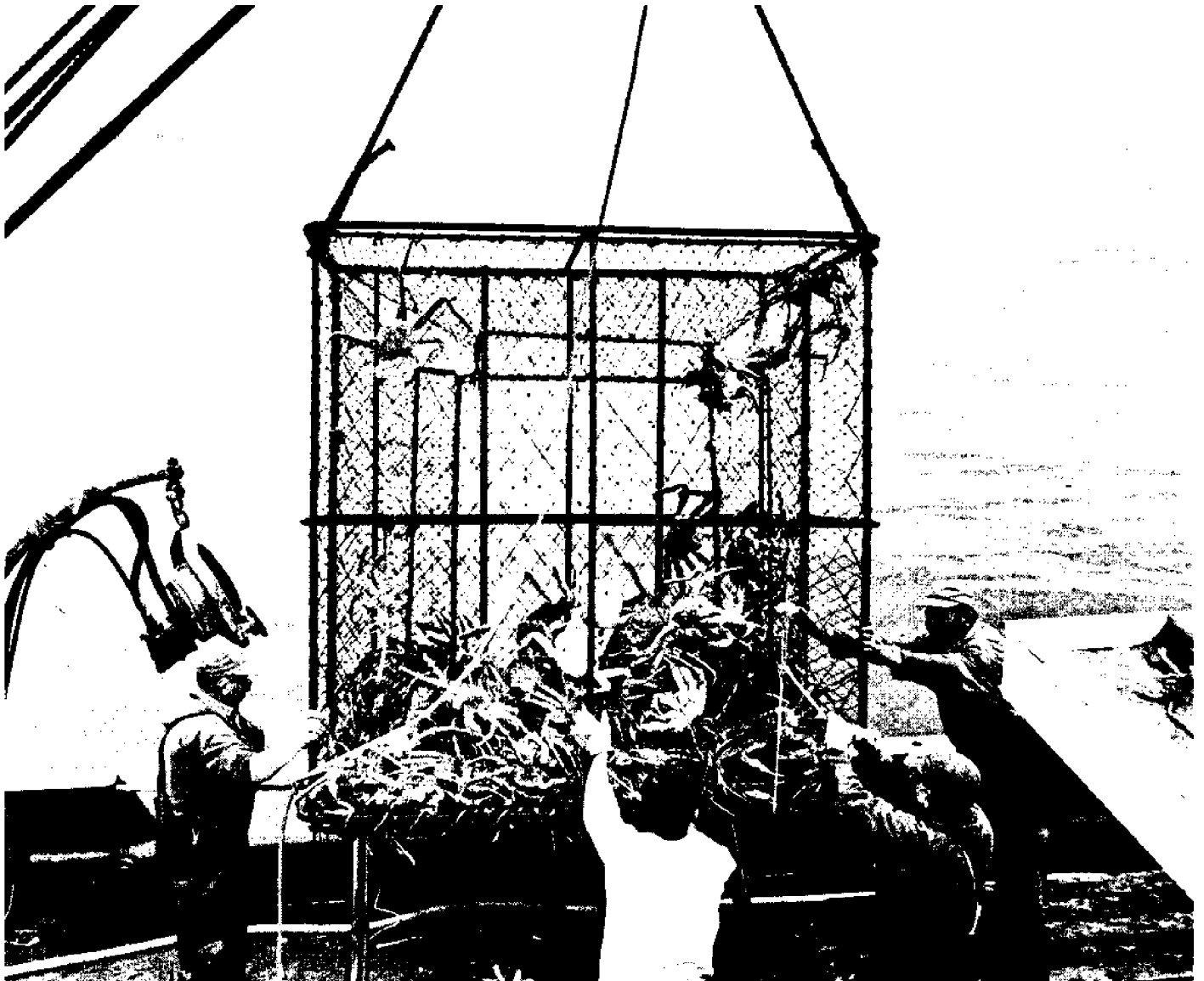


Hank Pennington

### Weight Approach

This calculation is based simply upon anticipated catch levels (by weight), species mix of the catch, and ex vessel prices of the various species. Income per trip (or other unit of production appropriate for your fishery) is calculated for each species. The income from all

species is then summed to produce a total income per trip. This total is multiplied by the number of trips to yield a total income per season or year. It is a tedious process if many species are involved, but it is not complicated. Worksheet 8 illustrates the process and shows the arithmetic.





# Income Calculation Weight Approach (Single Fishery)

(1)	ENTER	Estimated pounds (tons, etc.) of species #1 per trip or fishery*	_____
	x	Price per pound (ton, etc.)	_____
	=	ESTIMATED INCOME FROM SPECIES #1	\$ _____
	ENTER	Estimated pounds (tons, etc.) of species #2 per trip or fishery	_____
	x	Price per pound (ton, etc.)	_____
	=	ESTIMATED INCOME FROM SPECIES #2	\$ _____
	ENTER	Estimated pounds (tons, etc.) of species #3 per trip or fishery	_____
	x	Price per pound (ton, etc.)	_____
	=	ESTIMATED INCOME FROM SPECIES #3	\$ _____
	ENTER	Estimated pounds (tons, etc.) of species #4 per trip or fishery	_____
	x	Price per pound (ton, etc.)	_____
	=	ESTIMATED INCOME FROM SPECIES #4	\$ _____
	ENTER	Estimated pounds (tons, etc.) of species #5 per trip or fishery	_____
	x	Price per pound (ton, etc.)	_____
	=	ESTIMATED INCOME FROM SPECIES #5	\$ _____

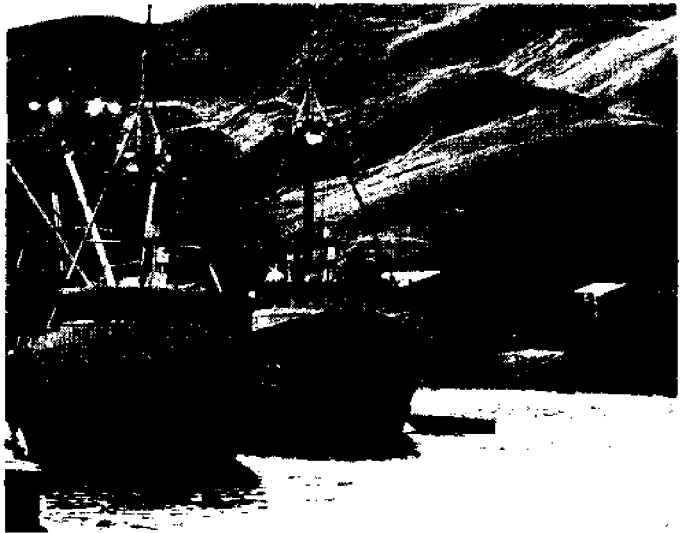
\*Use the unit of production that you prefer--day, trip, week, season, whatever is appropriate for your fishery.

- (2) ENTER Estimated income species #1 per trip or fishery \_\_\_\_\_  
 + Estimated income species #2 per trip or fishery \_\_\_\_\_  
 + Estimated income species #3 per trip or fishery \_\_\_\_\_  
 + Estimated income species #4 per trip or fishery \_\_\_\_\_  
 + Estimated income species #5 per trip or fishery \_\_\_\_\_  
 = TOTAL ESTIMATED INCOME TRIP OR FISHERY \$ \_\_\_\_\_
- (3) ENTER Total trips per fishery \_\_\_\_\_  
 x Total estimated income/trip \_\_\_\_\_  
 = GROSS INCOME PER FISHERY \$ \_\_\_\_\_
- (4) Repeat steps 1 through 3 for each additional year of projected income.

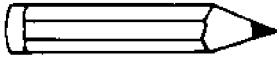
NOTE: Be careful that the estimated trip catch does not exceed your vessel's hold volume (unless you are delivering cod ends to a processor ship). The weight of fish per cubic foot of volume varies with refrigeration method if refrigeration is used. Figure approximately 40 lbs of fish per cubic foot if a 2:1 fish to ice ratio is used. Figure about 45 lbs of fish per cubic foot if refrigerated seawater is used and 63 lbs if there is no refrigeration.



Alaska Division of Tourism



Hank Pennington



## Expense Calculation

Worksheet 9 is a detailed approach to projecting fishing expenses. Its main function is to help jog your memory about the various factors to consider when thinking about the costs of fuel, food, repairs, and so on. Even if you do not fill in all of the blanks and do all of the arithmetic to arrive at a total expense figure for each relevant cost category, it is worthwhile to read through the worksheet.



Tricia Olsen

# Expense Calculation (Single Fishery)

## VARIABLE EXPENSES

### FUEL AND OIL

ENTER	Days running from home port to fishing grounds and return	_____
+	Days running for mechanical or gear repairs	_____
=	TOTAL--Home Port & Repairs	_____
x	24 Hours per day	_____ 24
x	Gal per hr running (main & auxiliary engines)	_____
x	Price per gal	_____
=	Fuel Cost--Home Port & Repairs	\$ _____
ENTER	Hours per trip running from grounds to delivery point and return	_____
+	Hours per trip running in search of fish	_____
=	TOTAL--Delivery & Search	_____
x	Gal per hr running (main engines only)	_____
x	Price per gal	_____
=	Fuel Cost Per Trip--Delivery & Search	\$ _____
ENTER	Days per trip fishing	_____
x	Hours per day fishing	_____
x	Gal per hr fishing (main engines only)	_____
x	Price per gal	_____
=	Fuel Cost Per Trip--Fishing	\$ _____

# Worksheet 9 Continued

57

	ENTER Hours per day auxiliary used	_____
	x Gal per hr for auxiliary power	_____
	x Days per trip (include port time)	_____
	x Price per gal	_____
	= Fuel Cost Per Trip--Auxiliary Power	\$ _____
	ENTER Engines hours per trip	_____
	+ Engines hours between oil changes	_____
	x Gals of oil per changes (total--all engines)	_____
	x Price per gal	_____
	= Lube Oil Cost Per Trip	\$ _____
	ENTER Fuel cost--Delivery and search	_____
	+ Fuel cost--auxiliary power	_____
	+ Fuel cost--fishing	_____
	+ Lube oil cost	_____
	= Fuel and Oil Cost Per Trip	\$ _____
	x Trips per fishery	_____
	= Fuel and Oil Cost Per Fishery	\$ _____
	+ Fuel cost--home port and repairs	_____
(A)	= TOTAL FUEL AND OIL COST PER FISHERY	\$ _____
	PROVISIONS (grocery and pharmacy items)	
	ENTER Days per trip	_____
	x Number of people onboard	_____
	x Cost per day per person	_____
	= Provisions Cost Per Trip	_____
	x Trips per fishery (factor in time for running from and to home port & for repairs)	_____
(B)	= PROVISIONS COST PER FISHERY	\$ _____

BAIT (some fisheries use more than one kind of bait)

ENTER	Pounds bait #1 per skate, pot or other gear	_____
x	Price bait #1 per pound	_____
=	Cost Bait #1 Per Skate, Pot, etc.	\$ _____
ENTER	Pounds bait #2 per skate, pot, or other gear	_____
x	Price per pound	_____
=	Cost Bait #2 Per Skate, Pot, etc.	\$ _____
ENTER	Cost bait #1	_____
+	Cost bait #2	_____
=	Total Cost of Bait Per Skate, Pot, etc.	\$ _____
x	Total number of skates, pots, etc., fished per day	_____
x	Number of fishing days per trip	_____
=	Total Bait Cost Per Trip	\$ _____
x	Trips per fishery	_____
(F)	= BAIT COST PER FISHERY	\$ _____

MISCELLANEOUS EQUIPMENT & SUPPLIES (boat hooks, buckets, pots and pans, safety equipment, etc.)

(G)	ENTER	ESTIMATED COST PER FISHERY	\$ _____
	÷	Trips per fishery	_____
	=	Cost Per Trip	\$ _____

FISH TAXES/FEES/ASSESSMENTS

ENTER	Pounds or number of fish taken per trip	_____
x	Assessment or tax rate per lb or fish	_____
=	Assessment or Tax Per Trip	\$ _____
x	Trips per fishery	_____
(H)	= ASSESSMENT OR TAX PER FISHERY	\$ _____

# Worksheet 9 Continued

59

**TRANSPORTATION (Personal flights, crew flights, etc.)**

(I) ENTER ESTIMATED TRANSPORTATION PER FISHERY \$ \_\_\_\_\_

÷ Trips per fishery \_\_\_\_\_

= Transportation Per Trip \_\_\_\_\_

**OTHER VARIABLE EXPENSES**

(J) ENTER OTHER EXPENSES \$ \_\_\_\_\_

÷ Trips per fishery (optional) \_\_\_\_\_

= Other Expenses Per Trip (optional) \$ \_\_\_\_\_

**CREWSHARE** (The list of items after "gross income" indicates expenses which may be deducted in part or in whole before crewshare is calculated. Make the deductions which are appropriate for your method of calculating crewshare.)

ENTER Gross income per fishery (from worksheet 7 or 8) \$ \_\_\_\_\_

- Fuel and oil \_\_\_\_\_

- Provision \_\_\_\_\_

- Gear maintenance \_\_\_\_\_

- Vessel maintenance \_\_\_\_\_

- Ice \_\_\_\_\_

- Bait \_\_\_\_\_

- Supplies \_\_\_\_\_

- Taxes/fees/assessments \_\_\_\_\_

- Transportation \_\_\_\_\_

- Other \_\_\_\_\_

= Adjusted Gross Income \$ \_\_\_\_\_

x Total crewshare percentage (EXCLUDE skipper if he/she is the vessel owner) \_\_\_\_\_

(K) = CREWSHARE COST PER FISHERY \$ \_\_\_\_\_

÷ Trips per fishery \_\_\_\_\_

= Crewshare Cost Per Trip \$ \_\_\_\_\_

VARIABLE EXPENSE SUMMARY

(A)	ENTER	Fuel and Oil	_____
(B)	+	Provisions	_____
(C)	+	Gear maintenance	_____
(D)	+	Vessel maintenance	_____
(E)	+	Ice	_____
(F)	+	Bait	_____
(G)	+	Miscellaneous equipment & supplies	_____
(H)	+	Fish taxes/fees/assessments	_____
(I)	+	Transportation	_____
(J)	+	Other variable expenses	_____
(K)	+	Crewshare	_____
	=	TOTAL VARIABLE EXPENSES	\$ _____

FIXED EXPENSES (Annual Basis)

INSURANCE

	ENTER	Vessel survey value	\$ _____
	x	Insurance rate (hull)	_____ %
	=	Vessel Hull Insurance	_____
	+	Vessel P and I (liability)	_____
	=	Vessel Insurance	_____



# Worksheet 9 Continued

61

ENTER P and I insurance cost per crewman \_\_\_\_\_  
x Number of crewmen \_\_\_\_\_  
= Crew Insurance \_\_\_\_\_  
+ Vessel insurance (above) \_\_\_\_\_  
(L) = TOTAL INSURANCE COST \$ \_\_\_\_\_

## VESSEL MAINTENANCE

ENTER Propulsion and hydraulic \_\_\_\_\_  
+ Hull and superstructure \_\_\_\_\_  
+ Electronic equipment/electrical system \_\_\_\_\_  
+ Refrigeration system \_\_\_\_\_  
+ Other \_\_\_\_\_  
(M) = TOTAL VESSEL MAINTENANCE PER FISHERY \$ \_\_\_\_\_

(N) ANNUAL MOORAGE AND HAUL-OUT FEES

(O) ANNUAL WAREHOUSE AND STORAGE COSTS \$ \_\_\_\_\_

## VEHICLE

ENTER Fuel costs \_\_\_\_\_  
+ Maintenance \_\_\_\_\_  
+ Insurance \_\_\_\_\_  
= Vehicle Costs \_\_\_\_\_  
x Percentage of time used for fishing \_\_\_\_\_  
(P) = TOTAL VEHICLE COSTS \$ \_\_\_\_\_

## BUSINESS ADMINISTRATION

ENTER	Annual telephone costs	_____
+	Annual utility costs	_____
+	Annual office rent (if applicable)	_____
+	Office supplies and postage	_____
+	Other (clerical/publications, etc.)	_____
(Q)	= TOTAL BUSINESS ADMINISTRATION COSTS	\$ _____

## PROFESSIONAL FEES

ENTER	Accountant/tax preparer	_____
+	Legal	_____
+	Other	_____
(R)	= TOTAL PROFESSIONAL FEES	\$ _____

(S)	ANNUAL TRAVEL AND ENTERTAINMENT COSTS	\$ _____
-----	---------------------------------------	----------

## INTEREST ON BUSINESS DEBTS

ENTER	Annual interest--loan #1	_____
+	Annual interest--loan #2	_____
+	Annual interest--charge accounts	_____
+	Other interest (cannery account)	_____
(T)	= TOTAL INTEREST CHARGES	\$ _____

# Worksheet 9 Continued

63

DEPRECIATION (Use only for profit analysis.) Use depreciation schedule from federal income taxes or guidelines in Appendix I.

ENTER	Electronic equipment depreciation	_____
+	Hull	_____
+	Engine	_____
+	Fishing and deck gear	_____
+	Warehouse	_____
+	Office	_____
+	Vehicle	_____
+	Other	_____
(U)	= TOTAL DEPRECIATION EXPENSES	\$ _____

PRINCIPAL (Use for cash balance or cash flow analysis.)

ENTER	Annual principal payments - loan #1	_____
+	Annual principal payments - loan #2	_____
(V)	= TOTAL PRINCIPAL PAYMENTS	\$ _____

DUES/LICENSES

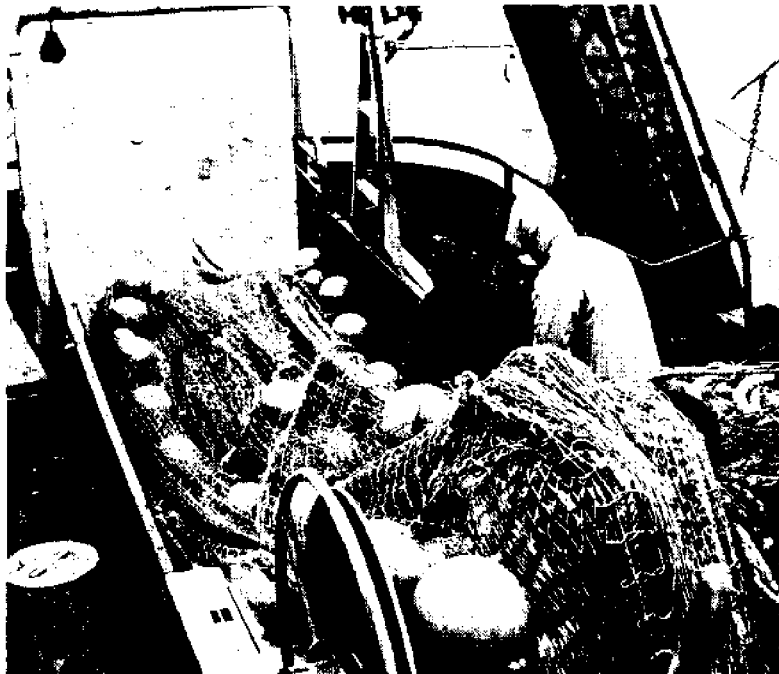
ENTER	Fishing licenses (all fisheries)	_____
+	Organization dues/charges	_____
+	Vessel licenses	_____
+	Vehicle licenses	_____
+	Other	_____
(W)	= TOTAL DUES AND LICENSES	\$ _____
(X)	OTHER FIXED EXPENSES	\$ _____

## FIXED EXPENSES SUMMARY

(L)	ENTER	Insurance	_____
(M)	+	Vessel maintenance	_____
(N)	+	Moorage and haul-out	_____
(O)	+	Warehouse/storage	_____
(P)	+	Vehicle fuel/maintenance/insurance	_____
(Q)	+	Business administration	_____
(R)	+	Professional fees	_____
(S)	+	Travel and entertainment	_____
(T)	+	Interest on business debts	_____
(U)	+	Depreciation (for profit calculation)	_____
(V)	+	Principal (for cash balance calculation)	_____
(W)	+	Dues/licenses	_____
(X)	+	Other	_____
	=	TOTAL FIXED EXPENSES	\$ _____
	x	Number of months vessel used this fishery	_____
	÷	Number of months vessel used per year	_____
	=	TOTAL FIXED EXPENSES PER FISHERY	\$ _____
NET INCOME			
	ENTER	Gross income per fishery	_____
	-	Variable expenses per fishery	_____
	-	Fixed expenses per fishery	_____
	+	Principal payments per fishery	_____
	=	Net Income (profit)	\$ _____

NET CASH

ENTER	Net income	\$ _____
+	Depreciation per fishery	_____
-	Principal payments per fishery	_____
+	Net Cash (for living expenses, taxes, personal debt)	\$ _____



Oregon State University Sea Grant Program



# Pro Forma Income Statement and Cash Balance

Worksheet 10 uses the figures from Worksheets 8 and 9 to do your own pro forma income and cash balance sheets.

GROSS INCOME FROM FISH SALES \$ \_\_\_\_\_

## VARIABLE EXPENSES

Fuel and oil	_____	
Provisions	_____	
Gear maintenance	_____	
Vessel maintenance	_____	
Ice	_____	
Bait	_____	
Supplies and equipment	_____	
Taxes, fees, assessments	_____	
Transportation	_____	
Crewshare	_____	
Other	_____	_____

Gross Income From Operations \$ \_\_\_\_\_

## FIXED EXPENSES

Insurance	_____	
Vessel maintenance	_____	
Moorage and haul-out	_____	
Warehouse and storage	_____	
Vehicle	_____	
Business administration	_____	
Professional fees	_____	
Travel and entertainment	_____	
Interest	_____	
Depreciation	_____	
Dues and licenses	_____	
Other	_____	_____

Net Income For Income Tax Reporting \$ \_\_\_\_\_

## CASH BALANCE

Net income		\$ _____
Plus: Depreciation		_____
Less: Principal payments	_____	

NET CASH BALANCE (living expenses,  
taxes, personal debt) \$ \_\_\_\_\_

# Break-Even Analysis

Craig Wiese



Craig Wiese



## Reasons Needed

- Break-even analysis provides a way to determine the quantity of fish that must be caught at a given price in order to meet anticipated expenses, including crewshares and owner income. It can be used to show how catches must change if prices or expenses are changed. Conversely, it can show how prices or expenses should be altered if catches change.
- The break-even point is a good budgeting tool. Before a season begins, the break-even point can be calculated and the catch or income can be allocated among the expected trips. The budgeted income per trip can then be compared with actual income as the season progresses. This process allows changes to be made in fishing, business, or living strategies in time to compensate for trends above or below the budgeted break-even track.

Don Kramer



### Definitions

- Break-even point. The point at which gross income equals expenses, including an income for the skipper-owner.
- Break-even procedure. Here is an example of a break-even procedure: Assume that a fisherman would like to purchase a new salmon seine boat. One of his first questions is how much will have to be earned from seining to cover fishing expenses, make boat payments, and take home enough money to live comfortably. Let's work through the break-even procedure to find an answer.

### Assumptions and Conditions

- Projected boat payments. Assume that our fisherman will have to borrow \$125,000 to obtain the vessel he desires. We will set the terms at 12 years and 12 percent interest, resulting in annual boat payments of \$20,180.
- Crewshare arrangements. Each crewman receives 12 percent of gross income. Crew expenses are deducted from this 12 percent share. We will make food and fuel the only crew deductions. Food is split four ways among the three crewmen and the skipper. In this case, we will set each crewman's fuel share proportionate to his/her crewshare, or 12 percent of the total bill. Food costs will be split evenly among the crew and skipper, so each will pay 25 percent of the total food bill. Collectively, then, the crew pays 36 percent (3 x 12 percent) of fuel and 75 percent (3 x 25 percent) of the food bill. Therefore, the skipper/owner is responsible for 25 percent of projected food costs and 64 percent of the fuel bill, in addition to all other fishing expenses.
- Living expenses. Our fisherman would like to have an income after fishing expenses, including boat payments, of \$40,000.

- Projected fish prices, weights, and species mix.

Fish prices:	Pink salmon.....	45¢/lb
	Chum salmon.....	55¢/lb
Weights:	Pink salmon.....	3.75 lbs/fish
	Chum salmon.....	8.00 lbs/fish
Species Mix:	Pink salmon.....	85% by number
	Chum salmon.....	15% by number

- Aquaculture Assessment. Three percent of gross income.



Projected Fishing Expenses (Adjusted for crew contributions)

• Variable (operating) Expenses

Fuel (crewshare = 36%)	\$1,900 x .64 =	\$1,216
Provisions (25% per person)	1,750 x .25 =	438
Vessel maintenance		2,400
Gear & equipment maintenance		1,200
Transportation & freight		900
Supplies		1,200
Miscellaneous		500
Crewshare		
Aquaculture assessment		
		<hr/>
ADJUSTED TOTAL (less crewshare and aquaculture assessment)		<u>\$7,854</u>

Neither the crewshare nor the aquaculture assessment is calculated (each being derived from gross income, which is not yet determined). These two expenses will be taken into consideration when the break-even calculation is made.

• Fixed Expenses

Vessel insurance	\$ 4,900
Liability insurance (P&I)	450
Moorage & haul-out	450
Warehouse & storage	800
Vehicle fuel & maintenance	1,050
Business administration	1,050
Professional fees	500
Licenses & dues	350
Boat payment	<u>20,180</u>
Total	\$29,730
TOTAL EXPENSES (excluding crewshare and aquaculture)	<u>\$37,584</u>

### Calculating the Break-Even Point

Break-even Point (BEP) Basic Formula:

$$\begin{aligned} \text{BEP} &= \frac{\text{Fishing expenses} + \text{Living expenses}}{1 - \text{Crewshare percentage} + \text{Aquaculture percentage}} \\ \text{BEP} &= \frac{\$37,584 + \$40,000}{1 - (.36 + .03)} = \frac{\$77,584}{.61} = \$127,187 \end{aligned}$$

Notice that the three crewmen, each receiving a 12 percent crewshare, receive a total of 36 cents from every dollar (36 percent or .36) that must be grossed by the boat to cover expenses of \$77,584. In addition, 3 cents of every dollar (3 percent or .03) goes to the regional aquaculture association (in parts of Alaska). The decimal fraction .61 at the bottom of the equation representing our example indicates that only 61 cents of every dollar grossed is left to be applied to each dollar of other fishing and living expenses.

In other words, the boat must gross \$1.64 in order to provide the owner \$1.00 to cover other fishing and living expenses after paying crewshares and an aquaculture assessment. In the example, our fisherman must earn \$127,187 to cover \$77,584 in other fishing and living expenses. The crew and aquaculture association get the rest.

- Break-even Catch. At this point, we know how much money must be grossed to break even, but not how many fish this figure represents.

In many Alaskan fisheries, including the salmon seine fishery, more than one species is caught in significant numbers during the course of a season. Each species typically has a different value because of differences in weight and in ex vessel prices.

One way to convert break-even income to break-even catch is to make up an "average fish." Its value represents the mixture of prices and weights in proportion to the percentage of each species in the catch. In other words, we want the weighted average value per fish. It sounds complicated, but it's not.

Let's go back to our assumptions about weight, price, and species mix. These statistics will be needed to calculate a weighted average value per fish and ultimately a break-even catch.

1. Weights and prices:

Pink salmon	3.75 lbs/fish @ \$.45/lb
Chum salmon	8.00 lbs/fish @ \$.55/lb

2. Species Mix:

Pink salmon	85%
Chum salmon	15%

3. Weighted average value:

(0.85 x 3.75 lbs/fish x \$.45/lb) = \$1.434/fish (pink)  
 + (0.15 x 8.00 lbs/fish x \$.55/lb) = \$0.660/fish (chum)  
 Weighted average value = \$2.094/fish (combined)

4. Break-even catch (BEC):

BEC =  $\frac{\text{Break-even income}}{\text{Value per fish}} = \frac{\$127,187}{\$2.094/\text{fish}} = 60,739 \text{ fish}$

Assuming that our borrowing terms, prices, weights, species mix of fish, and operating and fixed expenses are projected accurately, the results show that our fisherman can afford a boat, at least for one year, if approximately 61,000 fish can be caught. As a hedge against inflation, which may rise more rapidly than fish prices during the term of the loan, it may be a good idea to add a few thousand fish to the break-even catch.



If you measure your catch in pounds, tons, or another unit of weight rather than in numbers of fish, then refer to Worksheet 11 which follows. Worksheet 11 illustrates how to calculate the break-even catch in units of weight as well as in numbers of fish.

Budgeting. Once a projected break-even income has been determined, it is often useful to divide that figure by the number of fishing trips expected in the proposed fishery. This division will yield a projected break-even income per trip.

When the season gets under way, you might find that certain expenses or ex vessel prices are higher or lower than expected. In such cases, it is easy to recalculate the break-even income and catch using the updated figures. As the season moves along, compare projected income and expenses per trip with actual trip records to chart the progress toward desired net profit. If actual income is significantly lower than projected, you have a guideline for making appropriate changes to your fishing strategy or your lifestyle.

# Break-Even Analysis

1. List assumptions and conditions

- a. Projected loan payments \_\_\_\_\_
- b. Crewshare arrangements \_\_\_\_\_
- c. "Living expenses" \_\_\_\_\_
- d. Fish prices
 

	species #1	species #2	species #3
Fish prices	_____	_____	_____
Species percentage	_____	_____	_____
Average weights	_____	_____	_____
- e. Other \_\_\_\_\_

2. List expenses (subtract crew contributions)

VARIABLE EXPENSES---list may vary from person to person

- ENTER Fuel and oil \_\_\_\_\_
- + Provisions \_\_\_\_\_
- + Vessel maintenance \_\_\_\_\_
- + Gear maintenance \_\_\_\_\_
- + Ice \_\_\_\_\_
- + Bait \_\_\_\_\_
- + Supplies and equipment \_\_\_\_\_
- + Taxes, fees, assessments \_\_\_\_\_
- + Transportation \_\_\_\_\_
- + Miscellaneous \_\_\_\_\_
- = ADJUSTED TOTAL (less crew and assessment/tax) \$ \_\_\_\_\_

**FIXED EXPENSES**

ENTER	Insurance	_____
	+ Moorage and haul-out	_____
	+ Warehouse and storage	_____
	+ Vehicle	_____
	+ Business administration	_____
	+ Professional fees	_____
	+ Travel and entertainment	_____
	+ Loan payments	_____
	+ Dues/licenses	_____
	<b>TOTAL</b>	<b>\$ _____</b>
	<b>TOTAL VARIABLE AND FIXED EXPENSES</b>	<b>\$ _____</b>

**3. BREAK-EVEN POINT (BEP)**

$$\begin{aligned}
 \text{BEP} &= \frac{\text{Fishing expenses} + \text{Living expenses}}{1 - \left( \text{Crew percentage} + \text{Assessment/tax percentage} \right)} = \text{_____} \\
 &= \frac{\$ \text{_____} + \$ \text{_____}}{1 - \left( \text{_____} \% + \text{_____} \% \right)} \\
 &= \$ \text{_____}
 \end{aligned}$$

(Convert percentage to decimal number then divide decimal number into EXPENSE.)

BEP = \$ \_\_\_\_\_

## 4. BREAK-EVEN CATCH (BEC) by weight

- a. Determine the composite price per pound (ton or other unit of weight) of all species to be caught:

ENTER	Percent species #1 x price per lb (ton, etc.)	\$ _____	per lb(ton,etc.)
+	Percent species #2 x price per lb (ton, etc.)	\$ _____	per lb(ton,etc.)
+	Percent species #3 x price per lb (ton, etc.)	\$ _____	per lb(ton,etc.)
+	Repeat for remaining species	\$ _____	per lb(ton,etc.)
=	COMPOSITE PRICE	\$ _____	per lb(ton,etc.)

- b. Determine the break-even catch (BEC):

BEC	=	$\frac{\text{Break-Even Point}}{\text{Composite Price}}$
	=	\$ $\frac{\text{_____}}{\text{_____ per lb (ton, etc.)}}$
BEC	=	_____ lbs (ton, etc.)

## 5. BREAK-EVEN CATCH (BEC) in numbers of fish

If you measure catch in numbers of fish rather than numbers of pounds or tons, then divide break-even by the composite value per fish. First determine the composite value per fish:

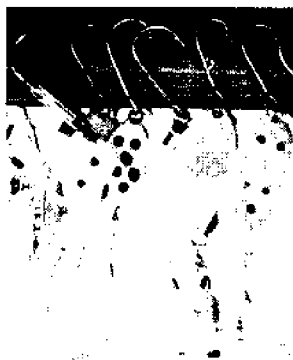
- a. Composite value per fish

ENTER	Percent species #1 x avg. wt. x avg. price	\$ _____	per species #1
+	Percent species #2 x avg. wt. x avg. price	\$ _____	per species #2
+	Percent species #3 x avg. wt. x avg. price	\$ _____	per species #3
=	COMPOSITE VALUE PER FISH	\$ _____	per fish

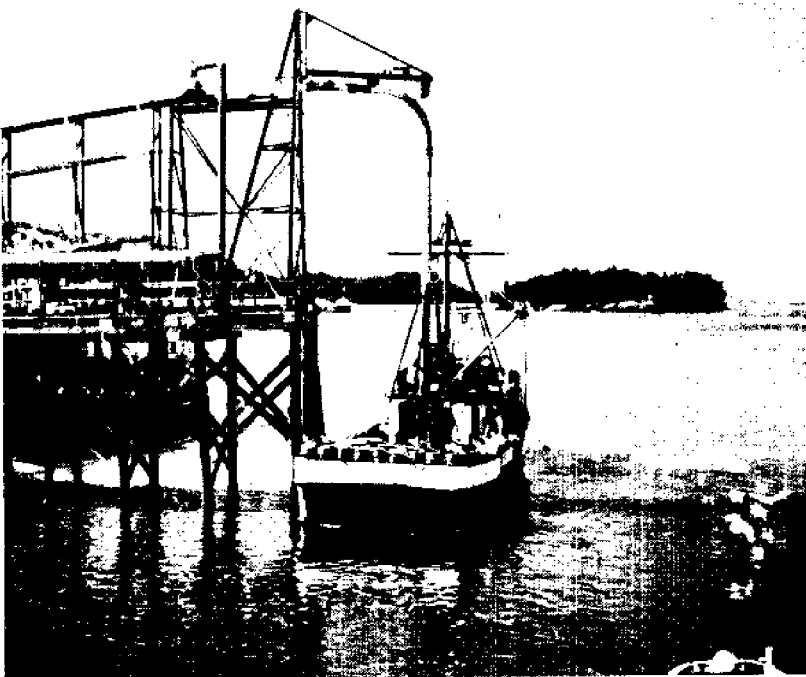
- b. Break-even catch in fish

BEC	=	$\frac{\text{Break-Even Point}}{\text{Composite Value Per Fish}}$
BEC	=	_____ fish

# Alternative Use Comparison



Brian Paust



Craig Wiese



Craig Wiese

## Reason Needed

- The alternative use comparison is a convenient shortcut to determining which of two or more uses for your boat will make the most money. Such a comparison is more convenient than doing complete pro forma profit or loss analyses of each alternative. In a situation requiring that you choose between two fisheries (or between fishing and chartering or fishing and staying in port), the alternative use procedure will help.

## Explanation

- The alternative comparison process looks at income and expenses that are either gained or lost by choosing one alternative over another. When you decide to go with one alternative, you are saddled with the income, expenses, and sometimes conversion costs which are associated with that alternative. At the same time, you have given up the potential income as well as the expenses of the other alternative. It is simply a matter of choosing which has the best profit potential.
- Two fundamental rules govern this comparison. The first is to deal only with the costs and incomes which are different between the choices. If income plus the costs of fuel,

provisions, gear maintenance, and crewshare are the only factors which differ between two fisheries, then these are the only elements you should consider.

The second rule is to always consider the accuracy and reliability of the numbers you are using. The axiom often used in computer work is just as applicable here: "Garbage in, garbage out!" If the numbers you put into the calculations are no good, the numbers you get out won't be any better--nor will the decisions. You will often be making educated guesses; the trick is to be conservative rather than overly optimistic.

- The comparison process can be outlined in the following way:

1. Choose the alternative with the highest gross income to be alternative #1. List the income for this alternative.

2. Determine the gross income for the other alternative.
3. List the expenses for each alternative that will be significantly different from one another.
4. Total the expenses for each alternative. These are "lost" expenses.
5. Determine the net income for each alternative.

After you have calculated which alternative is economically the best, you can consider non-economic factors. These might include personal preference, safety of the crew and vessel, the probability that something will go wrong, and family obligations.

**AN EXAMPLE:** Suppose you have winter-fished for Tanner crab during the past few years, but are considering seining for bait herring instead.

You know that you will have to buy a new seine for \$30,000. In addition, you'll have to purchase a \$5,500 power block. This initial outlay of \$35,500 is made more palatable by the fact that you can easily sell the seine for \$25,000 if the herring fishery fizzles, and the power block will go quickly at \$4,000. So you can recapture \$29,000. Your net capital costs are figured at \$6,500 ( $\$35,500 - \$29,000 = \$6,500$ ). If you borrow \$20,000 on a one-year note to purchase the new equipment, and the interest rate is 15 percent, your interest expense will be \$3,000 (assuming you wait 12 months to repay the loan).



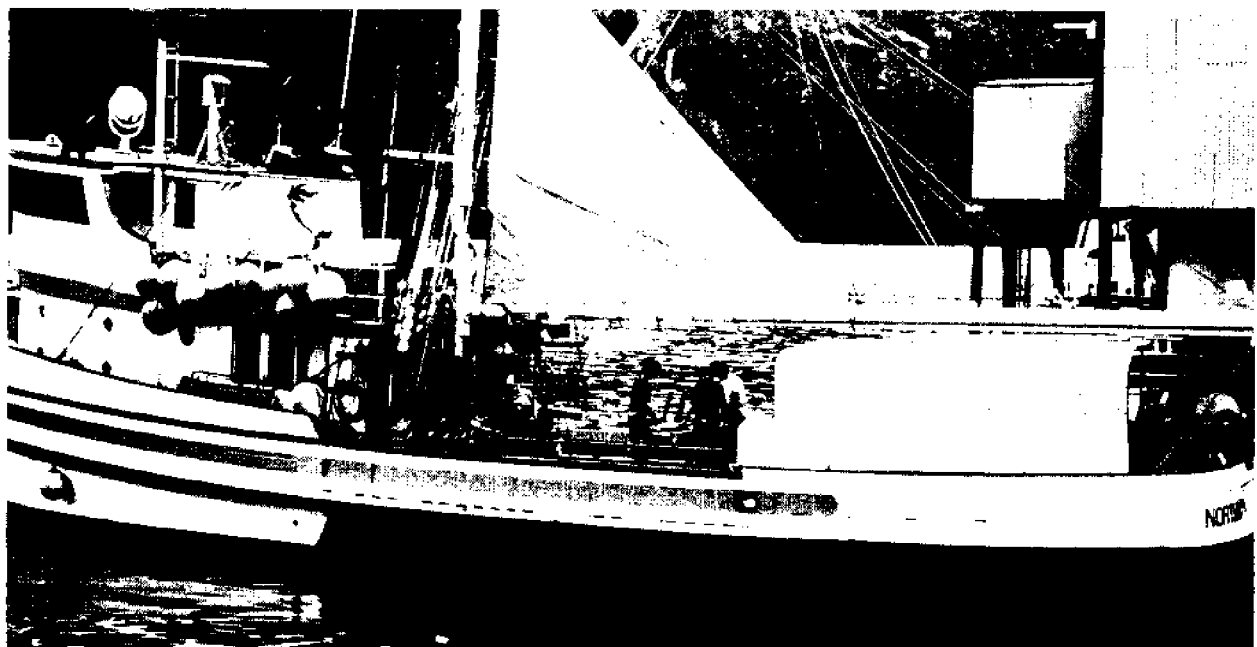
Herring seining will require three crew members compared with two for crabbing. In either fishery, each crewman gets a crewshare of 10 percent of gross income. You estimate that your fuel bill will drop from \$4,000 to \$3,000, but groceries will cost an additional \$1,000. There is no bait cost in seining, so you will save about \$3,000 in bait costs. Insurance for the additional crewman will be \$600. You won't suffer any pot losses, which should eliminate \$4,500 from gear maintenance costs. In addition, boat maintenance for herring seining should be about \$1,500 less.

If you seine, your estimated catch is 500 tons of herring at \$135 per ton. If you crab, you anticipate 100,000 lbs of tanner crab at 55¢ per pound. Expected incomes then will be \$67,500 or \$55,000, respectively.

Now let us proceed through the comparison format to see which alternative looks most profitable assuming everything goes as planned.

In the following example, the profit difference is positive, which means that the fishery with the "gained" income and "gained" expenses was the most profitable. This was the herring seine fishery. However, the estimated profit increase over the more familiar tanner crab fishery was only \$2,150. In view of the guesstimates about income and expenses, will you go into a new fishery based upon a \$2,150 profit increase? Perhaps you will, if the future of the new fishery looks brighter than the old fishery, or if non-financial reasons make it preferable.

Worksheet 12 is a blank sheet like the example, allowing you to do an alternative use comparison for your own figures.



Don Kramer

## Alternative Use Comparison

## INCOME

	ALTERNATIVE #1	ALTERNATIVE #2
ENTER Value per day or trip		
x Number of trips		
= Fishing Income	\$67,500	\$55,000
+ Capital sales	-0-	-0-
= TOTAL INCOME	\$67,500	\$55,000

## EXPENSES

ENTER Fuel	\$ 3,000	\$ 5,000
+ Provisions	1,000	
+ Gear maintenance		4,500
+ Vessel maintenance		1,500
+ Ice		
+ Bait		3,000
+ Supplies/equipment		
+ Taxes/fees/assessments		
+ Transportation		
+ Crewshare	20,250	11,000
+ Insurance	600	
+ Moorage		
+ Warehouse/storage		
+ Vehicle		
+ Business administration		
+ Professional fees		
+ Interest	3,000	
+ Depreciation		
+ Capital purchases	6,500	
+ Dues/licenses		
= TOTAL EXPENSES	\$34,350	\$24,000

## NET PROFIT

ENTER Total Income	\$67,500	\$55,000
- Total Expenses	34,350	24,000
= NET PROFIT	\$33,150	\$31,000

## PROFIT DIFFERENCE

ENTER Alternative #1	\$33,150	
- Alternative #2	31,000	
= PROFIT DIFFERENCE	\$ 2,150	

## Alternative Use Comparison

## INCOME

	ALTERNATIVE #1	ALTERNATIVE #2
ENTER Value per day or trip	_____	_____
x Number of trips	_____	_____
= Fishing Income	_____	_____
+ Capital sales	_____	_____
= TOTAL INCOME	\$ _____	\$ _____

## EXPENSES

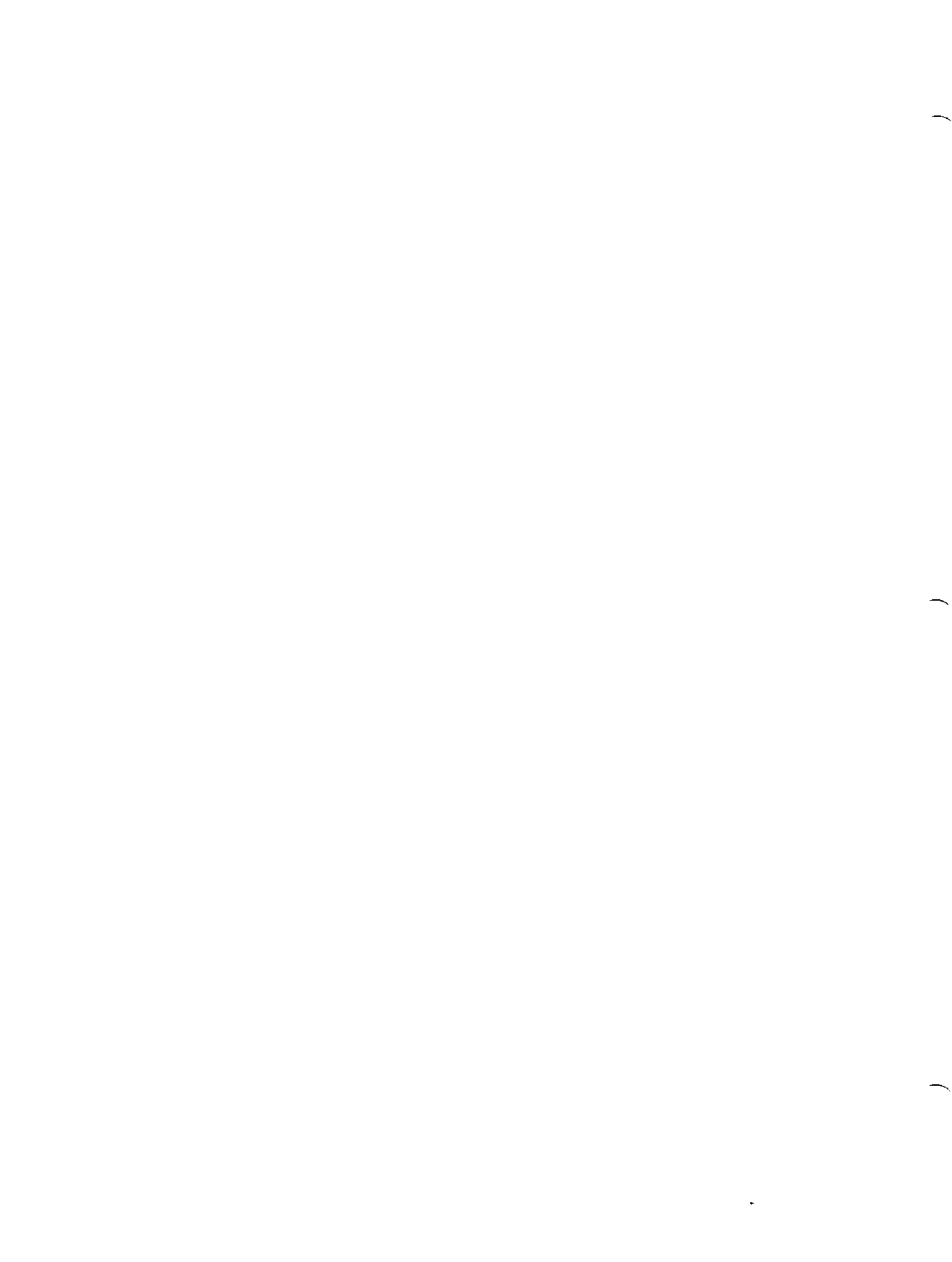
ENTER Fuel	_____	_____
+ Provisions	_____	_____
+ Gear maintenance	_____	_____
+ Vessel maintenance	_____	_____
+ Ice	_____	_____
+ Bait	_____	_____
+ Supplies/equipment	_____	_____
+ Taxes/fees/assessments	_____	_____
+ Transportation	_____	_____
+ Crewshare	_____	_____
+ Insurance	_____	_____
+ Moorage	_____	_____
+ Warehouse/storage	_____	_____
+ Vehicle	_____	_____
+ Business administration	_____	_____
+ Professional fees	_____	_____
+ Interest	_____	_____
+ Depreciation	_____	_____
+ Capital purchases	_____	_____
+ Dues/licenses	_____	_____
= TOTAL EXPENSES	\$ _____	\$ _____

## NET PROFIT

ENTER Total income	\$ _____	\$ _____
- Total expenses	_____	_____
= NET PROFIT	\$ _____	\$ _____

## PROFIT DIFFERENCE

ENTER Alternative #1	\$ _____	\$ _____
- Alternative #2	_____	_____
= PROFIT DIFFERENCE	\$ _____	\$ _____



# Cash Flow Statement

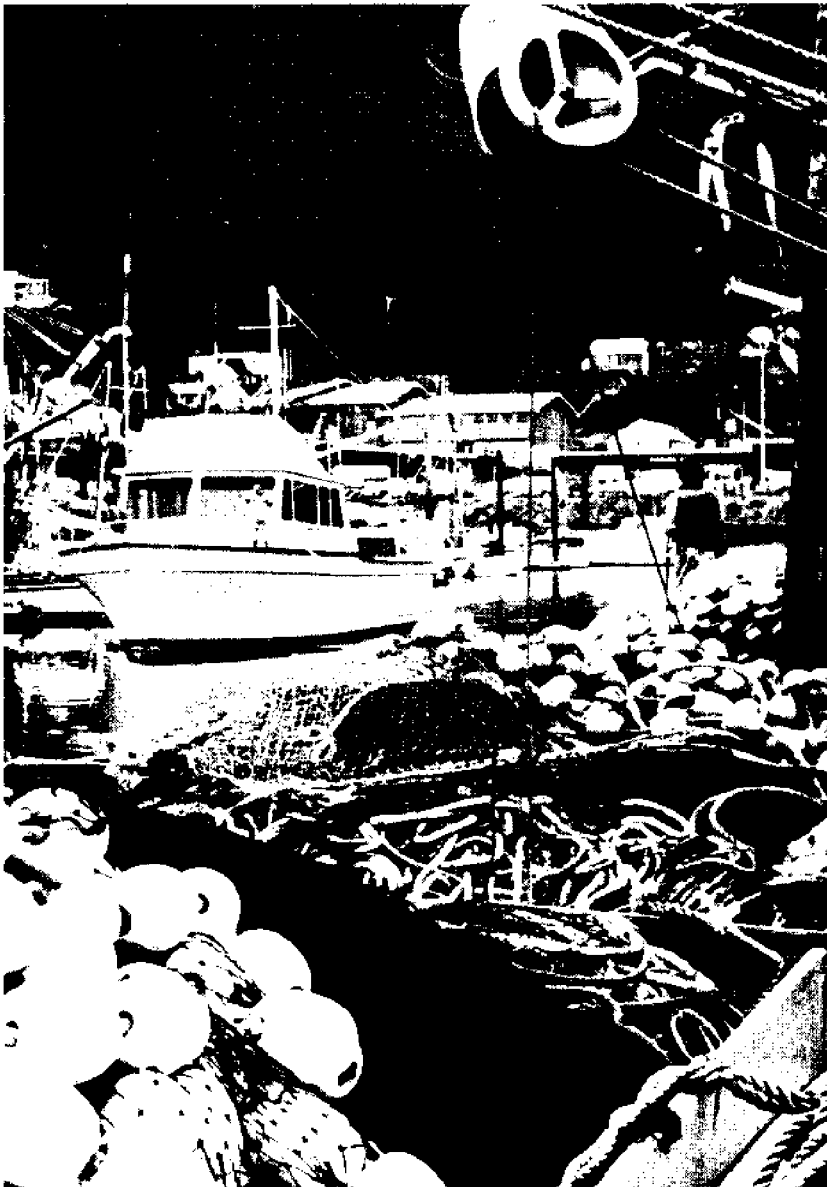
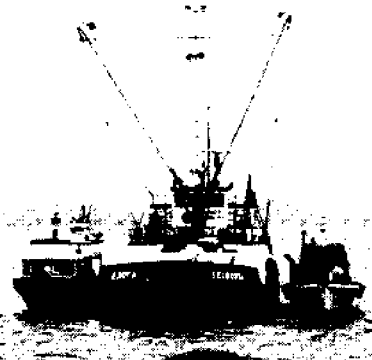
## Reasons Needed

- A cash flow statement is a planning tool for projecting when and how much money is coming in and going out. It allows you to time saving, spending, and borrowing to coincide with debt obligations, working capital needs, and living expenses.
- The cash flow statement is often required by lenders in the form of a three- to five-year running pro forma income statement. The purpose is to show the lender that you can make your loan payments in addition to an adequate living.
- Once the cash flow statement is prepared for planning and budgeting purposes, it can later be used to evaluate actual income and expense performance during the period for which the statement was prepared. It becomes a tool to judge whether actual performance is above or below expectations.

## Definitions

- Cash flow. A stream of cash receipts and disbursements over a given period of time. An "annual" cash flow statement details monthly cash receipts and expenses for 12 consecutive months. Cash flow statements are also prepared for a period of

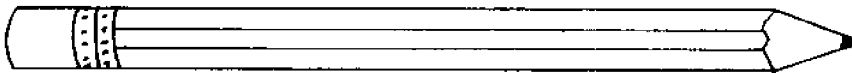
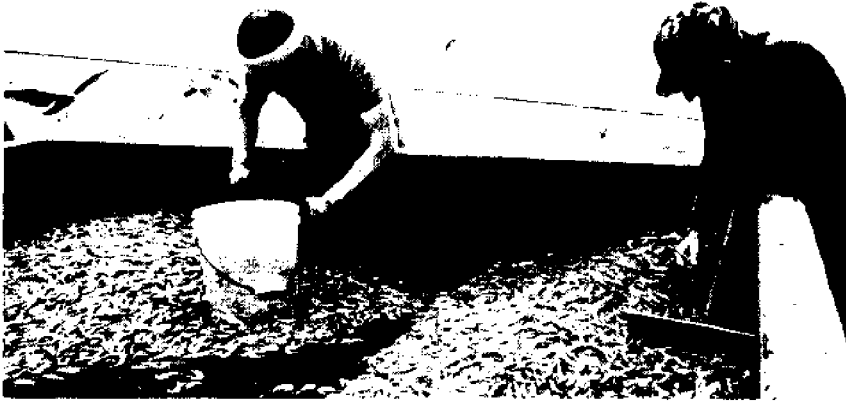
Craig Wiese



several years on a yearly basis.

- Budget. Itemized estimate of expected revenues and expenditures over a period of time.

Oregon State University MAP



### Explanations

- The cash flow statement is perhaps the most informative and important budgeting tool. Cash flow statements come in two varieties, depending upon the period involved. The annual cash flow statement (Worksheet 13) charts projected cash income and expenses on a month-to-month basis for a calendar or fiscal year. The long-term statement (Worksheet 14) covers any number of years having financial significance to you. The number may reflect the years you intend to keep your vessel, or cycles for the species you fish, or simply five years because planning any further ahead than that is too uncertain.
- The cash flow format is similar to the pro forma income statement with family living expenses, taxes, and loan payments deducted after net profit is calculated. The income portion usually is dominated by the sale of fish products. However, it also includes the sale of your fishing business assets such as a vessel, gear, permit or vehicle. Additional income may be generated from dividends or interest from business investments, off-season wages from other fishing employment, charters, tendering contracts, and other sources. Money borrowed for capital asset purchases is also included. When estimating fish sales in either the annual or multi-year cash flows, keep in mind the trends in fish prices, fishing effort, and natural fish population cycles.
- Fishing expenses have cyclic highs and lows. Highest annual expenses are usually correlated with the fishing seasons and the preparatory period before fishing. This is the time when short-term borrowing is often necessary. When plotting cash flows over a period of years, remember to include the extra expenses in the years when an overhaul, major periodic maintenance, or equipment replacement will be needed.

- Family living expenses include similar periodic expenditures for home improvements, trips back home, braces for the kids, college, and other large expenses which are somewhat out of the ordinary, but also somewhat predictable.
  - Income taxes pose a problem when you are preparing a cash flow statement because they are an expense too large to ignore but too complex for most of us to calculate. The alternatives are to learn more about taxes or to have someone else--normally an accountant--estimate taxes for you. If you can lay out the income and expenses for an annual or multi-year cash flow statement, an accountant or tax preparer who is familiar with fishermen's taxes should be able to make fairly close tax estimates, taking into account vessel and equipment depreciation and investment tax credits as well as other business, individual or family deductions. Another approach is to assume that profit in excess of living expenses will be put into a tax deferred capital construction fund or retirement plan. Then use the Internal Revenue Service tax tables to estimate taxes on your living expenses. Remember to
- reduce this tax estimate by any credits you have coming, including investment tax credits if you purchase capital assets.
- After income taxes are estimated and long-term loan payments added in, the net cash balances can be calculated for each month of an annual statement or each year of a multi-year cash flow. The timing and size of cash surpluses and deficits will then be illustrated. It is at this point that short-term borrowing and repayment are plugged in to match the timing of cash deficits and surpluses. The final cash balances are calculated after short-term borrowing needs and subsequent loan payments are determined. This final cash balance then becomes the beginning balance for the next month of an annual statement or the next year of a multi-year statement.

Craig Wiese



## Annual Cash Flow Statement

	JAN.	FEB.	MAR.	APR.
ENTER: BALANCE FORWARD (from previous month)	_____	_____	_____	_____
<u>INCOME</u>				
+ Fishing sales	_____	_____	_____	_____
+ Sale of equip. or gear	_____	_____	_____	_____
+ Other income	_____	_____	_____	_____
+ Long-term loans	_____	_____	_____	_____
=	_____			
<u>EXPENSES</u>				
ENTER: Fuel	_____	_____	_____	_____
+ Provisions	_____	_____	_____	_____
+ Gear maintenance	_____	_____	_____	_____
+ Vessel maintenance	_____	_____	_____	_____
+ Ice	_____	_____	_____	_____
+ Bait	_____	_____	_____	_____
+ Supplies/equipment	_____	_____	_____	_____
+ Taxes/fees/assessments	_____	_____	_____	_____
+ Crewshare	_____	_____	_____	_____
+ Insurance	_____	_____	_____	_____
+ Moorage	_____	_____	_____	_____
+ Warehouse/storage	_____	_____	_____	_____
+ Vehicle	_____	_____	_____	_____
+ Business administration	_____	_____	_____	_____
+ Professional fees	_____	_____	_____	_____
+ Dues/licenses	_____	_____	_____	_____
=	_____			
ENTER: TOTAL INCOME	_____	_____	_____	_____
- Total Expenses	_____	_____	_____	_____
=	_____			
- Family living expenses	_____	_____	_____	_____
- Capital purchases	_____	_____	_____	_____
- Income taxes	_____	_____	_____	_____
- Long-term loan pmnts.	_____	_____	_____	_____
=	_____			
+ Short-term borrowing	_____	_____	_____	_____
- Short-term repayment	_____	_____	_____	_____
=	_____			

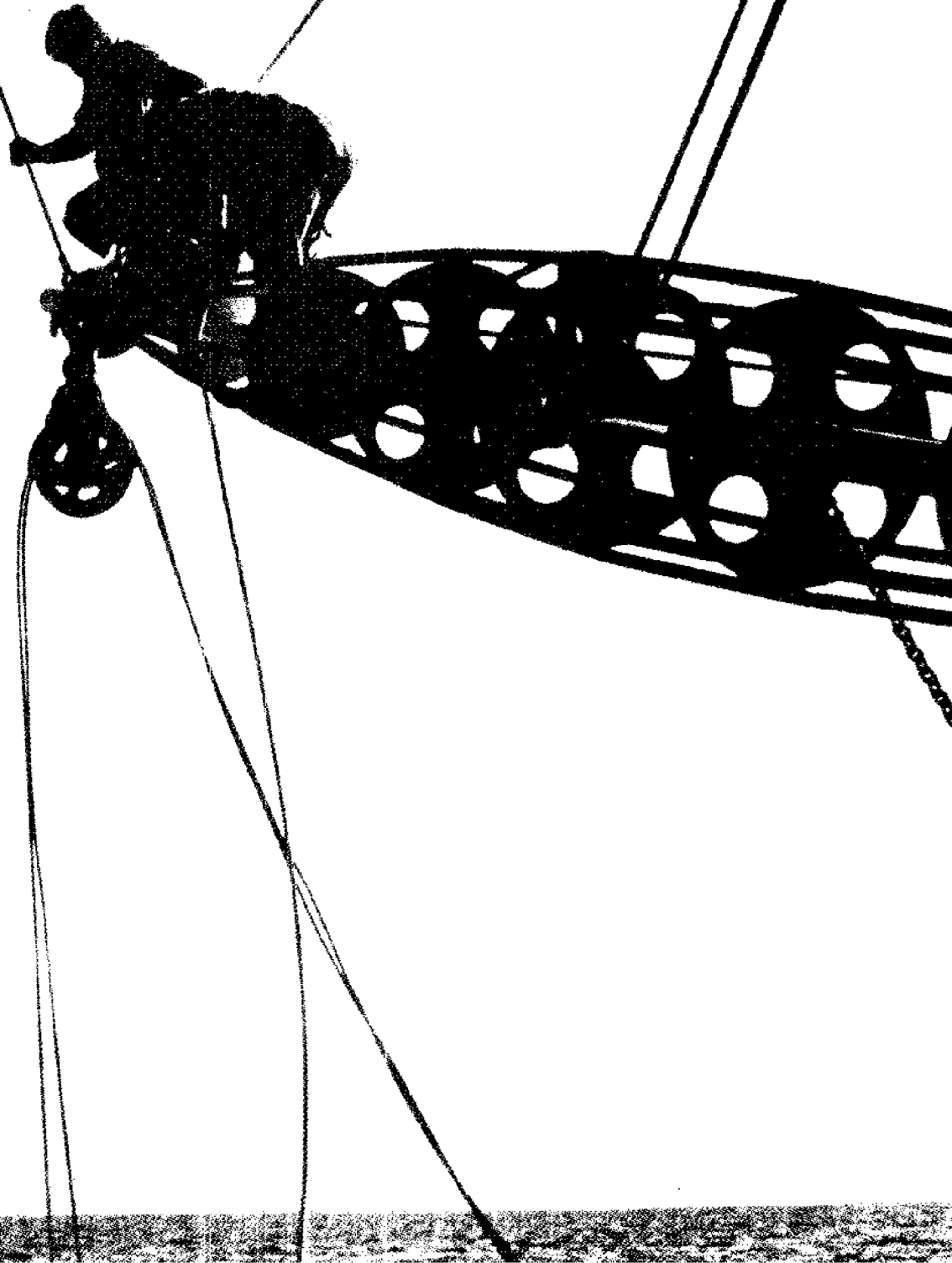




## Long-Term Cash Flow Statement

	19__	19__	19__	19__	19__
ENTER: BALANCE FORWARD (from previous year)	_____	_____	_____	_____	_____
<u>INCOME</u>					
+ Fishing sales	_____	_____	_____	_____	_____
+ Sale of equip. or gear	_____	_____	_____	_____	_____
+ Other income	_____	_____	_____	_____	_____
+ Long-term loans	_____	_____	_____	_____	_____
= TOTAL INCOME	_____	_____	_____	_____	_____
<u>EXPENSES</u>					
ENTER: Fuel	_____	_____	_____	_____	_____
+ Provisions	_____	_____	_____	_____	_____
+ Gear maintenance	_____	_____	_____	_____	_____
+ Vessel maintenance	_____	_____	_____	_____	_____
+ Ice	_____	_____	_____	_____	_____
+ Bait	_____	_____	_____	_____	_____
+ Supplies/equipment	_____	_____	_____	_____	_____
+ Taxes/fees/assessments	_____	_____	_____	_____	_____
+ Crewshare	_____	_____	_____	_____	_____
+ Insurance	_____	_____	_____	_____	_____
+ Moorage	_____	_____	_____	_____	_____
+ Warehouse/storage	_____	_____	_____	_____	_____
+ Vehicle	_____	_____	_____	_____	_____
+ Business administration	_____	_____	_____	_____	_____
+ Professional fees	_____	_____	_____	_____	_____
+ Dues/licenses	_____	_____	_____	_____	_____
= TOTAL EXPENSES	_____	_____	_____	_____	_____
ENTER: Total income	_____	_____	_____	_____	_____
- Total expenses	_____	_____	_____	_____	_____
= CASH AFTER EXPENSES	_____	_____	_____	_____	_____
- Family living expenses	_____	_____	_____	_____	_____
- Capital purchases	_____	_____	_____	_____	_____
- Income taxes	_____	_____	_____	_____	_____
- Long-term loan payments	_____	_____	_____	_____	_____
= NET CASH POSITION	_____	_____	_____	_____	_____
+ Short-term borrowing	_____	_____	_____	_____	_____
- Short-term repayment	_____	_____	_____	_____	_____
= CASH BALANCE TO CARRY FORWARD	_____	_____	_____	_____	_____

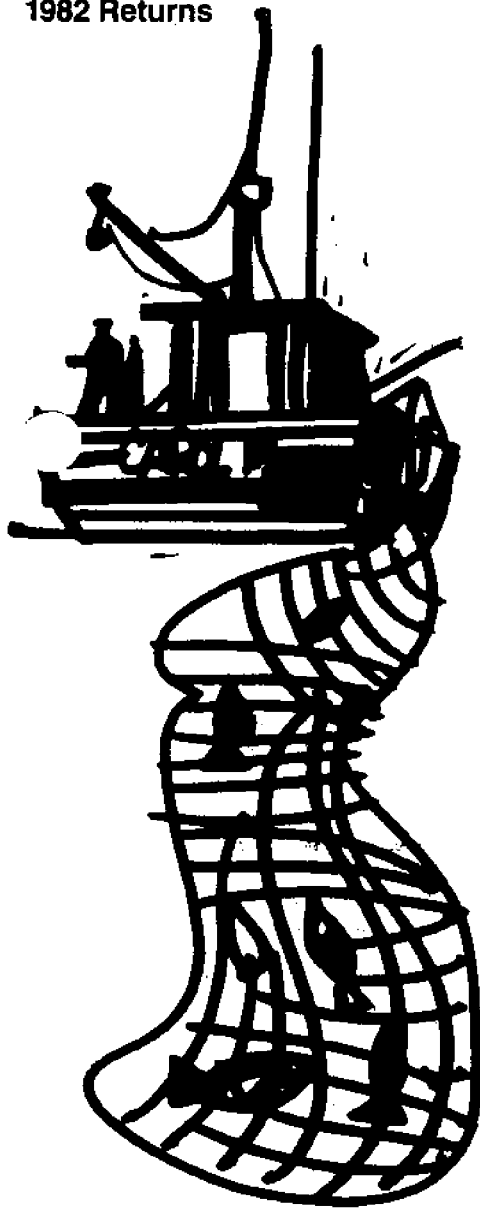
# Appendix I Depreciation





# Tax Guide for Commercial Fishermen

For use in preparing  
1982 Returns



## Depreciation

In general, if you buy business property that has a useful life of more than a year, you cannot deduct its entire cost in one year. Instead, you must spread the cost over more than one year and deduct a part of it each year. For most types of property, this is called "depreciation."

The discussion in this chapter gives you basic information on depreciation, including the section 179 expense deduction and the accelerated cost recovery system (ACRS). Use Form 4562, *Depreciation and Amortization*, to report your depreciation deduction, including the section 179 expense deduction. If you need more information, see Publication 534, *Depreciation*.

### What Can Be Depreciated

Many different kinds of property can be depreciated, as, for example, machinery, buildings, vehicles, patents, copyrights, furniture, and equipment.

Property is depreciable if it meets all three of these tests:

- 1) It must be used in business, or to earn rent or royalty income.
- 2) It must have a useful life that can be determined and its useful life must be longer than one year. The useful life of a piece of property is an estimate of how long you can expect to use it in your business or to earn rent or royalty income. If under ACRS, it must have a determinable class life.
- 3) It must be something that wears out, decays, gets used up, becomes obsolete, or loses value from natural causes.

Depreciable property may be *tangible* or *intangible*. Tangible property is any property that can be seen or touched. Intangible property is property, such as a copyright or franchise, that is not tangible. It may qualify for amortization. Amortization is a method that permits you to deduct certain capital expenditures in a way similar to depreciation. See Publication 535, *Business Expenses*. Depreciable property may also be *real* or *personal*. Personal property is property, such as machinery or equipment that is not real estate. Real property is land and generally anything that is erected on, growing on, or attached to land. However, *land itself is never depreciable*.

**Rented property.** If you pay rent on property, you cannot depreciate that property. Only the owner may depreciate it. If you make permanent improvements to the property you rent, you may depreciate those improvements. For more information, see Publication 535, *Business Expenses*.

**Pots, traps, and nets.** You depreciate pots, traps, and nets if you can use them for more than one year in your business. In most cases, you should capitalize and depreciate nets. Because the type and usage of pots and traps varies considerably from one fishery to another no single rule can be made that will apply to all fishermen. You will have to use your own experience to determine if it is proper to capitalize the cost of this equipment and depreciate it or deduct it as a business expense.

**Equipment used to build capital improvements.** You may not deduct depreciation on equipment that you are using to build your own capital improvements. The depreciation on this equipment during the period of construction must be added to the basis of the improvements.

**Repairs.** You cannot deduct, in one tax year, the entire cost of repairs or replacements you make to depreciable property if it increases the value of the property, makes it more useful, or lengthens its life. You must capitalize these costs and depreciate them.

**Partial business use.** If you use property in part for business and in part for personal purposes, you can only depreciate the business part. If you use part of your home for business, you may be able to take a depreciation deduction for this use. See Publication 587, *Business Use of Your Home*.

**Depreciation not claimed in an earlier year.** If, in an earlier year, you did not claim depreciation that you were entitled to deduct, you must still reduce your basis in the property by the amount of the depreciation that you did not deduct. You may not deduct the unclaimed depreciation in the current year or in any later tax year.

### Section 179 Expense Deduction

You may elect to treat the cost of certain qualifying property as an expense rather than as a capital expenditure. If you make the election, a limited amount of the cost of qualifying property you purchase for use in your trade or business is deductible in the year the property is placed in service. Placed in service is defined later.

**Amounts to deduct.** Beginning in 1982 the total cost you may elect to expense shall not exceed the following amounts: \$5,000 for 1982 and 1983; \$7,500 for 1984 and 1985; and \$10,000 for 1986 and after.

If husband and wife file separate returns for a tax year, their applicable amount is half of the amount for the year.

**Cost.** The cost of property does not include so much of the basis of the property that is determined by reference to the basis of other property held at any time by the person acquiring this property. For example, if you buy a new truck to use in your business, your cost for purposes of the 179 expense deduction does not include the adjusted basis of the truck you trade in on the new vehicle.

**When to elect.** You must make an election to take the 179 expense deduction. You make this election in the first tax year the property is placed in service.

If you elect to expense your property, you must specify the items to which the election applies and the part of the cost of each you elect to expense. If in 1982 you purchase and place in service two items of qualifying property costing \$2,700 and \$5,300, and you want to elect the \$5,000 deduction, you must specify what part of the \$2,700 property or the \$5,300 property you want to deduct. You may allocate the maximum \$5,000 election between the two properties.

Use Form 4562 *Depreciation and Amortization*, to make your election and report your section 179 expense deduction. You make the election by taking the deduction on Form 4562 (including a late filed Form 4562) filed with your original tax return. The election cannot be made on an amended return, and once made, the election cannot be revoked except with the consent of the Commissioner.

**Qualifying property.** You may claim the 179 expense deduction on tangible property that qualifies for the investment tax credit and that is

purchased for use in your trade or business. Recovery property is new or used tangible property. See recovery property under the accelerated cost recovery system (ACRS), later. You cannot take depreciation or the investment tax credit to the extent that you elect to expense the cost of your property. Investment credit is discussed in Chapter 13.

The purchase of property under the 179 expense deduction is any acquisition except: (1) property acquired by one member from another component member of the same controlled group, (2) property whose basis is determined by reference to the adjusted basis of the person from whom acquired or which is acquired from a decedent, and (3) property acquired from a related person and because of this relationship a loss in a transaction would be disallowed. See Publication 534.

**Basis of 179 property.** The amount you elect to expense is subtracted from the basis of 179 property. This adjusted basis is the amount you use to compute your ACRS deduction and your investment tax credit. If you elect the 179 expense deduction, the amount of your ACRS deduction and your investment tax credit for this property will be reduced.

**Dispositions.** If you dispose of 179 property, the amount you elected to expense is subject to recapture as ordinary income. See Publication 534.

**Figuring the deduction.** For 1982 the amount of your 179 expense deduction is \$5,000 of the cost of the property you acquire. If you have more than one item of property, you can allocate the deduction between the items. If you have only one item of qualifying property and that item costs less than \$5,000, such as \$3,200, your deduction is limited to \$3,200. You cannot carryover any unused 179 expense deduction. You must figure your 179 expense deduction before you figure your ACRS deduction and your investment tax credit.

**Example.** In 1982 you purchased for use in your fishing business a \$32,000 boat and a dinghy for \$2,300. Both items are placed in service in 1982. You elect to expense the entire \$2,300 for the dinghy and \$2,700 for the boat, a total of \$5,000. This is the most you can deduct in 1982. Your \$2,300 deduction for the dinghy has completely expensed that item. The cost of your boat is adjusted by \$2,700. Its basis for ACRS depreciation and the investment tax credit is \$29,300. This is figured by subtracting the amount of your expense deduction, \$2,700, from the cost of the boat, \$32,000.

**Partnerships.** The dollar limitation applies to the partnership and to each partner. The partnership allocates the deduction among the partners. Each partner then takes the deduction on their own tax return subject to the dollar limitation. If, for example, you have \$1,000 in such expense allocated to you from a partnership, then you can expense up to \$4,000 in the cost of eligible property from your business.

## Figuring Depreciation

Before figuring depreciation deductions, you must know:

- 1) What your basis in the property is,
- 2) When the property was placed in service, and
- 3) Which method of depreciation you are permitted to use.

**Basis.** Basis is a measure of your investment in the property you own. When you depreciate property, a certain percentage of your basis in it is deducted each year.

For property that you buy, your original basis is usually its cost to you. For property that you acquire in some other way—such as by inheriting it, receiving it as a gift, building it yourself, or getting it in a tax-free exchange, you must figure your original basis in some other way.

While you own the property, various events may take place that will change your basis. Some events, such as additions or permanent improvements to the property, increase basis. Others, such as casualty losses and the 179 expense deduction, decrease basis. See Chapter 8 for more information on how to figure basis.

**Nonbusiness property changed to business use.** If you change property that was not used for business to a business use, you must determine your basis in the property for figuring depreciation. This amount is determined as of the date of the change. It is the fair market value of the property on that date or your adjusted basis in the property on that date, whichever is less.

**Placed in service.** Property is considered placed in service when it is in a condition or state of readiness and availability. Depreciation can begin when the property is first ready for service.

## Accelerated Cost Recovery System (ACRS)

Most property that you place in service after 1980 is recovery property. Recovery property is tangible property of a character subject to the allowance for depreciation. You figure your cost recovery (depreciation) deductions for recovery property under ACRS, the accelerated cost recovery system. ACRS applies equally to both new and used recovery property.

However, you cannot use ACRS for property you placed in service before 1981. ACRS also cannot be used for intangible depreciable property, or for tangible property that is acquired in certain types of transactions. See *Excluded Property*, later.

**Recovery periods.** Under ACRS, recovery property that you place in service after 1980 is depreciated over a 3-year, 5-year, 10-year, or 15-year recovery period, depending on the type of property.

- 1) **3-year property.** This class includes personal property with a short useful life, such as automobiles and light-duty trucks.
- 2) **5-year property.** This class includes personal property that is not 3-year property. It includes most fishing equipment, such as nets, pots, traps, and fishing boats.
- 3) **10-year property.** This class includes certain real property. Manufactured homes, including mobile homes, are designated as 10-year property.
- 4) **15-year real property.** This class includes all real property, such as buildings, other than any designated as 10-year property.

**Figuring ACRS deductions.** The deduction under ACRS is figured by multiplying your "unadjusted basis" in the property by a certain percentage. This percentage varies from year to year during the recovery period. For 3-, 5-, and 10-year property, the full first-year percentage applies no matter when in the tax year the property is placed in service.

The percentages for 3-, 5-, and 10-year property are given in the tables below. These percentages apply to property placed in service after 1980.

**3-year property:**

1st year .....	25%
2nd year .....	38%
3rd year .....	37%

**5-year property:**

1st year .....	15%
2nd year .....	22%
3rd through 5th year .....	21%

**10-year property:**

1st year .....	8%
2nd year .....	14%
3rd year .....	12%
4th through 6th year .....	10%
7th through 10th year .....	9%

The percentages for 15-year real property depend on when you place the property in service during your tax year. The table at the bottom of this page shows the percentages for the first 4 years of the 15-year recovery period. Find the month that you place the property in service and use the percentages listed under that month for your depreciation deduction. For the percentages that apply to low-income housing projects, see Publication 534.

**Unadjusted basis.** You figure the ACRS deduction by multiplying your unadjusted basis in the property by the applicable percentage for the year. Unadjusted basis is the same amount you would use to figure a gain on a sale with no adjustments for any depreciation. This basis is reduced by the amount that you properly amortize or by the amount you elect to expense. See *Section 179 Expense Deduction*, earlier.

**Salvage value.** Do not subtract the expected salvage value of the property from its basis when figuring your deduction under ACRS. See *Salvage value*, later.

**Example.** In 1982, you purchase for \$30,000 a small boat that you place in service in your fishing business. The boat which is 5-year property has an unadjusted basis of \$30,000. You elect the \$5,000 expense deduction, and you adjust your cost by that amount. Your ACRS deduction in 1982 for this boat is 15% (from 5-year property table) of \$25,000 (\$30,000 - \$5,000), or \$3,750. For 1983, your deduction for the boat will be 22% of \$25,000 or \$5,500.

**Components of real property.** Under ACRS, the components of a building (plumbing, wiring, storm windows, etc.) are depreciated in the same way as the building itself. If the building is 15-year real property, the components are also

15-year real property other than low-income housing—

Year	Month Placed in Service											
	1	2	3	4	5	6	7	8	9	10	11	12
1st	12%	11%	10%	9%	8%	7%	6%	5%	4%	3%	2%	1%
2d	10%	10%	11%	11%	11%	11%	11%	11%	11%	11%	11%	12%
3d	9%	9%	9%	9%	10%	10%	10%	10%	10%	10%	10%	10%
4th	8%	8%	8%	8%	8%	8%	9%	9%	9%	9%	9%	9%

15-year real property. The recovery period for a component begins when the building is placed in service or, if later, the date the component is placed in service.

**Early dispositions.** Under ACRS if you dispose or retire your ACRS personal property before the expiration of the recovery period, you cannot take a depreciation deduction in the year of disposition. However, if the property is 15-year real property, you can take a deduction for the months the property was in service in the last year.

## Alternate ACRS Method

If you choose, you may use an alternate method of figuring your deductions under ACRS. This method is a recovery percentage based on the straight line method of depreciation and is used in place of the percentages given in the tables. The alternate method is not regarded as an accelerated method of depreciation. It can be used for all four classes of property.

**Recovery periods.** If you choose to use the alternate method, you will generally take deductions over a longer period of time. You can choose from among three different alternate recovery periods for each class of property:

3-year property.....	3, 5, or 12 years
5-year property.....	5, 12, or 25 years
10-year property.....	10, 25, or 35 years
15-year real property.....	15, 35, 45 years

**Figuring the deduction.** Under the alternate ACRS method, you figure your ACRS deduction using a straight line method. The straight line percentage for 3 years is 33.333%, 5 years is 20%, 10 years is 10%, 12 years is 8.333%, 15 years is 6.667%, 25 years is 4%, 35 years is 2.857%, and 45 years is 2.222%. This percentage is applied to the unadjusted basis of the property, subject to the half-year convention, explained later.

**3-, 5-, or 10-year property.** You must use the same method and recovery period for all property in the same class (that is, 3-, 5-, or 10-year property) that is placed in service in the same tax year. You may, however, choose different methods and periods for property in different classes, or for property in the same class if placed in service in different tax years.

**Example 1.** In 1982, you place in service three items of 5-year property. If you want to use the alternate ACRS method with a 12-year recovery period, you must use it for all three items of 5-year property placed in service in 1982.

**Example 2.** In April 1982, you purchase for \$10,000 a light-duty truck (3-year property) that you place in service. You use the truck in your fishing business. You decide to use the alternate ACRS method and a 5 year recovery period. Divide 1 by 5 (selected recovery period) to arrive at 20%. Your ACRS deduction for 1982 is \$1,000 ( $10,000 \times 20\% = \$2,000 \times 1/2$ ). For 1983, your deduction will be \$2,000, the amount for a full year of use.

**Half-year convention.** The first year the property is placed in service you can deduct half the amount of the depreciation that would be allowed for a full year. It does not matter when during the year you placed the property in service. If you hold the property for the entire recovery period, you can then deduct a half-year's depreciation for the year following the end of the recovery period.

**15-year real property.** You can choose a different recovery period for each item of 15-year real property. Unlike the other classes of property, your choice is made on a property-by-property basis and the first year's deduction and the year of disposition deduction must be prorated for the number of months in use. The half-year convention does not apply to 15-year real property.

**Other rules.** Except for the length of the recovery period, the alternate ACRS method follows the same rules as the regular ACRS method:

- **Basis** is not adjusted for ACRS depreciation taken in earlier years or for salvage value.
- **Components** of a building are depreciated in the same way as the building itself. If you use the alternate method for the building, you must use the alternate method for any components you replace or add. There is a special rule for "substantial improvements." See Publication 534.
- **Early disposition.** No deduction is allowed for the year of an early disposition or retirement of 3-, 5-, and 10-year property.

## Excluded Property

There are rules that keep a taxpayer from using ACRS for certain property placed in service before 1981. For property acquired after 1980, you must use another method of figuring your depreciation deductions if these special rules apply.

**Personal property.** You may not use ACRS for personal property you acquire after 1980 if any of the following three conditions apply:

- 1) You or a party related to you owned or used the property in 1980.
- 2) You lease the property to a person who owned or used the property in 1980.
- 3) You acquire the property from its 1980 owner, but the person who is actually using the property does not change.

**Real property.** You may not use ACRS for real property you acquire after 1980 if either of the following conditions apply:

- 1) You or a party related to you owned the property during 1980.
- 2) You lease the property back to its 1980 owner or a party related to its 1980 owner.

**Related parties.** For the preceding rules, a party related to you includes members of the immediate family, including husband and wife, or ancestors, or lineal descendants.

These rules also apply to certain relationships between individuals, corporations, partners, partnerships, and fiduciaries.

For more information on excluded property, see Publication 534.

## Other Depreciation Methods

Before ACRS was enacted, several other methods were used to figure depreciation. If you placed your property in service before 1981, or if your property does not qualify for ACRS, you must still use these methods. However, you cannot use these methods for property that qualifies for ACRS. These methods differ from ACRS in three ways:

- 1) **Useful life.** Instead of taking depreciation deductions over a specified recovery period, you take them over the useful life of the property.

2) **First year.** Instead of figuring your deduction for the first year using the percentages in the tables or the half-year convention, you must first figure the deduction that would be allowed for a full year and then prorate it for the part of the year you actually have the property in service. You can only depreciate property for the part of the year it is in service or available for service.

3) **Salvage value.** You must take salvage value into account when figuring depreciation.

Salvage value is the estimated value of property at the end of its useful life. It is what you expect you will get from the sale or other disposition of the property when you no longer use it.

However, if you acquire personal property that has a useful life of 3 years or more, you may use an amount for salvage value that is less than your actual estimate. You may lower your estimate of salvage value by up to 10% of the property's adjusted basis. If your estimate is less than 10% of the adjusted basis, you may consider salvage value to be zero.

**Straight line method.** You may use this method for every kind of depreciable property.

To figure your deduction, you must determine the adjusted basis, salvage value, and useful life of the property. Subtract the salvage value, if any, from the adjusted basis and divide this amount by the number of years in its useful life. This gives you the amount of depreciation you may deduct each year. This amount stays the same each year, unless the adjusted basis or useful life changes. If in the first year you use the property for less than a full year, your depreciation deduction must be prorated for the number of months in use.

**Declining balance method.** Depending on the kind of property, you may use the double declining balance method or you may be limited to the 150% declining balance or the 125% declining balance methods.

To figure your deduction, first determine your rate of depreciation. This is generally determined by dividing the number 1 by the useful life. If the property had a useful life of 5 years, the rate under the declining balance method would be 1/5 or 20%. This basic rate must be multiplied by the percentage allowed for the kind of property you are depreciating.

Under the **double declining balance** method, also called the 200% declining balance method, the rate would be 40% ( $20\% \times 2$ ). Under the **150% declining balance** method it would be 30% ( $20\% \times 1.5$ ).

Multiply the adjusted basis by this rate to figure your depreciation for the first year. If the rate was 30% and the adjusted basis was \$2,000 the depreciation would be \$600 ( $\$2,000 \times 30\%$ ). In the second year, first adjust your basis for the amount of depreciation you took the year before. Your adjusted basis would now be \$1,400 ( $\$2,000 - \$600$ ). Then multiply the adjusted basis by the same rate of depreciation you used in the first year (30%). This gives you a depreciation deduction for the second year of \$420 ( $\$1,400 \times 30\%$ ).

**Salvage rule.** Under the declining balance method, you do not reduce the adjusted basis by the salvage value before figuring the depreciation. However, you may not depreciate property below a reasonable salvage value.

**Change in method.** A change in the method of figuring depreciation is a change in the accounting method that requires the consent of

the Internal Revenue Service. See Chapter 4. However, you do not need permission to change from the declining balance method to the straight line method at any time during the useful life of the property if the change is not prohibited by a written agreement as to useful life and rates of depreciation.

**The change in depreciation method** from declining balance to straight line may be made only on your original return for the tax year in which this change is made. This change may not be made on an amended return filed after the due date, including extensions, for filing the return for the year. Once you have changed to the straight line method you may not change back without getting permission. For more information, see Publication 534.

**Claiming depreciation.** Some methods of depreciation can only be used for certain kinds of property. You can use the straight line method to depreciate any business or income producing property that has a useful life of more than one year.

**Declining balance method.** You may use one of the declining balance methods for figuring depreciation only if the property has a useful life of 3 years or more. You may only use the **double declining balance** method for tangible personal property (generally any tangible prop-

erty except real estate) that you buy new, or residential rental property that you buy new.

You may use the **150% declining balance** method for used tangible personal property, such as a used machine, truck, or car used for business. You may also use the 150% declining balance method for new real estate that is not residential rental property if you acquired it new after July 24, 1969.

You may use the **125% declining balance** method for certain used residential rental property. The property must be acquired after July 24, 1969, and have a useful life of 20 years or more. You must use the straight line method for other used real estate. See Publication 534 for a discussion of residential rental property.

**If you dispose of depreciable property at a profit,** you may have a report, as ordinary income, all or part of the profit. See Chapter 10.

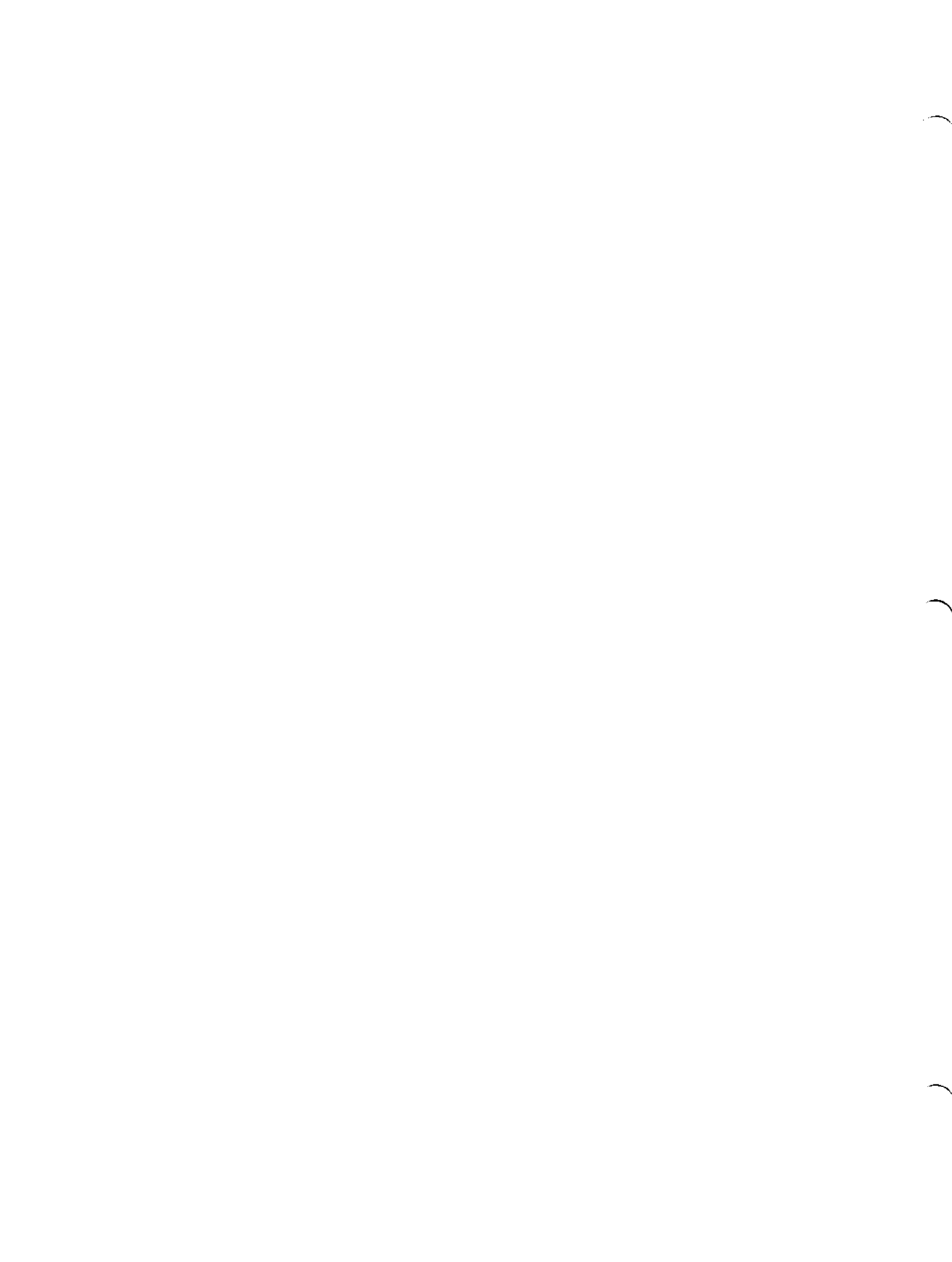
**Additional 15% tax on preference items.** If you use accelerated depreciation for real property or personal property you lease to others, you may have to pay the minimum tax that applies to tax preference items. Accelerated depreciation is any method, including ACRS, that allows you to deduct more depreciation than you could deduct using the straight line method. For more information see Publication 909, *Minimum Tax and Alternative Minimum Tax*.



# Appendix II

## Mortgage Payment Table





The following table of loan payments shows annual level term payments on \$1,000 for a range of repayment periods and interest rates. Remember these payments are for fixed interest rates, not floating rates. To determine the payment on your loan, find the payment per \$1,000 at the interest rate and repayment period that corresponds to your terms, then multiply the payment per \$1,000 by the number of thousands you anticipate borrowing. For instance, the payment on \$1,000 at 18 percent interest for five years is \$319.78. The annual payment on a \$30,500 loan will be  $30.5 \times 319.78 = \$9,753.22$ .

Interest rates are graduated by half percentage points. To determine a loan payment when interest is either one-fourth or three-fourths percent above a whole point (i.e., 17 3/4 percent), first calculate the difference between payments at the percentage rates above and below the rate you anticipate paying. Then divide that difference by two and add the result to the payment at the lower percentage rate.

EXAMPLE: You want to borrow \$30,000 and are offered loan terms of 17 3/4 percent for 7 years. From the table first find the payments at 7 years - 18 percent, and 7 years - 17 1/2 percent. Then do four calculations:

1.
 

7 yrs @ 18%:	\$262.36
less 7 yrs @ 17 1/2%:	-258.64
Difference:	\$ 3.72 @ \$1,000 borrowed
  
2. 3.72 divided by 2 = \$1.86
  
3.
 

7 yrs @ 17 1/2%	=	\$258.64
		+ 1.86
7 yrs @ 17 3/4%	+	\$260.50 @ \$1,000 borrowed
  
4.  $\$260.50 \times 30 = \$7,815.03$  annual payments

The table shows payments that would be due if only one payment a year is made. If payments are due on a semiannual, quarterly, or monthly basis, the yearly sum will be slightly less than a single annual payment because each payment reduces the principal amount slightly so that interest on the remaining balance is less.

## ANNUAL LOAN PAYMENT

Interest Rate	9½%	10%	10½%	11%	11½%	12%	12½%
1 Year	\$1,095.00	\$1,100.00	\$1,105.00	\$1,110.00	\$1,115.00	\$1,120.00	\$1,125.00
2 Year	572.33	579.19	580.06	583.93	587.81	591.70	595.59
3 Year	398.58	402.11	405.66	409.21	412.78	416.35	419.93
4 Year	312.06	315.47	318.89	322.33	325.77	329.23	332.71
5 Year	260.44	263.80	267.18	270.57	273.98	277.41	280.85
6 Year	226.25	229.61	232.98	236.38	239.79	243.23	246.68
7 Year	202.04	205.41	208.80	212.22	215.66	219.12	222.60
8 Year	184.05	187.44	190.87	194.32	197.80	201.30	204.83
9 Year	170.20	173.64	177.11	180.60	184.13	187.68	191.26
10 Year	159.27	162.75	166.26	169.80	173.38	176.98	180.62
12 Year	143.12	146.74	150.38	154.03	157.71	161.44	165.19
15 Year	127.74	131.47	135.25	139.07	142.92	146.82	150.76
20 Year	113.48	117.46	121.49	125.58	129.70	133.88	138.10

Interest Rate	17½%	18%	18½%	19%	19½%	20%	20½%
1 Year	\$1,175.00	\$1,180.00	\$1,185.00	\$1,190.00	\$1,195.00	\$1,200.00	\$1,205.00
2 Year	634.77	638.72	642.67	646.62	650.58	654.55	658.51
3 Year	456.24	459.92	463.61	467.31	471.01	474.73	478.45
4 Year	368.13	371.74	375.36	378.99	382.63	386.29	389.96
5 Year	316.16	319.78	323.41	327.05	330.71	334.38	338.07
6 Year	282.25	285.91	289.58	293.27	296.98	300.71	304.45
7 Year	258.64	262.36	266.10	269.85	273.63	277.42	281.24
8 Year	241.46	245.24	249.05	252.89	256.74	260.61	264.50
9 Year	228.53	232.39	236.28	240.19	244.12	248.08	252.06
10 Year	218.57	222.51	226.48	230.47	234.49	238.52	242.58
12 Year	204.53	208.63	212.75	216.90	221.07	225.26	229.49
15 Year	192.10	196.40	200.73	205.09	209.47	213.88	218.31
20 Year	182.24	186.82	191.42	196.05	200.69	205.36	210.04

# PER \$1,000 BORROWED

97

13%	13½%	14%	14½%	15%	15½%	16%	16½%	17%
\$1,130.00	\$1,135.00	\$1,140.00	\$1,145.00	\$1,150.00	\$1,155.00	\$1,160.00	\$1,165.00	\$1,170.00
599.48	603.38	607.29	611.20	615.12	619.04	622.96	626.89	630.83
423.52	427.12	430.73	434.35	437.98	441.61	445.26	448.91	452.57
336.19	339.69	343.20	346.73	350.27	353.81	357.38	360.95	364.53
284.31	287.79	291.28	294.79	298.32	301.85	305.41	308.98	312.56
250.15	253.65	257.16	260.69	264.24	267.80	271.39	274.99	278.61
226.11	229.64	233.19	236.77	240.36	243.98	247.61	251.27	254.95
208.39	211.97	215.57	219.20	222.85	226.53	230.22	233.95	237.69
194.87	198.51	202.17	205.86	209.57	213.32	217.08	220.87	224.69
184.29	187.99	191.71	195.47	199.25	203.06	206.90	210.77	214.66
168.99	172.81	176.67	180.56	184.48	188.43	192.41	196.43	200.47
154.74	158.76	162.81	166.90	171.02	175.17	179.36	183.57	187.82
142.35	146.65	150.99	155.36	159.76	164.20	168.67	173.16	177.69
21%	21½%	22%	22½%	23%	23½%	24%	24½%	25%
\$1,210.00	\$1,215.00	\$1,220.00	\$1,225.00	\$1,230.00	\$1,235.00	\$1,240.00	\$1,245.00	\$1,250.00
662.49	666.47	670.45	674.44	678.43	682.43	686.43	690.43	694.44
482.18	485.91	489.66	493.41	497.17	500.94	504.72	508.50	512.30
393.63	397.32	401.02	404.73	408.45	412.18	415.93	419.68	423.44
341.77	345.48	349.21	352.95	356.70	360.47	364.25	368.04	371.85
308.20	311.98	315.76	319.57	323.39	327.22	331.07	334.94	338.82
285.07	288.92	292.78	296.67	300.57	304.49	308.42	312.37	316.34
268.41	272.35	276.30	280.27	284.26	288.27	292.29	296.34	300.40
256.05	260.07	264.11	268.17	272.25	276.35	280.47	284.60	288.76
246.67	250.77	254.89	259.04	263.21	267.40	271.60	275.83	280.07
233.73	238.00	242.28	246.59	250.93	255.28	259.65	264.04	268.45
222.77	227.24	231.74	236.25	240.79	245.35	249.92	254.51	259.12
214.74	219.47	224.20	228.95	233.72	238.50	243.29	248.10	252.92

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