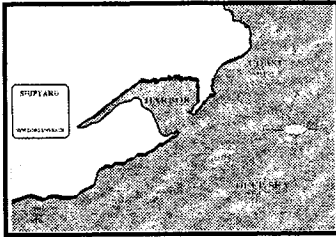
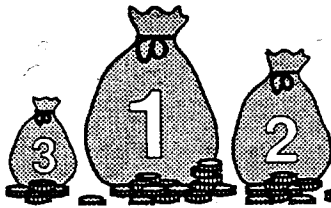


FISH BANKS, LTD.

ROLE DESCRIPTION AND OPENING SCENARIO



Congratulations! You have just been hired to manage one of the principal fishing companies in your country. Together with the others in your company—captain and crew members—you will operate your fishing fleet each year according to policies you design to maximize your assets. The rules and information required for your success are provided below.

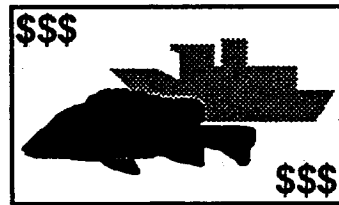


CRITERION OF SUCCESS

Your team's goal is to achieve the greatest possible assets by the end of the game. Your assets equal the sum of your accumulated bank balance plus the salvage value of your ships at the end of the final year in the game.

RESOURCES

You begin the game with a fleet of ships, a bank account of (\$200) x (number of ships), and access to two offshore fishing areas.



DECISION SHEET											
Annual Report											
	Year	1	2	3	4	5	6	7	8	9	10
AS1	Deep Sea Benthic Catch										
AS2	Coastal Benthic Catch										
AS3	Price of Fish										
AS4	Value Fish Sales										
AS5	Interest										
AS6	Salvage Bank Balance										
AS7	Ship Fleet Balance Auctions and Trades										
Auction, Trades, & Orders Year											
	Year	1	2	3	4	5	6	7	8	9	10
AS1	Ships Purchased at Auction										
AS2	Ships Sold at Auction										
AS3	Ships Purchased at Trade										
AS4	Ships Sold at Trade										
AS5	Ships Purchased from Trade Order										
AS6	Ships Sold from Trade Order										
Ship Allocations											
	Year	1	2	3	4	5	6	7	8	9	10
AS1	Ship Fleet after Auctions & Trades										
AS2	Ships Sent to Deep Sea Bank										
AS3	Ships Sent to Coastal Bank										
AS4	Ships Remaining in Harbor										

DECISIONS

Each round you must determine your fleet size by deciding whether to bid for ships at auction, make ship trades with other teams, order new ships to be constructed by the shipyard, or maintain your fleet at its current size. Then you must decide how to allocate your ships among the Coastal and Deep Sea fishing areas and the Harbor. You will be most successful if your decisions are based on a long-term strategy for fleet size and allocation. You must also take into account the actions of the other teams and modify your strategy accordingly.

SHIPS



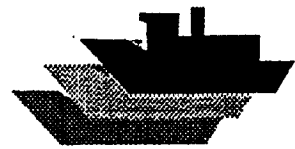
You may change the size of your fleet by buying ships at auction, negotiating to buy or sell ships from another company, and ordering new ships from the shipyard.

Ships cannot be lost or damaged, and used ships purchased in an auction or trade are as good as new ships ordered from the factory. Ships are represented by colored blocks of wood: white = 1, red = 5, and yellow = 10.

AUCTIONS:

From time to time a fishing company in a neighboring country will go bankrupt. Its ships are then sold in one lot to the highest bidder, and they may be used immediately.

Only one company can win the ships, but two or more teams can agree ahead of time to divide the ships later (during the trading session) at a negotiated price.



TRADES:

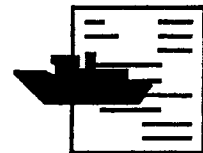
During the trading session all companies are free to negotiate the purchase or sale of ships. Ships that are traded are available to the purchaser for fishing immediately.

Rentals can be arranged by a prior agreement to buy ships and sell them back for a lower price in a later year.



CONSTRUCTION:

Every year the shipyard accepts orders for new ships. These are available at a fixed price of \$300 per ship. The ships are picked up and paid for at the end of the year, so there is effectively a one-year construction delay before the ships may be used.



SALVAGE:

At the end of the game your ships will be sold. Their salvage value may either be a constant, typically \$250 per ship, or a variable that depends on the average profit per ship earned in both fishing areas over recent years. The game facilitator will indicate at the beginning of the game precisely how salvage value will be determined.



You may not sell your ships for salvage before the end of the game.

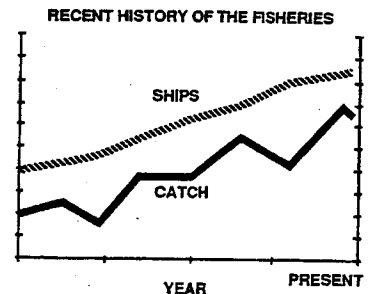
FISH



AREAS:

Two fishing areas are available to you: a large Deep Sea fishery, and a smaller Coastal fishery. Biologists have estimated that the Deep Sea could potentially support between 2000 and 4000 fish, while the Coastal area could support between 1000 and 2000 fish. Since there has been no sign of over harvesting in the past, you are probably safe to assume that the actual populations are somewhere near these upper limits.

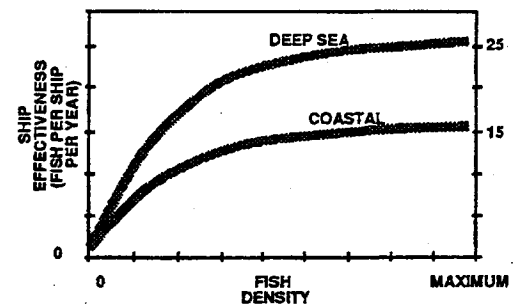
The normal yearly catch in the Deep Sea, 25 fish per ship, is higher than that in the Coastal area, 15 fish per ship. However, it costs \$250 per year to operate a ship in the Deep Sea, while in the Coastal area the cost is only \$150 per year. Operating costs remain fixed, but the catch in each area may vary according to factors explained below.



HARVEST:

Your total fish catch is influenced by the number of ships you send to sea, the ship effectiveness, and the weather. With good weather, catch can be as much as 20% above normal, while bad weather may reduce catch to 20% below normal. Weather is the same in both areas and for all teams in any given year.

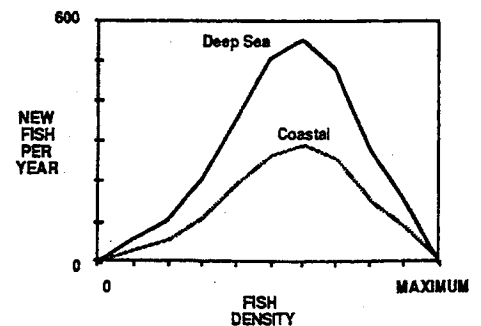
Ship effectiveness—the number of fish caught per ship each year—depends on the normal productivity of the area where the ship is operating, and on the density of fish in the area. The general relationship between fish density and ship effectiveness is shown at right.



The number of ships in an area does not affect ship effectiveness; in other words, ship crowding is not a factor. However, if there are many ships in one area, the fish population may be somewhat reduced, and the next year's harvest will be affected.

POPULATION DYNAMICS:

The fish population is increased by natural births; it is decreased by natural deaths and by harvesting. The fertility of the fish and their lifetime are both influenced by the density of fish. The general shape of the relationship governing new fish, net additions to the fish stock each year (births - natural deaths), is shown at right.



TERMS ON THE DECISION SHEET:

ANNUAL REPORT:

R:1 Deep Sea Fishery Catch: This is the total number of fish caught by the ships you sent to the Deep Sea fishery in the last year.

R:2 Coastal Fishery Catch: This is the total number of fish caught by the ships you sent to the Coastal fishery in the last year.

R:3 Price of Fish: The price of fish is fixed at \$20 per fish sold.

R:4 Total Fish Sales: This is the product of two factors—your total catch (the sum of the R:1 and R:2 above) and the price for each fish sold (R:3).

R:5 Interest: When your minimum bank balance during the year is negative, you are charged 15% interest. This may happen even when fish sales at the end of the year leave you with a positive bank balance. If the figure for interest on your report is positive, that means your minimum bank balance during the year was positive and you earned 10% interest on the minimum balance. You can calculate your bank balance yourself by adding your credits and debits in the sequence shown in the Bank Balance section of this role description.

R:6 Initial Bank Balance: In the first year this is typically \$200 per ship in your fleet. Thereafter the amount is calculated by the computer program.

R:7 Ship Fleet Before Auctions and Trades: This is the number of ships you start with at the beginning of the year. It will equal D:8 in the last year plus any new ships ordered in the last year (D:7).

AUCTION, TRADES, AND ORDERS DECISIONS:

D:1 Ships Purchased in Auction: Normally this will be zero, since auctions are not always held, and only one firm can make the highest bid. If you win the auction, record here how many ships you obtained.

D:2 Money Spent on Auction Purchases: If the term above is zero, then this will also be zero. If your team did win the auction, record here the total amount of money you paid for all the ships.

D:3 Ships Purchased in Trades: If you bought ships from one or more of the other teams, record here the total number of ships you obtained from all other teams combined.

D:4 Money Spent on Trade Purchases: If you bought ships from one or more of the other teams, record here the total amount of money you paid to all other teams combined.

D:5 Ships Sold in Trade: If you sold some of your ships to one or more of the other teams, record here the total number of ships you transferred to all other teams combined.

D:6 Money Received from Trade Sales: If you sold some of your ships to one or more of the other was, record here the total amount of money you received from all other teams combined.

Note: You can effectively rent or lease ships from another team by agreeing to buy a ship this year for some price and then to sell it back in the next year for zero dollars. But be careful how you record these two transactions; the numbers of ships and amounts of money recorded by each team must be equal.

D:7 New Ships Ordered: Here you record your decision about the number of new ships you wish to have constructed for use in the next year. These cost \$300 each, but you can borrow the money from the bank if your bank balance is inadequate to finance your desired purchases.

SHIP ALLOCATION DECISIONS:

D:8 Ship Fleet After Auctions & Trades: This is the number of ships you have for use in fishing this year. It equals $R:7 + D:1 + D:3 - D:5$. It is not influenced by your decision regarding D:7, New Ships Ordered. These ships only become available to you at the beginning of next year.

D:9 Ships Sent to Deep Sea Fishery: Each ship sent to the Deep Sea fishery costs you \$250 in operating costs. This money may be borrowed from the bank, if the total operating costs exceed your bank balance. However, you will then have to pay interest on the loan.

D:10 Ships Sent to Coastal Fishery: Each ship sent to the coastal fishery costs you \$150 in operating costs. This money may be borrowed from the bank, if the total operating costs exceed your bank balance. However, you will then have to pay interest on the loan.

D:11 Ships Remaining in Harbor: Each ship left in the harbor costs \$50 in operating costs.

STEPS OF PLAY FOR PARTICIPANTS:

1. Receive and record computer-generated data on your Decision Sheet under "Annual Report."
2. Collect the ships indicated in R:7.
3. Bid for auctioned ships, if there is an auction.
4. Buy or sell ships in trading sessions.
5. Place orders for new ship construction.
6. Calculate and record fleet size.
7. Allocate ships among fishing areas & harbor and record decisions on Decision Sheet.
8. Place ships on game board.
9. Give Decision Sheet to game operator.

FISH BANKS QUICK REFERENCE SHEET:

FISHING AREAS:

	Deep Sea (Area 1)	Coastal (Area 2)	Harbor
Operating Cost (per ship per year)	\$250	\$150	\$50
Normal Yield (fish per ship per year)	25	15	0
Estimated maximum fish population	2,000-4,000	1,000-2,000	0

SHIP PURCHASES:

	Availability	Cost
Purchase in auction	Immediate	Highest bid
Purchase in trade session	Immediate	Negotiated price
Order from shipyard	One year delay	\$300

OTHER INFORMATION:

Price of fish	\$20
Interest rate on loans (minimum bank balance is negative during the year)	15%
Interest rate on savings (when minimum bank balance is positive during the year)	10%

SAMPLE SEASON:

Transaction	Income	Expenses	Bank Balance
Initial bank balance	\$0	\$0	\$2,000
Buy four ships at auction	0	1,200	800
Sell two ships in trade	700	0	1,500
Operate six ships in Deep Sea	0	1,500	0
Operate two ships in Coast	0	300	-300
Sell fish from Deep Sea	3,000	0	2,700
Sell fish from Coast	600	0	3,300
Pay interest on minimum bank balance (-\$300)	0	50	3,250
Pay for new ship ordered	0	300	2,950
Final bank balance	0	0	2,950

FISH BANKS, LTD.
TEAM STRATEGY WORKSHEET

Your goal is to maximize your assets (assets = bank balance + salvage value of ships) by the end of the game (approximately 10 rounds). With this in mind, plan your company strategy.

Company #: _____ Year #: _____ List the plan of action for how your company will achieve its goals.

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