# COMMERCIAL FISHING VESSELS AND GEAR



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
CIRCULAR 48

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# COMMERCIAL FISHING VESSELS AND GEAR

By GUSTAF T. SUNDSTROM, Illustrator
BUREAU OF COMMERCIAL FISHERIES



CIRCULAR 48

FISH AND WILDLIFE SERVICE, Arnie J. Suomela, Commissioner
UNITED STATES DEPARTMENT OF THE INTERIOR, Fred A. Seaton, Secretary

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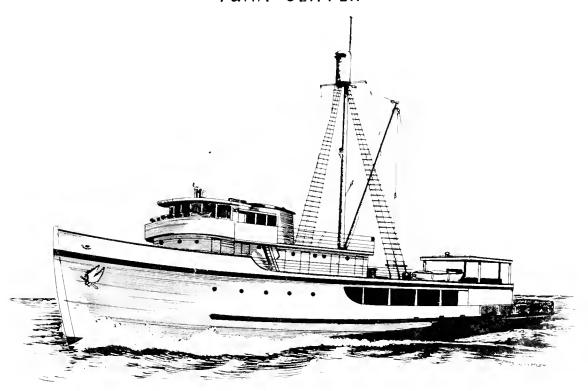
#### INTRODUCTION

The United States with its long coastline on two oceans, the great inland lakes, and large rivers, is among the leading nations of the world concerned with commercial fishing. The gear and fishing vessels are naturally of a great variety, but the hook, the net, and the trap are still, as they have been for centuries, the main types of gear used. Hooks by the hundreds are now used on one line, called the long-line; nets have been developed into purse seines, beam and otter trawls, and mile-long gill nets; traps have been enlarged into the gigantic traps for salmon and the extensive Great Lakes trap nets. Sail and steam have given way to gasoline and Diesel power. Shipbuilding techniques and fishing experiences are reflected in the modern fishing vessel. When the fishing grounds are located far from the home port, freezing facilities have sometimes been installed aboard the vessel. Most of the larger fishing vessels are now equipped with electronic navigation and fish-finding devices. A recent development in fishing gear is the power block used in the salmon fisheries. The midwater trawl has been successfully introduced into some European fisheries within the last few years, but this gear is still in the experimental stage in America.

A selection of some of the most important types of fishing gear and vessels in use today, in the United States and Alaska, is illustrated in this leaflet. Descriptions of representative types of fishing vessels are also included. General range of length, beam, draft, net tonnage, construction, engine, refrigeration, speed, average crew, length of trip and convertibility, are indicated. The main fishing areas are shown on maps, and includes only United States fishing activities.

Leaflets describing in detail some of the fishing methods mentioned herein are available on request. See list inside back cover.

# TUNA CLIPPER



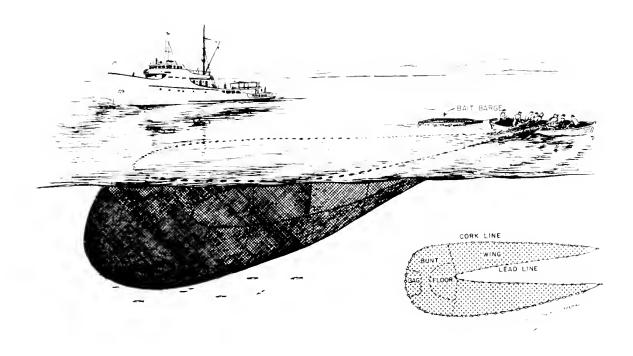
#### TUNA CLIPTER

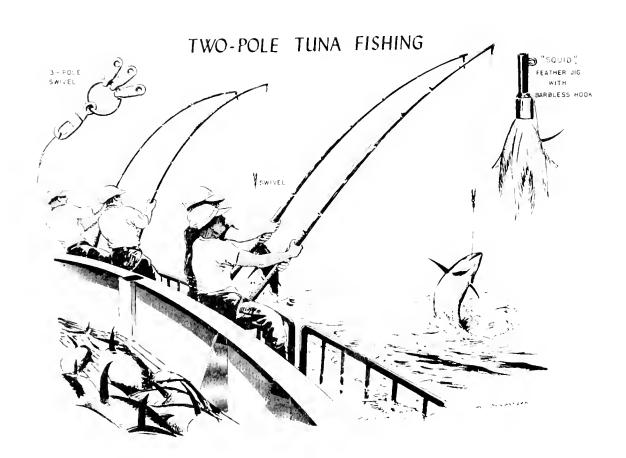
Length in Feet	o 150
Beam in Feet	25 7 32
Draft in Feet	₹ + 15.4
Net Tonnage	60 to 300
Construction	tral or Wood
Engine: Type	Diesel
Horsepower	250 to 1200
Type of Refrigeration	Mechanical or Brine Tanks
Cruising Speed	10 to 12 Knots
Average Crew	9 to 21
Length of Trip	35 to 85 Days
Convertibility to Other Types of Gear	N. Se



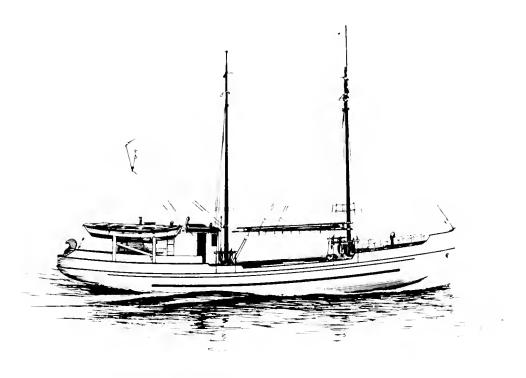
TUNA BAIT FISHING

Lampara Seine



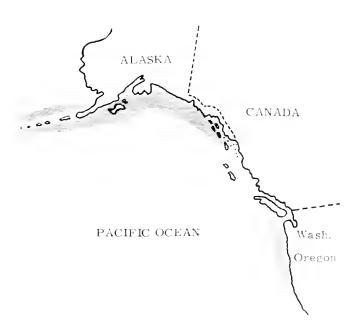


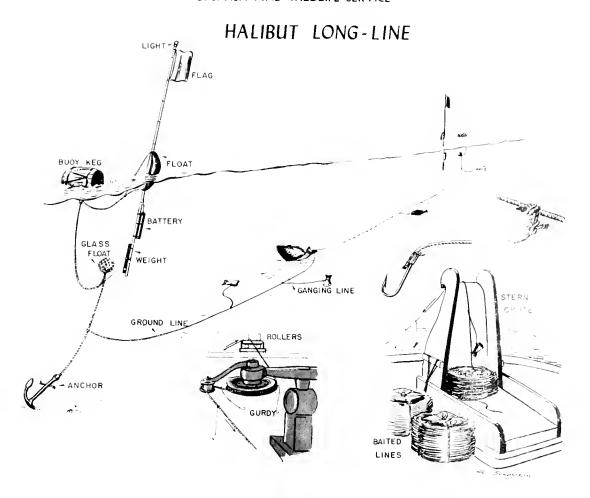
#### HALIBUT SCHOONER

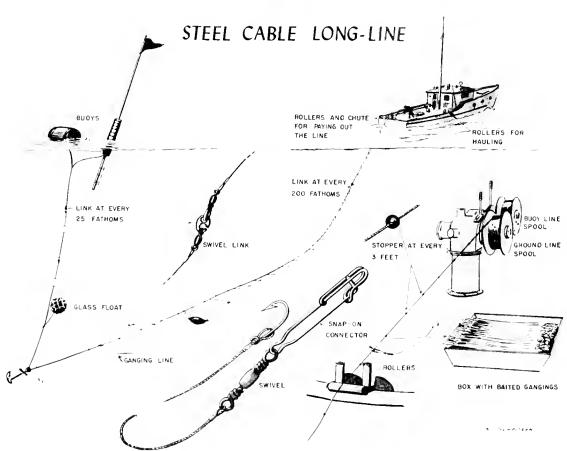


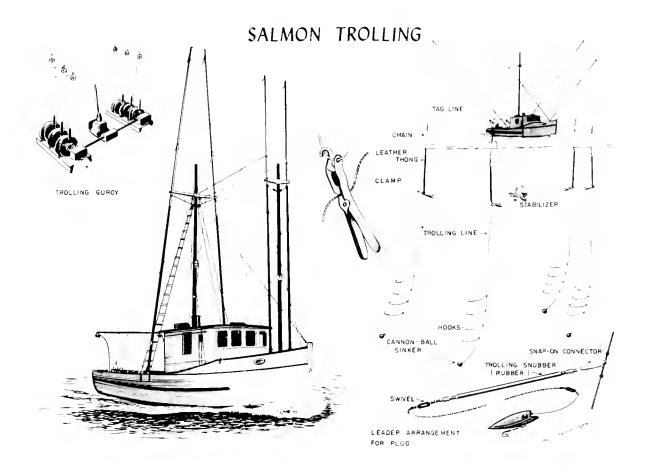
# HALIBUT SCHOONER Pacific Coast

# 





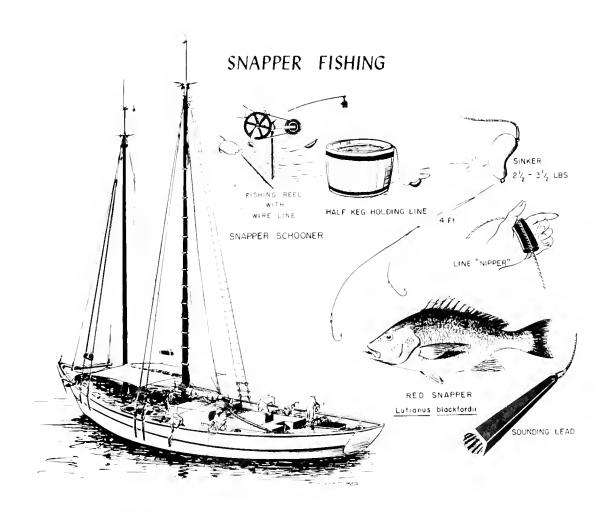




#### SALMON TROLLER

Length in Feet	25 to 60
Beam in Feet	8 to 18
Draft in Feet	2.5 to 7
Net Tonnage	5 to 26
Construction	Wood, some Steel
Engine: Type	Diesel or Gas
Horsepower	25 to 165
Type of Refrigeration	Ice
Cruising Speed	6 to 10 Knots
Average Crew	1 to 3
Length of Trip	Up to 14 Days
Convertibility to Other Types of Gear	Halibut Long Line, Albacore Trolling

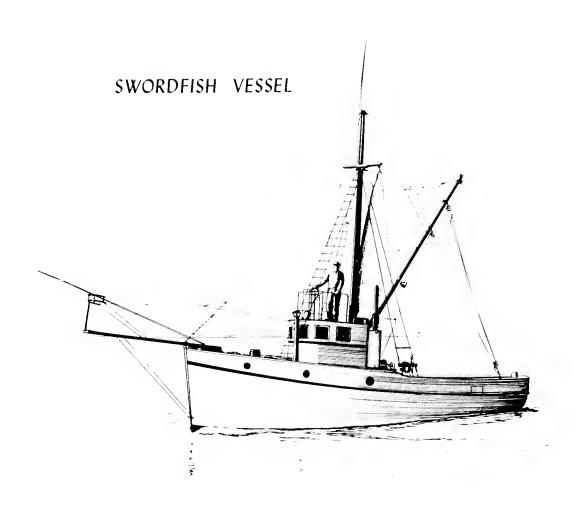




#### SNAPPER BOAT

# Length in Feet 32 to 103 Beam in Feet 10 to 30 Draft in Feet 3 to 11 Net Tonnage 5 to 98 Construction Wood Engine: Type Oil Horsepower 30 to 110 Type of Refrigeration Ice Cruising Speed 6 to 10 Knots Average Crew 2 to 10 Length of Trip 7 to 14 Days Convertibility to Other Types of Gear Tuna Long Line

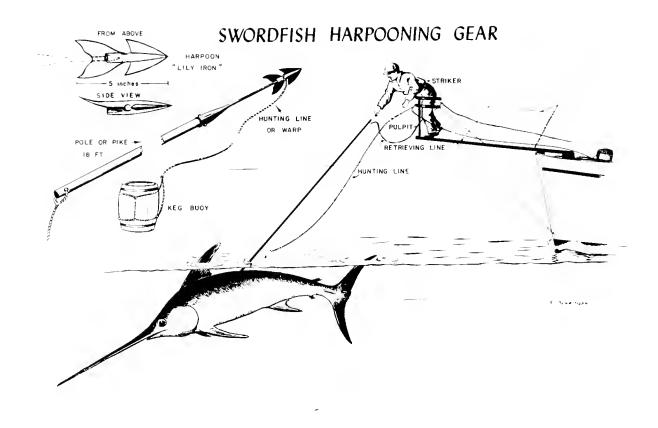


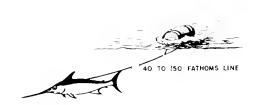


#### SWORDFISH VESSEL

Length in Feet	32 to 83
Beam in Feet	9 to <b>21</b>
Draft in Feet	3 to 10
Net Tonnage	5 to 56
Construction	Wood
Engine: Type	Diesel or Gas
Horsepower	50 to 150
Type of Refrigeration	Ice or None
Cruising Speed	5 to 8 Knots
Average Crew	2 to 3
Length of Trip	I to 16 Days
Convertibility to Other Types of Gear	Trawl, Seine, Lobster Pots, Clam Dredge and Gill Netter

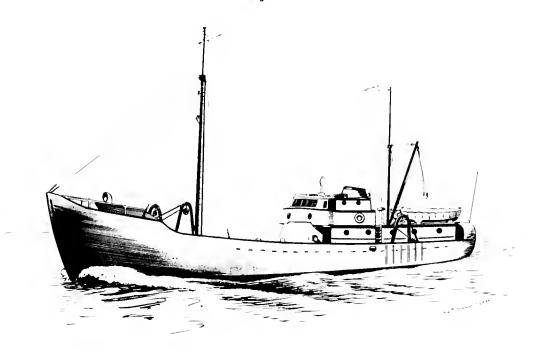






# ATLANTIC TRAWLER

Large



#### ATLANTIC TRAWLER, LARGE

# 

Draft in Feet ...... 10 to 15

Construction ...... Wood or Steel

Engine: Type..... Diesel

Horsepower ...... 320 to 735

Type of Refrigeration ..... Ice

Cruising Speed...... 7 to 15 Knots

Length of Trip...... 5 to 14 Days

Convertibility to

Other Types of Gear..... None

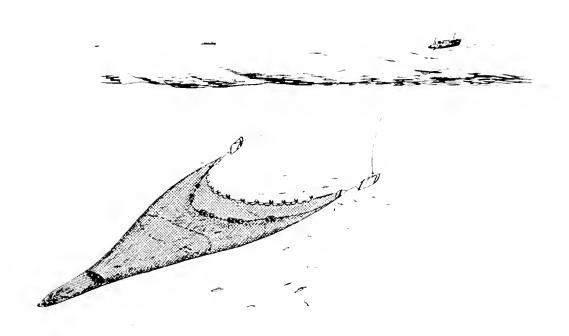


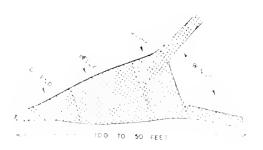


### ATLANTIC DRAGGER, MEDIUM

Length in Feet	60 to 100	~ ~ 1	}
Beam in Feet	14 to 23		<i></i>
Draft in Feet	6 to 13	CANADA	<i>)</i>
Net Tonnage	51 to 150	1/3	
Construction	Wood or Steel		٠,
Engine: Type	Diesel	Maine	*
Horsepower	155 to <b>400</b>		
Type of Refrigeration	lee	)	
Cruising Speed	6 to 13 Knots	ATLANI	TIC OCEAN
Average Crew	5 to 15		
Length of Trip	1 to 14 Days	. w 2	
	Scallop Dredge, Purse Seine, and Harpoon	300	

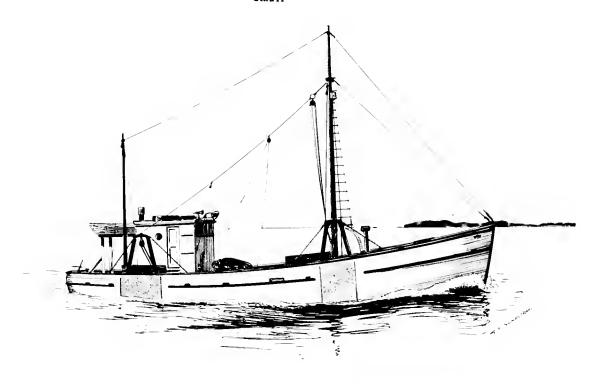
# ATLANTIC OTTER TRAWL





# ATLANTIC DRAGGER

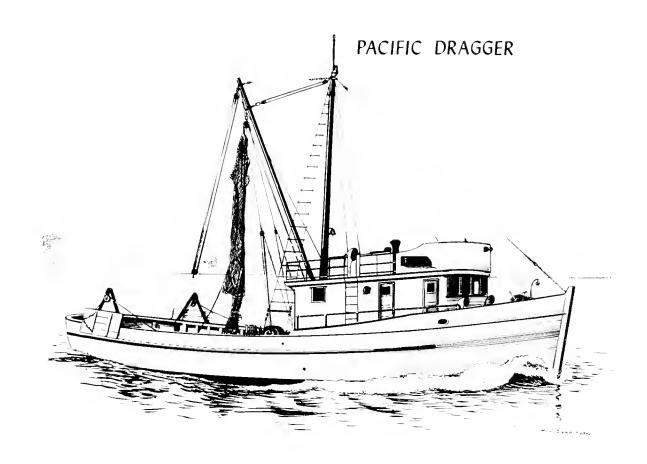
Small



#### ATLANTIC DRAGGER, SMALL

Length in Feet	30 to 74
Beam in Feet	9 to <b>20</b>
Draft in Feet	$2\frac{1}{2}$ to 9
Net Tonnage	50 or under
Construction	Wood
Engine: Type	Diesel or Gas
Horsepower	50 to 260
Type of Refrigeration	lee
Cruising Speed	4.5 to 11 Knots
Average Crew	2 to 9
Length of Trip	1 to 8 Days
Convertibility to Other Types of Gear	Gill Net, Clam Dredge, and Purse Seine





#### PACIFIC DRAGGER

# 

 $Construction \ \dots \ W \texttt{ood}$ 

Engine: Type..... Diesel

Horsepower..... 50 to 450

Type of Refrigeration..... lce

Cruising Speed...... 9 to 12 Knots

Average Crew ...... 4 to 7

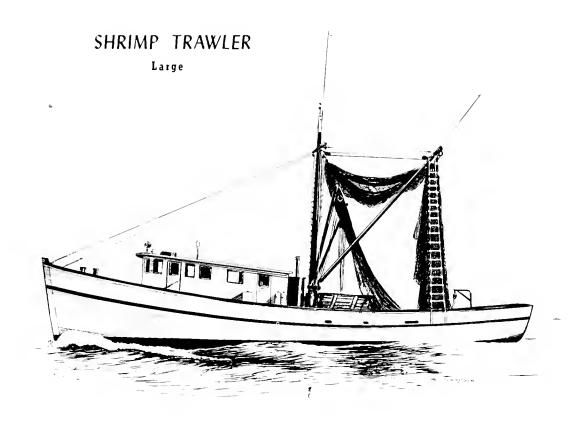
Length of Trip...... 1 to 10 Days

Convertibility to

Other Types of Gear..... Purse Seine, Troll, Tuna and

Troll, Tuna and Halibut Long-Line

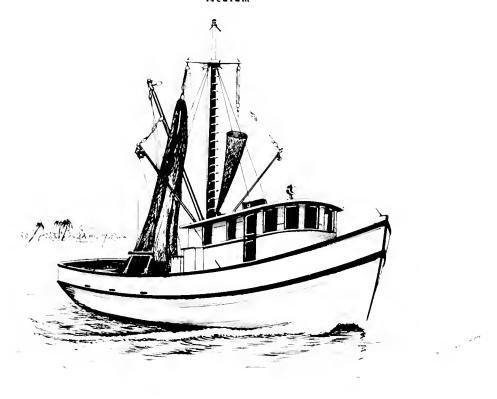




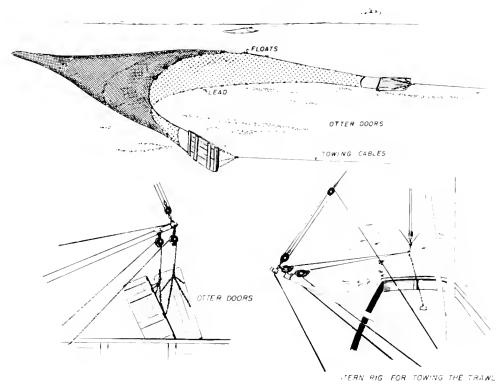
SHRIMP TRAWLER		MAIN AREA OF FISHING OPERATION N.C.
LARGE	MEDIUM	s.c.
Length in Feet 50 to 90	28 to 55	
Beam in Feet 12 to 24	5 to 18	Ga.
Draft in Feet 3 to 9	1 5 to 4	Ala.
Net Tonnage 25 to 38	8 to 24	Texas Louisiana Texas
Construction Wood, some Steel	Wood	Texas Louisiana
Engine: Type Diesel or Gas	Diesel or Gas	
Horsepower . 30 to 340	25 to 165	
Type of Refrigeration Mechanical or Ice	Ice	GULF OF MEXICO
Cruising Speed 7 to 15 Knots	5 to 8 Knots	(Pan
Av∈rage Crew 2 to 5	2 to 4	Uo
Length of Trip 1 to 42 Days	I to 24 Days	
Convertibility to Other Types of Gear Hand Lines	Hand Lines	MEXICO

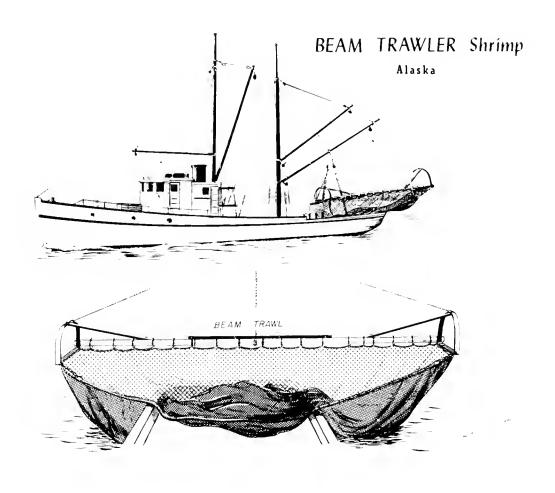
# SHRIMP TRAWLER





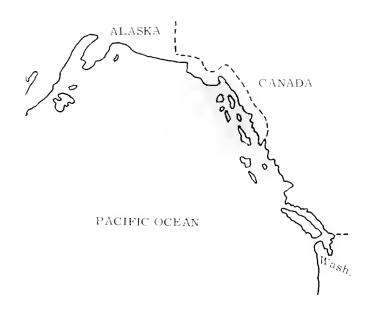
# SHRIMP TRAWL

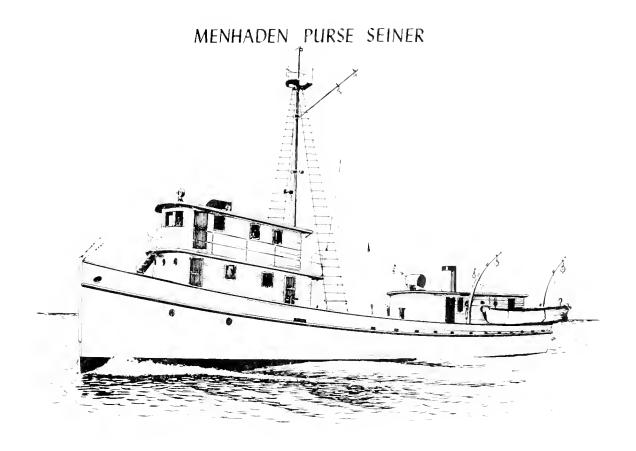




#### BEAM TRAWLER (Shrimp), ALASKA

Length in Feet	45 to 60
Beam in Feet	13 to 40
Draft in Feet	5 to 7
Net Tonnage	14 to 30
Construction	$\mathbf{W}\!\!\to\!\!\mathrm{od}$
Engine: Type	Diesel or Gas
Horsepower	100 to 165
Type of Refrigeration	None
Cruising Speed	6 to 9 Knots
Average Crew	3 to 4
Length of Trip	1 Day
Convertibility to Other Types of Gear	

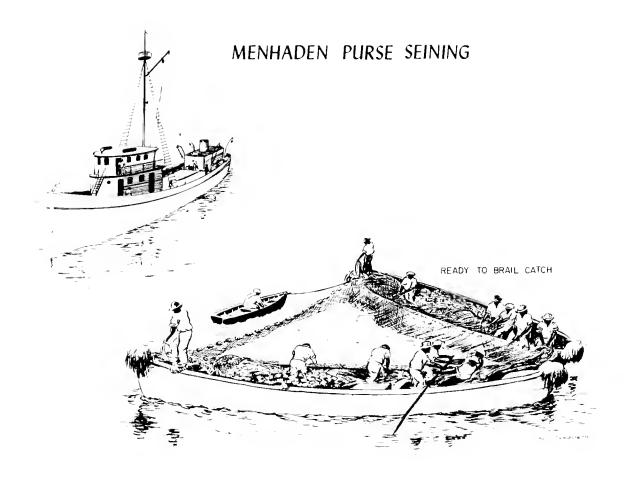


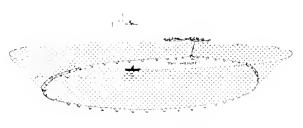


#### MENHADEN PURSE SEINER

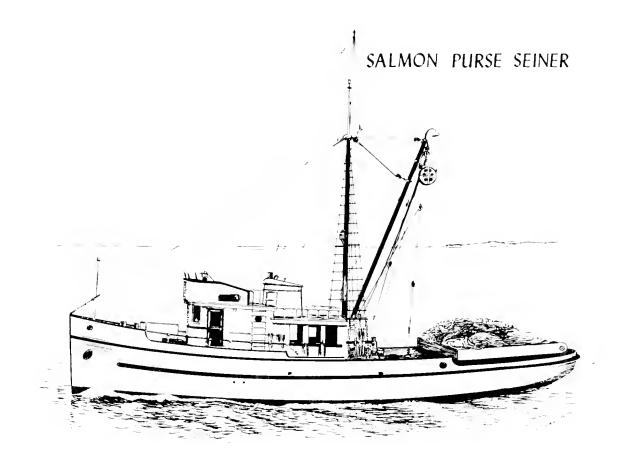
Length in Feet	82 to 134
Beam in Feet	18 5 to 27
Draft in Feet	8 to 11.8
Net Tonnage	38 to 230
Construction	Wood, some Steel
Engine: Type	Diesel
T T	240
Horsepower	240 to 1000
Type of Refrigeration	
· ·	None
Type of Refrigeration	None 9 to 16 Knots
Type of Refrigeration	None 9 to 16 Knots 23 to 34







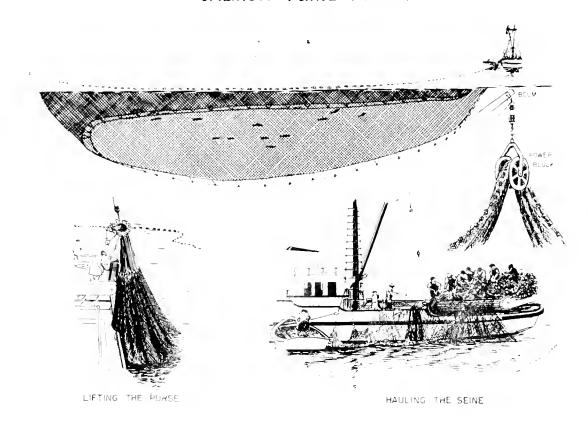
MENHADEN PURSE SEINE

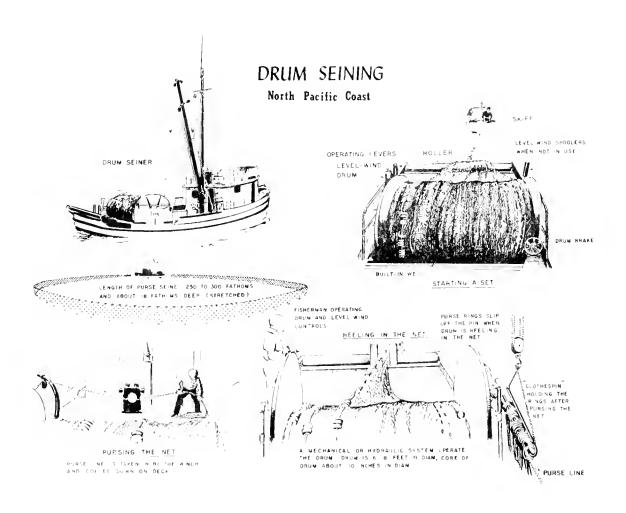


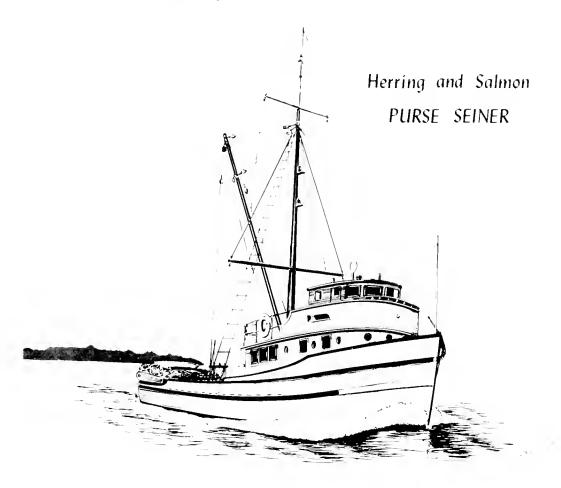
#### SALMON PURSE SEINER

Length in Feet	35 to 80	ALASKA 🔑 /	
Beam in Feet	16.5 to 22	ALASKA (	
Draft in Feet	3.5 to 9	CANADA	
Net Tonnage	7 to 40	- of the contract of the contr	
Construction	Wood		
Engine: Type	Diesel or Gas	00/ /	
Horsepower	35 to 300	$\{\}_{i}$	
Type of Refrigeration	None	8.0	
Cruising Speed	8 5 to 14 Knots	PACIFIC OCEAN	
Average Crew	4 to 9	T ACII IC OCLAN	
Length of Trip	1 to 2 Days		
Convertibility to Other Types of Gear	Long-Line, Trawl, and Troll	Was	sh.

# SALMON PURSE SEINING

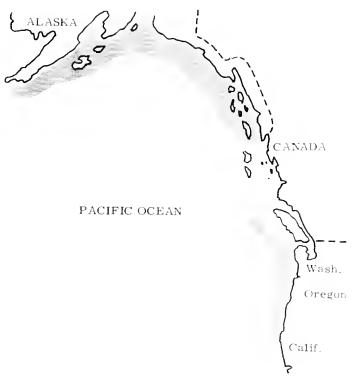


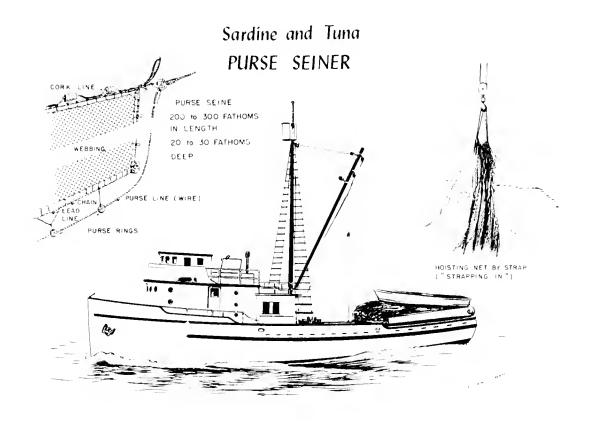




#### HERRING AND SALMON PURSE SEINER

Length in Feet	50 to 90
Beam in Feet	14 to 28
Draft in Feet	5 to 12
Net Tonnage	20 to 100
Construction	Wood, some Steel
Engine: Type	Diesel
Horsepower	165 to 500
Type of Refrigeration	Mechanical
Cruising Speed	8 to 15 Knots
Average Crew	5 to 12
Length of Trip	I to 5 Days
Convertibility to Other Types of Gear	Pilchard and Tuna Seine



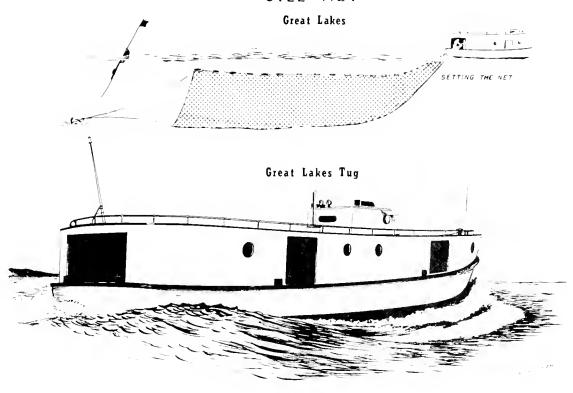


#### SARDINE AND TUNA PURSE SEINER

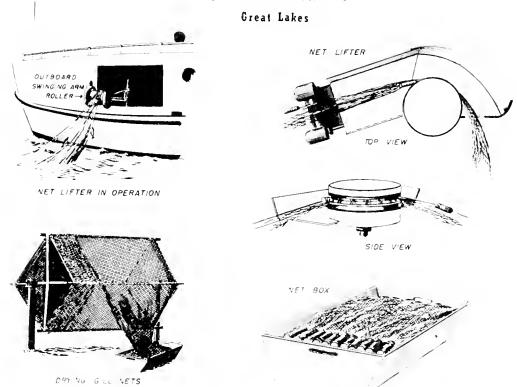
Length in Feet	65 to 100
Beam in Feet	19 to 28
Draft in Feet	10 to 13
Net Tonnage	50 to 150
Construction	Wood
Engine: Type	Diesel
Horsepower	165 to 600
Type of Refrigeration	Mechanical or Ice
Cruising Speed	8 to 10 Knots
Average Crew	10 to 13
Length of Trip	I to 30 Days
Convertibility to Other Types of Gear	Trawl



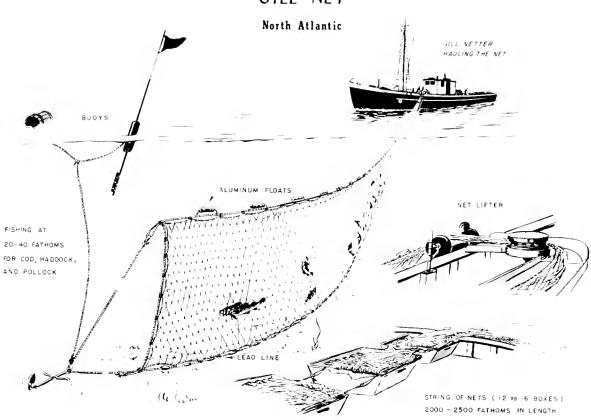
GILL NET



# GILL NET OPERATION



# GILL NET



#### GILL NETTER

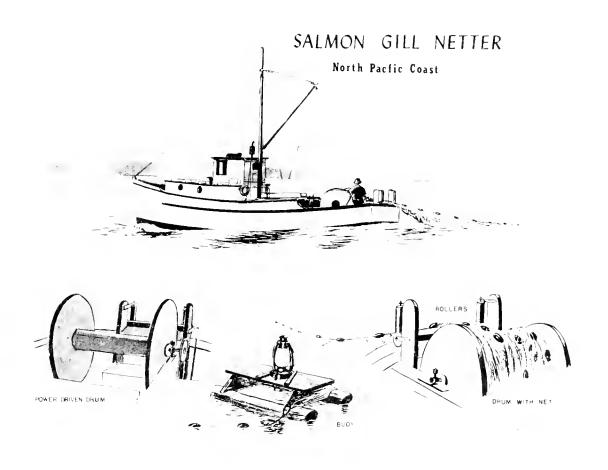
Length in Feet ..... 34 to 69

#### Draft in Feet ..... 4 to 8 Net Tonnage ..... 5 to 36 Construction ...... Wood Engine: Type..... Diesel, Some Gas Horsepower ...... 100 to 170 Type of Refrigeration ..... None Cruising Speed ..... 5 to 10 Knots Average Crew. ..... 3 to 7 Length of Trip ...... 8 Hours to I Day Convertibility to

Other Types of Gear..... Lobster Pots.

Trawl, Clam Dredge

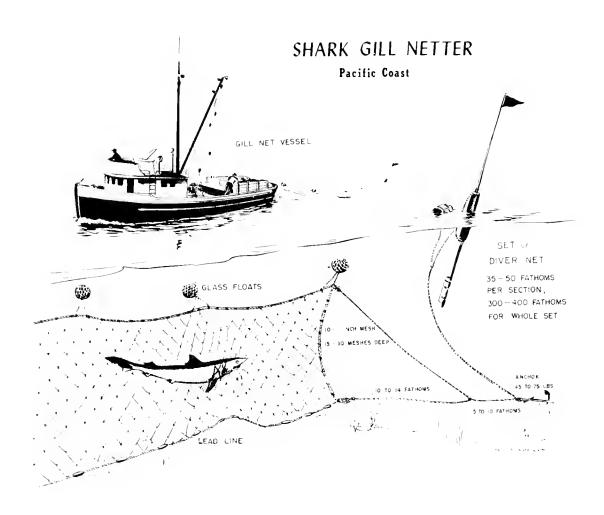




#### SALMON GILL NETTER

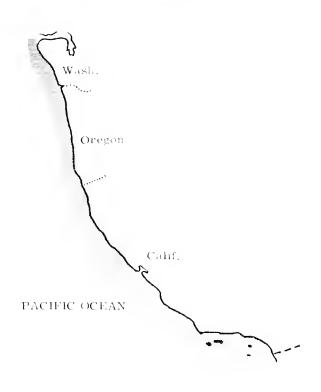
Length in Feet	22 to 32
Beam, in Feet	7 to 16 5
D: aft in Feet	I to 3
Net Timnage	½ to 7
Construction	Wood
Engine. Type	C7(4.7
Horsepower	50 to 140
Type of Refrigeration	hone
Cruising Speed	7 to 22 Knots
Average Crew	1 to 2
Length of Trip	1 to 2 Days
Convertibility to Other Types of Gear	Hand-Lip Troll



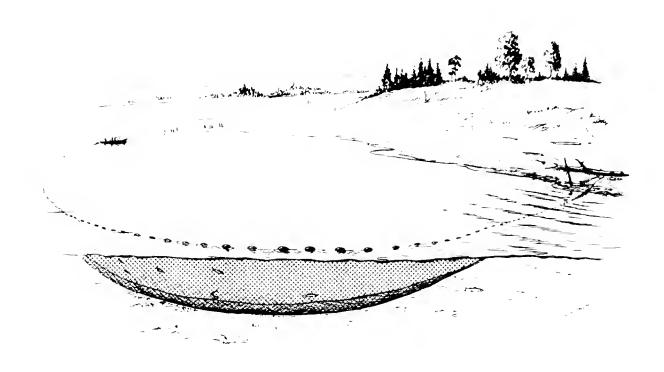


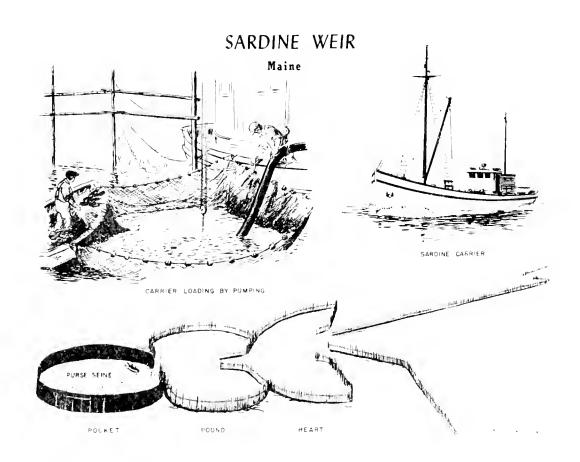
#### PACIFIC SHARK GILL NETTER

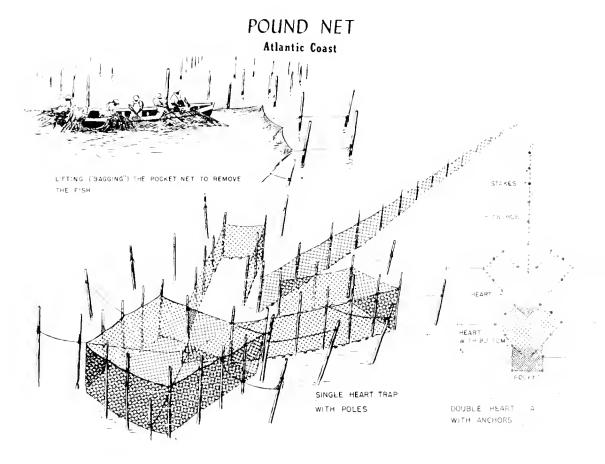
Length in Feet	30 to 60
Beam in Feet	10 to 15
Draft in Feet	3 to 7
Net Tennage	6 to 25
Construction	Wood
Engine: Type	Gas
Horsepower	75 to 150
Type of Refrigeration	None
Crising Speed	3 to 11 Knots
Average Crew	4 10 9
Length of Tre	2 to 6 Dats
Convertibility to Other Types of Gear	Furse Seine. Troll, Trawl. and Halbut Long-Line

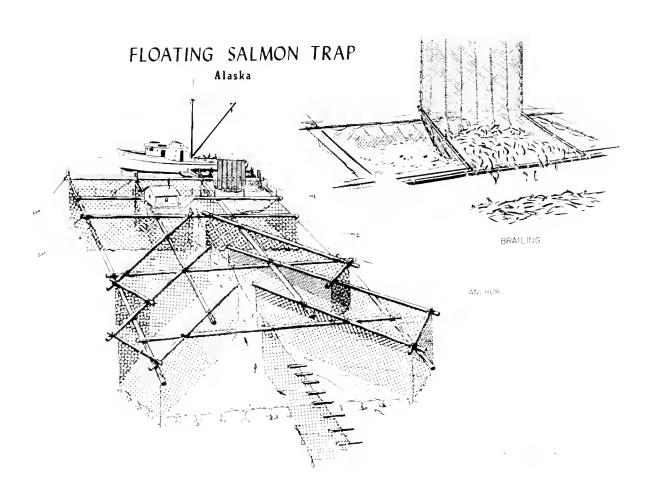


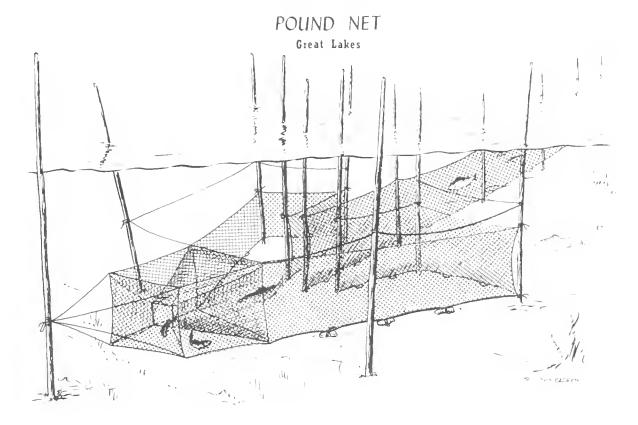
HAUL SEINE

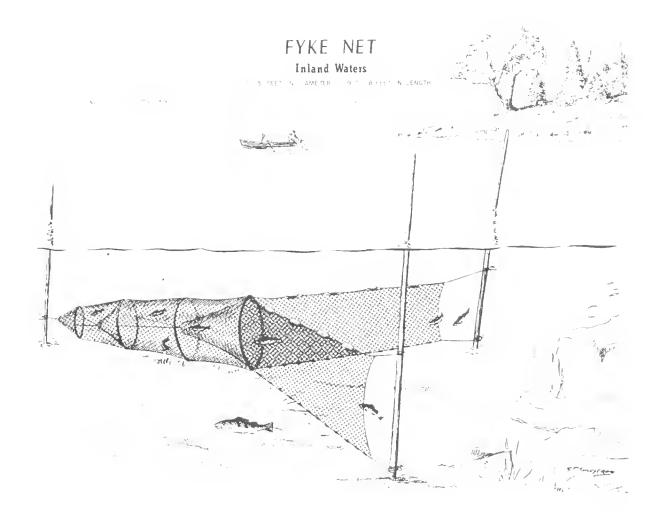


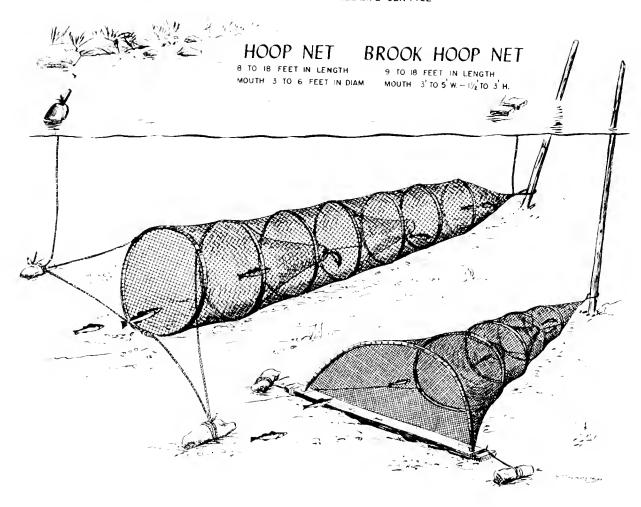






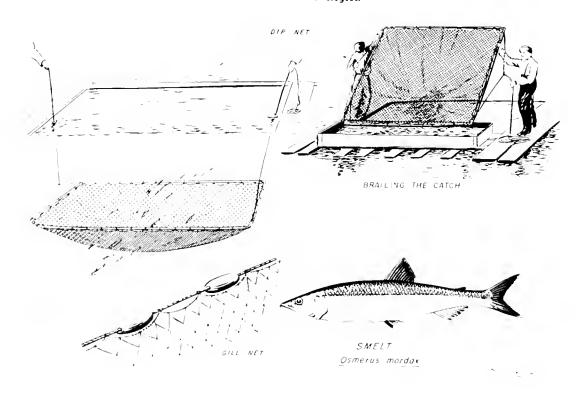




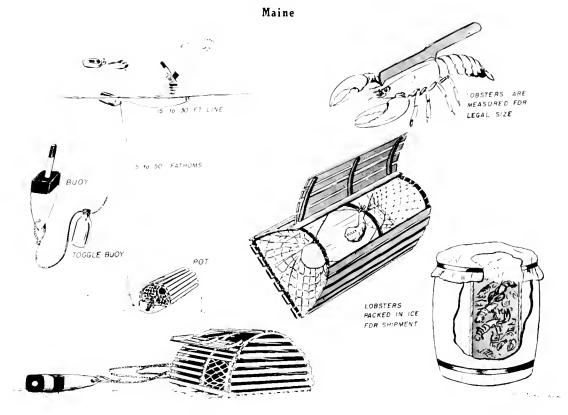


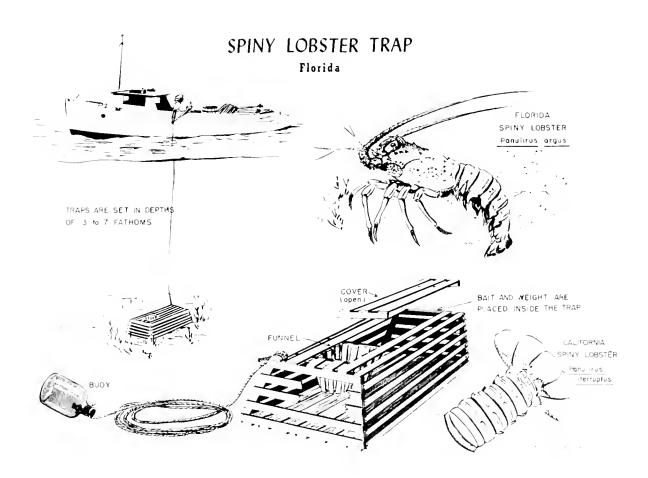
# SMELT FISHING

Great Lakes Region

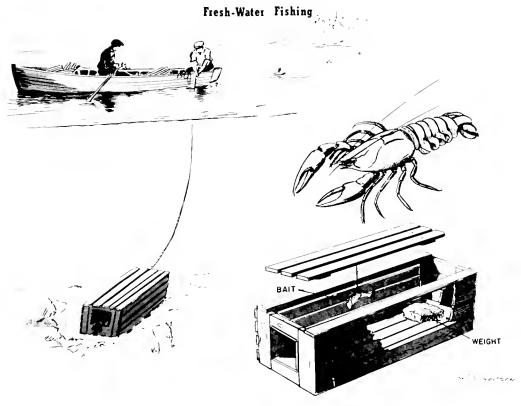


# LOBSTER POTS

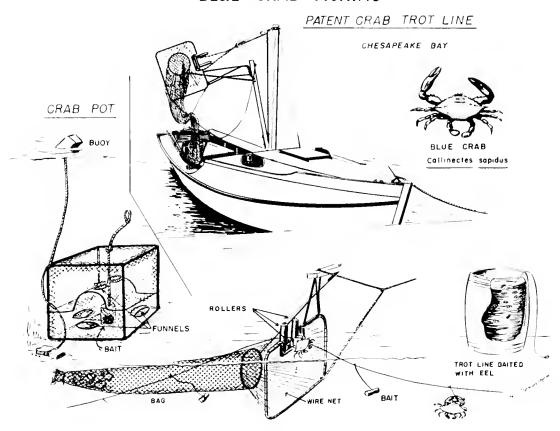




# CRAYFISH TRAP

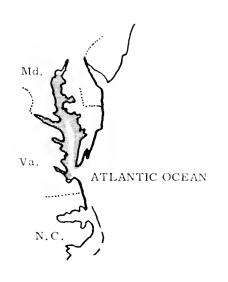


# BLUE CRAB FISHING



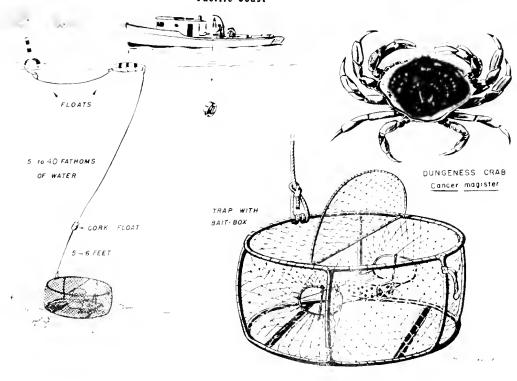
#### PATENT CRABBER

# Length in Feet 32 to 40 Beam in Feet 8 to 12 Draft in Feet 3 to 4 Net Tonnage 5 to 7 Construction Wood Engine: Type Gas Horsepower 25 to 100 Type of Refrigeration None Cruising Speed 8 to 10 Knots Average Crew 1 to 2 Length of Trip 1 Day Convertibility to Other Types of Gear Trot Line



# DUNGENESS CRAB TRAP

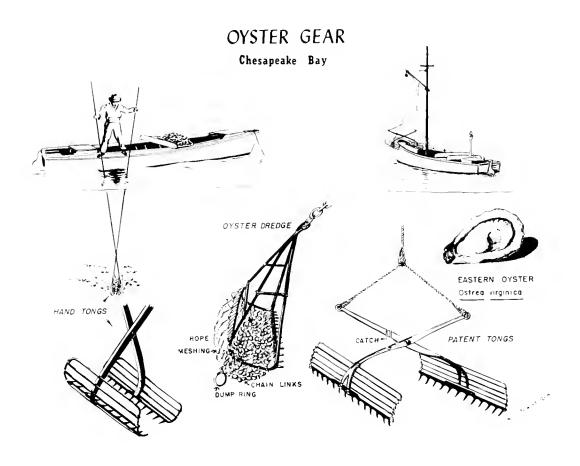
# Pacific Coast



## DUNGENESS CRAB BOAT

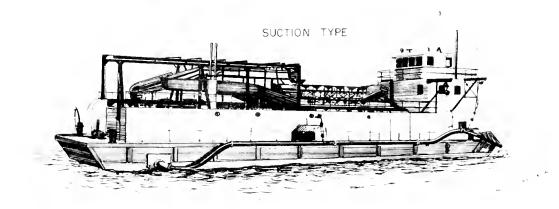
Length in Feet	30 to 65
Beam in Feet	10 to 14
Draft in Feet	3 to 6
Net Tonnage	3 to 20
Construction	Wood or Steel
Engine: Type	Diesel or Gas
Horsepower	75 to 150
Cruising Speed	8 to 14 Knots
Average Crew	2 to 3
Length of Trip	I to 10 Days
Convertibility to Other Types of Gear	Purse Seine, Troll, and Hali- but Long-Line



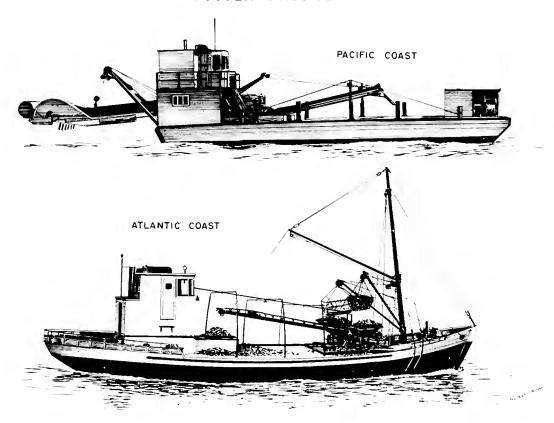


# OYSTER DREDGE Atlantic Coast





# OYSTER DREDGE

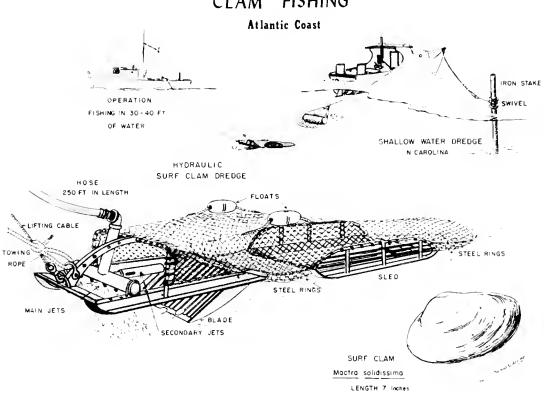


#### OYSTER DREDGE

Length in Feet	34 to 96
Beam in Feet	8 to 23
Draft in Feet	2.5 to 8
Net Tonnage	25 to 70
Construction	Wood
Engine: Type	Diesel or Gas
Horsepower	25 to 275
Type of Refrigeration	None
Cruising Speed	8 to 15 Knots
Average Crew	1 to 10
Length of Trip	1 Day
Convertibility to Other Types of Gear	Clam or Crab Dredge



# CLAM FISHING



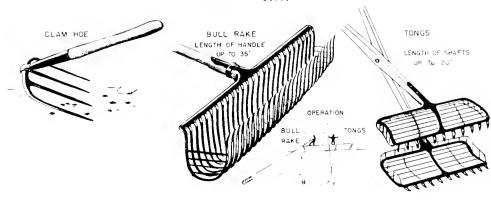
## CLAM DREDGER

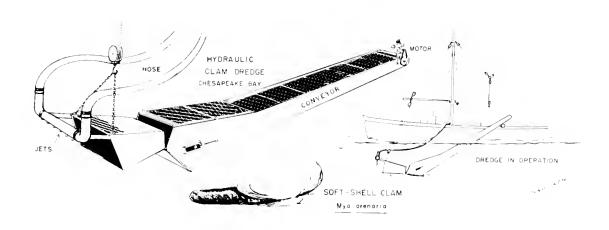
Length in Feet	31 to 62
Beam in Feet	9 to 18
Draft in Feet	3 to 9
Net Tonnage	3 to 40
Construction	Wood
Engine: Type	Diesel or Gas
Horsepower	25 to 250
Type of Refrigeration	None
Cruising Speed	8 to 11 Knots
Average Crew	1 to 3
Length of Trip	1 Day
Convertibility to Other Types of Gear	Trawl, Gill Net, Crab Dredge, and Trot Line

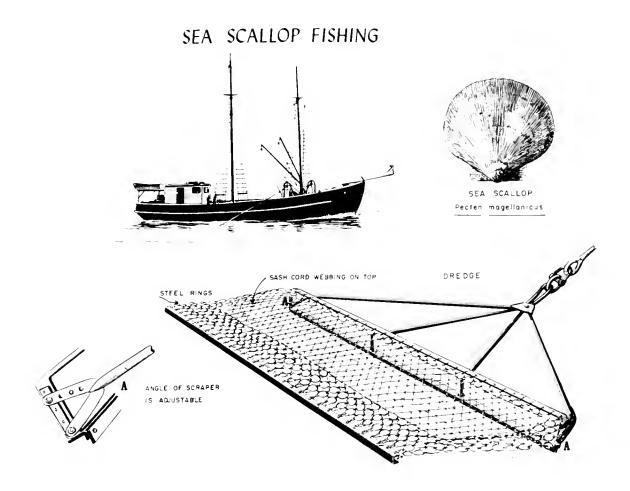


# CLAM FISHING







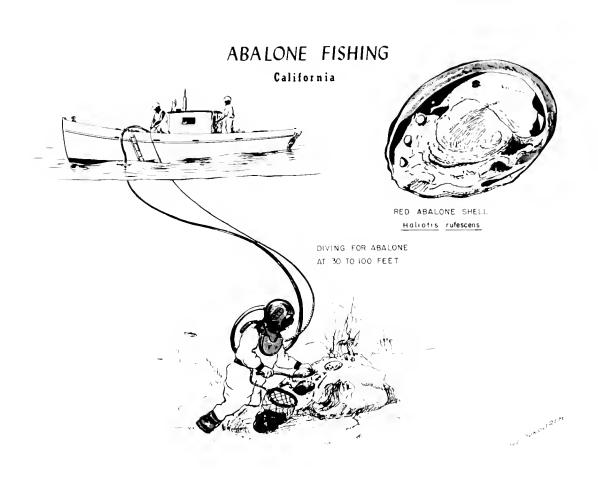


#### SEA SCALLOP DRAGGER

# 

Long-Line

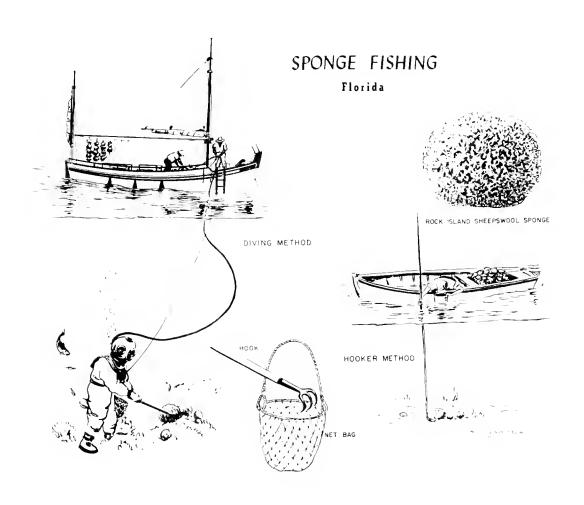




### ABALONE BOAT

Length in Feet	24 to 32
Beam in Feet	8 to 10
Draft in Feet	2 to 3
Net Tonnage	4 to 6
Construction	Wood
Engine: Type	Gas
Horsepower	90 to 165
Type of Refrigeration	None or Ice
Cruising Speed	8 to 12 Knots
Average Crew	3
Length of Trip	6 to 8 Days
Convertibility to Other Types of Gear	None



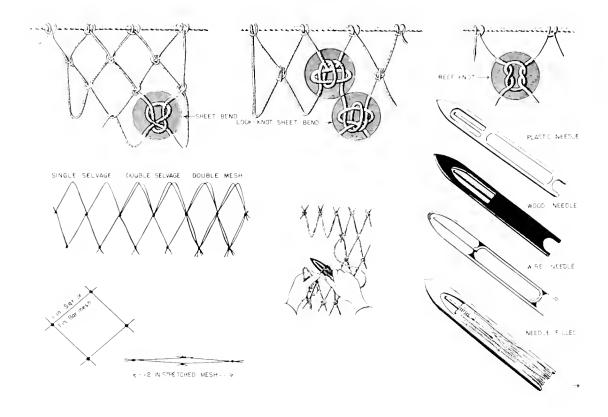


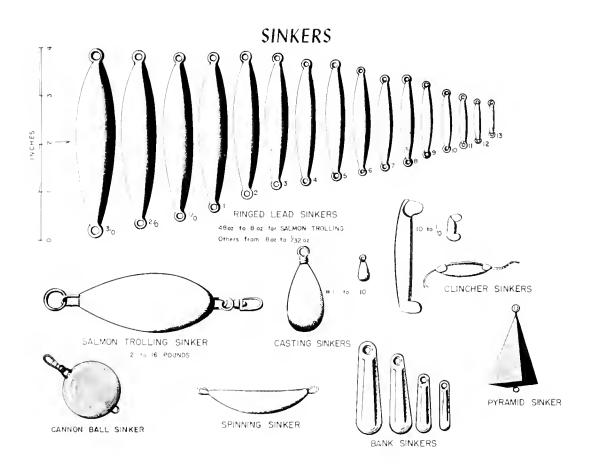
### SPONGE BOAT

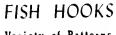
Length in Feet	36 to 48
Beam in Feet	11 to 15
Draft in Feet	4 to 6
Net Tonnage	6 to 10
Construction	Wood
Engine: Type	Diesel or Gas
Horsepower	25 to 159
Type of Refrigeration	None
Cruising Speed	6 to 8 Knots
Average Crew	5 to 8
Length of Trip	I to 20 Days
Convertibility to Other Types of Gear	Otter Trawl (Shrimp), and Hand Lines

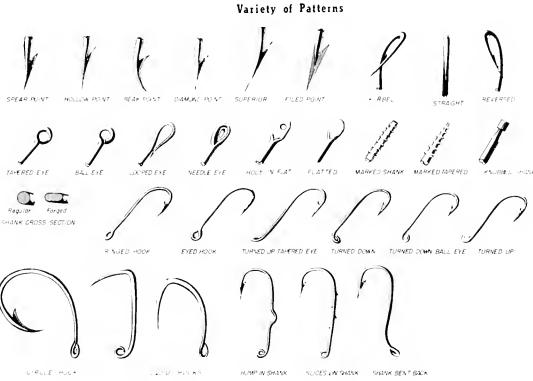


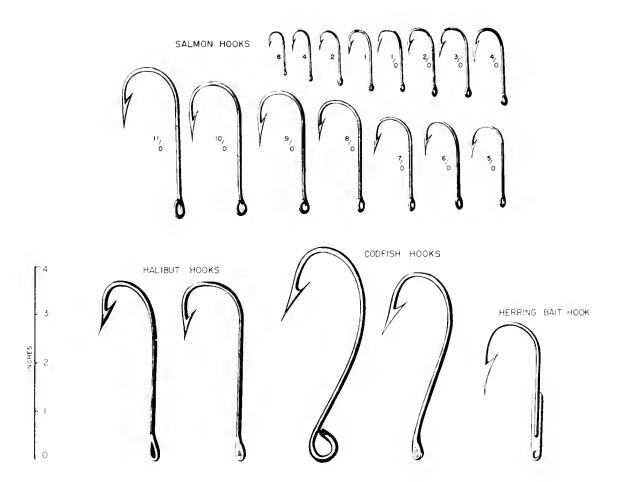
# NET KNOTS and NEEDLES

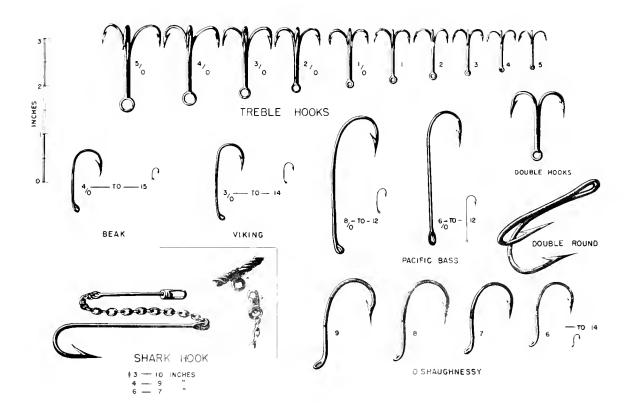


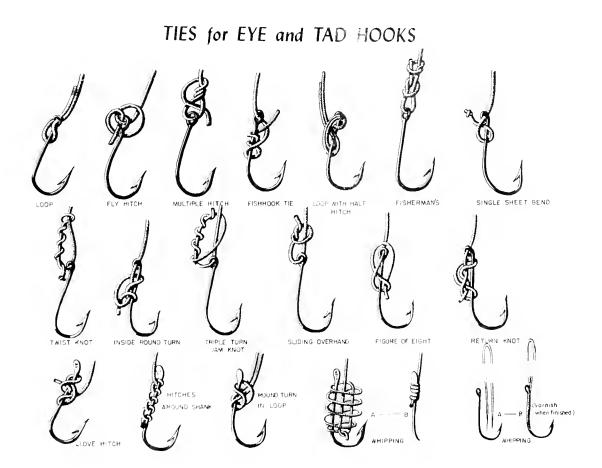


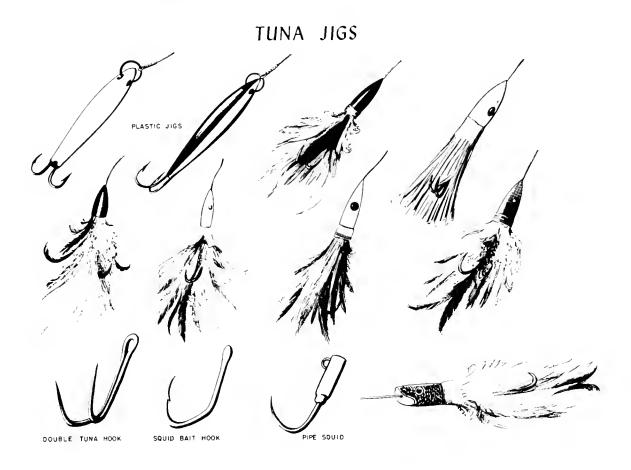






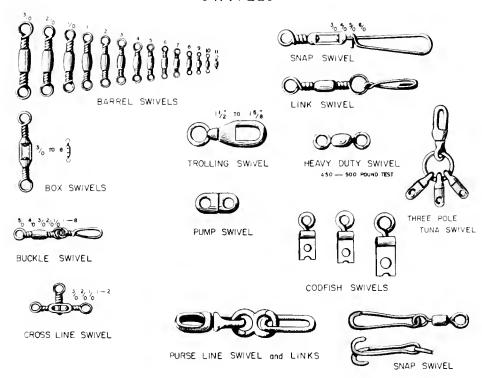




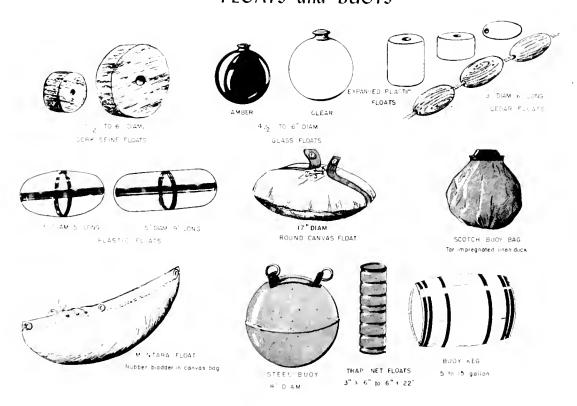




# **SWIVELS**



# FLOATS and BUOYS





#### FISHERY LEAFLETS

F.	L.	64	-	Construction	and	Operation	of	Lobster	Gear
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- F. L. 225 Gear Used in the Sea Scallop Fishery
- F. L. 262 Crab Pot Construction (Chesapeake Bay Type)
- F. L. 291 Trotline Construction, Operation and Maintenance (Chesapeake Bay Type)
- F. L. 373 Atlantic Coast Mackerel Purse Seine
- F. L. 379 New England Sink Gill Net
- F. L. 386 Pacific Salmon Drift Gill Netting
- F. L. 387 Commercial Salmon Trolling
- F. L. 394 Gulf of Mexico Shrimp Trawl Design
- F. L. 302 Kite Rigs for Otter Trawl Gear
- F. L. 316 Increasing the Spread of Shrimp Trawls
- F. L. 343 Floating Trawls
- F. L. 365 Drum Seining
- F. L. 400 The Pond Net Fishery in Virginia
- F. L. 419 Dungeness Crab Pots
- F. L. 422 Construction Details of Improved Tuna Long-Line Gear
- F. L. 437 Assembly Methods for Otter-Trawl Nets

## Send requests to--

U. S. Fish and Wildlife Service Department of the Interior Washington 25, D. C.

Give leaflet number and title.

