BOATBUILDING IN WINTERTON: THE DESIGN, CONSTRUCTION AND USE OF INSHORE FISHING BOATS IN A NEWFOUNDLAND COMMUNITY

PART 1

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BOATBUILDING IN WINTERTON: THE DESIGN, CONSTRUCTION, AND USE OF INSHORE FISHING BOATS IN A NEWFOUNDLAND COMMUNITY

by

© David Alan Taylor, B.A.

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Frontispiece: Eleazor Reid planing the edge of a plank.

ABSTRACT

The construction and use of inshore fishing boats is a distinctive and integral part of the culture of Newfoundland. Historically, the building of boats is one of the oldest traditions of material culture on the island. This thesis is a study of the living tradition of boatbuilding in the community of Winterton, Trinity Bay, Newfoundland. It attempts to describe the dynamics and functions of boatbuilding within the context of the community's social, economic and natural environment.

The principal data for this work is derived from tape recorded interviews with seven Winterton boat-builders, field measurements of boats, photographs of boats and boatbuilding activities, field drawings, and field observations. Fieldwork for the study was conducted in Winterton in 1978 and 1979.

The central focus of the thesis is upon the three essential aspects of any object of material culture: design, construction, and use. In regard to design, a wide variety of factors, many of them conceptual, are examined, including: the transmission of boatbuilding knowledge; the use of moulds; the use of mental templates; performance correlatives; correction and improvement of design;

experimentation; and, creativity. The process of construction is analyzed in two ways: by describing in detail the manner in which one man built one boat; and, by exploring variation in the factors which affect the construction activities of other boatbuilders. The question of boat use is applied to each of the four boat types constructed and used in Winterton (e.g. motor boat, rodney, bay punt, and speedboat). In addition to functional considerations, the genesis, evolution and general morphology of each type is discussed.

Separate appendices contain: a boatbuilding survey questionnaire; portraits of informants; tables of offsets, stem and stern profiles, and lines plans of local boats; and, a glossary of terms used by Winterton boatbuilders.

Because of the limited focus of this study, verifiable conclusions cannot be drawn about the nature of boatbuilding in other Newfoundland fishing communities. Confirmation of the existence of patterns of behaviour, in other communities, which are similar to those practiced in Winterton requires further research. To that end, this study provides a body of data for comparison, as well as theories and methodologies which may be applied in other localities.

DEDICATION

This thesis is for:

Edward D. "Sandy" Ives

ACKNOWLEDGEMENTS

Over the course of the many months that it has taken me to research and write this thesis, I have been most fortunate in receiving the aid of a great many people, in Newfoundland and elsewhere. To be sure, this work would not have been possible without their generous assistance. Although I cannot possibly list everyone who has helped in one way or another, I would be remiss if I did not mention a number of individuals who have made major contributions. And this I do with pleasure.

To my principal informants in Winterton I owe the greatest debt. Eleazor Reid, Marcus French, Lionel Piercey, Herbert Harnum, Fred P. Hiscock, Chesley Gregory, Wilson Reid, and Reuben Reid couldn't have been more helpful. Not only did they cheerfully answer all of my many questions, but they introduced me to others whom they thought could provide me with the information I sought, treated me to innumerable "lunches," and, on a couple of occasions, put me up in their homes. Because of these warm, hospitable men and their families, I will never look back on my research in Winterton as anything but an extremely enjoyable experience.

Other Winterton residents must be mentioned: Wilson Downey and Clarence Brown, both of whom answered my questions about the boats that they were building; Gordon Parrott, who allowed me to read his well-written manuscript on the history of Winterton; Clarence Parrott, who shared with me his engrossing reminiscences of Winterton's past; and Charlie Reid and Ralph Reid, both of whom gave me permission to make copies of superb photographs (taken by Ralph) depicting their father's boatbuilding activities in the 1950's and 1960's.

Fieldwork can be an expense that an impecunious graduate student can ill afford, however, my burden was lessened considerably as a result of financial assistance from various sources. Dr. Frederick A. Aldrich, Dean of Graduate Studies, awarded me a generous stipend in the form of a graduate fellowship. The Department of Folklore provided me with an archive assistantship. Drs. Kenneth S. Goldstein, Neil V. Rosenberg, and David D. Buchan, respective heads of the Department of Folklore during my course of study, all boosted my research efforts by approving requests for fieldwork funds.

I am especially grateful to my thesis advisor, Dr. Gerald L. Pocius. He offered countless valuable suggestions concerning the direction of the study, gave my bulky manuscript a careful and critical reading, and fed me a steady (and most welcome), stream of encouragement throughout the duration of the project.

Other colleagues in the Department of Folklore extended much aid along the way. Robert McCarl provided an exceptionally insightful criticism of an early draft of a section of this work. Dr. Lawrence Small, Wilfred Wareham and John Ashton distributed my questionnaire concerning boatbuilding practices to students in their folklore classes. Martin Laba and Peter Narváez, my housemates when the majority of these pages were drafted, made my efforts easier with their bonhomie (not to mention excellent rock and roll). Nearly all of my fellow graduate students, at one time or another, offered words of advice or encouragement.

In regard to the graphics contained in this thesis I have been particularly fortunate. J. Rodger Pearson took time out from his demanding schedule as Head of the Department of Naval Architecture and Shipbuilding at the College of Fisheries, Navigation, Marine Engineering and Electronics, to produce superb lines drawings from my field measurements of several Winterton boats. Bill Wheeler and Ben Hansen at the ETV Photo Section at Memorial University fulfilled my photographic printing requirements with promptness, courtesy, and a high level of professionalism. Cartographer Mike MacIntyre executed two fine maps of the study area.

Thanks are also due to: professional boatbuilder Walter J. Simmons of Lincolnville, Maine, for many stimulating conversations about boats and boatbuilding, and for providing me with the opportunity to acquire practical boatbuilding experience in his shop; Basil Greenhill, Director of the National Maritime Museum, Greenwich, England, for sharing his opinions with me concerning the connections between the boatbuilding traditions of Newfoundland and Great Britain; Dr. John J. Mannion of the Department of Geography, Memorial University, for his support of my work; Verrick Cox, ship model builder at the Newfoundland Museum, for background information about boatbuilding practices in Newfoundland; Walter Peddle, education specialist at the Newfoundland Museum, for the gift of a rodney half model from his personal collection; Stan Pinsent of Gander and Musgrave Harbour, for the gift of a motor boat half model which he carved, and for information pertaining to his boatbuilding methods; Hilda C. Murray, for allowing me to read her manuscript on boatbuilding in her home community of Elliston, Trinity Bay; John Sparkes of Lower Island Cove, for permitting me to take measurements of a motor boat which he purchased from Eleazor Reid; Frank Pinhorn, Program and Policy Planner, Newfoundland Department of Fisheries (and native of Winterton), for detailed information about the various types of fishing activity engaged in by Winterton fishermen; M.M. "Duke" Manuel, Chief Technical Advisor, Fisheries and Marine Service, Environment Canada, for data pertaining to the Fishermen's Assistance Plans; Alex H. McGruer, II, Fisheries Loan Board of Newfoundland, for literature dealing with the regulations of the Fisheries Loan Board; David Squires, Newfoundland Department of Municipal Affairs and Housing, for maps of Winterton and a copy of a proposed municipal plan for the community; Ray MacKean, model maker and small craft researcher of Rothesay, N.B., for sharing his views with me about the history of boatbuilding in eastern Canada; and Dr. Peter C. Morley, University of Utah, for the critical reading of sections of this work.

The staff of the Memorial University of Newfoundland Folklore and Language Archive went out of their way to assist me. Special thanks go to Director Neil V. Rosenberg, Archival Assistant Philip Hiscock, and Secretary Sharon Cochrane.

I would also like to extend my appreciation to the personnel at: the Centre for Newfoundland Studies (MUN); the Henrietta Harvey Library (MUN); the Maritime History Archive (MUN); and, the Newfoundland Provincial Archive.

As Secretary of the Department of Folklore, Cindy Turpin has helped me in myriad ways since my arrival in Newfoundland. In addition, as the typist of this thesis she used her considerable organizational abilities to transform my disjointed draft into a neat and orderly final copy.

Two women who are very special to me could not be omitted from this list of acknowledgements. Although they were not always certain as to why I was so keen about fooling around with boats, Mrs. Bertha Taylor (my mother) and Geraldine Barter never faltered in their support of me and my goals.

Finally, I come to one debt which is long past due. Unquestionably, the study of folklore has done much to change my life in a very positive way, and I am pleased to be able to dedicate this work to the wonderful teacher who got me hooked on it in the first place: Edward D. "Sandy" Ives.

TABLE OF CONTENTS

LIST OF FIGURES

Frontispiece: Eleazor Reid planing the edge of a plank

FIGURE PAGE

FIGURE PAGE

". . . a boat should be judged only, and I repeat only, in the light of the requirements for which she was built and the resources of the society which built her. She should never be judged by comparison with other boats built for different purposes of different materials in different circumstances. The basic question is one of fitness of purpose in relation to broad local circumstances. To appreciate a boat one must be aware of the factors that gave rise to her building, the timber available, the general environment, the building traditions of the society which produced her and, above all, the purpose for which she was built."

Basil Greenhill
Archaeology of the Boat: A New Introductory Study

I

INTRODUCTION

Water craft have long played an important role in the lives of men. Their importance is keenly felt on the island of Newfoundland. There, since the first European contacts, boats and ships have always had a major impact on such critical aspects of island life as fishing, commerce, transportation, and communication. The fact that, today, some 19,000 fishing boats alone can be found in the scores of small communities that dot Newfoundland's rugged 8,000 mile coastline not only indicates the widespread importance of fishing to the island's economy, but also underlines the pervasiveness of boat use. Yet, despite the fundamental indespensability of water craft to fishing and other central aspects of Newfoundland's culture, very little has ever been written about the nature of boatbuilding on the island;[1] a strong tradition[2] of which Newfoundlanders are justifiably proud.

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[1] In fact, very little has been written about <u>any</u> aspect of the material culture of Newfoundland.

[2] I should make it clear, at the outset, that by "tradition" I mean that body of rules, methods, beliefs, values and other patterns of behaviour that are passed down orally, from one generation to the next, as part of the socialization process in any given culture.

Previous Scholarship

Why little has been written about traditional boatbuilding in Newfoundland is difficult to determine. Perhaps the very ordinariness of boats -- fishing craft in particular -- has caused people to disregard them as proper objects of study. Or, perhaps individuals who may have been interested in studying boats and boatbuilding have been discouraged from doing so because they did not feel that they possessed the necessary skills. Another possibility is that because of an élitist approach to maritime history, the study of small, inshore working boats has been ignored in preference for the study of larger, more costly, and more majestic vessels such as the coasting schooners or ocean-going square-riggers of the past. Whatever the answer or answers may be, it is clear that Newfoundland traditional boatbuilding is a topic that has not generated much interest among scholars. Publications concerning boatbuilding in Newfoundland are exceedingly scarce. There are no books devoted to the subject, and the few articles which have appeared tend to be extremely superficial. Nevertheless, there are a few publications which yield valuable data.

Two works by anthropologists, while they do not address the matter of boatbuilding directly, provide the researcher with excellent contextual material. One is

Louis J. Chiaramonte's brief Craftsmen-Client Contracts: Interpersonal Relations in a Newfoundland Fishing Community[3] (1970). In this study, Chiaramonte analyzes the complex social exchanges that can take place in a small community on the South Coast of Newfoundland when craftsmen -- skilled boatbuilders, carpenters and engine mechanics -- are called upon by other members of the community to perform services for them. The other work is James C. Faris' Cat Harbour: A Newfoundland Fishing Settlement[4] (1972). It is a superb monograph which describes a wide range of cultural patterns in a small community on the northeastern coast of Newfoundland, including verbal communication, kinship relationships, economic structures, and ecological utilization.

A work by Victor Butler, a non-academic, is a valuable source of information about boat use and boatbuilding in Newfoundland during the 20th century. In his fascinating "oral autobiography" The Little Nord Easter:

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[3]Louis J. Chiaramonte, Craftsmen-Client Contracts: Interpersonal Relations in a Newfoundland Fishing Community (St. John's: Institute of Social and Economic Research, 1970).

[4]James C. Faris, Cat Harbour: A Newfoundland Fishing Settlement (St. John's: Institute of Social and Economic Research, 1972).

Reminiscences of a Placentia Bayman[5] (1975), Butler records highlights of his life as a fisherman, schooner skipper, master mechanic and boatbuilder. Of special interest are the drawings and descriptions of several boat types which are contained in this book.

Occasionally, brief articles on boatbuilding in various parts of Newfoundland appear in Decks Awash, the monthly magazine published by the Memorial University of Newfoundland Extension Service. Of particular interest is the May, 1973 issue (vol. 2, no. 2). This entire issue is devoted to boatbuilding in Newfoundland and includes articles on: fishing boat loan programs; problems facing the boatbuilding industry; Newfoundland boat yards; longliner construction; trap skiff construction; and, the future of boatbuilding in the province. It is illustrated with a number of excellent photographs of boats under construction, as well as photos of completed boats. While the bulk of the articles are concerned with vessels such as longliners which are built to non-traditional designs, it does contain some data pertinent to the study of traditional, inshore craft.

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[5]Victor Butler, The Little Nord Easter: Reminiscences of a Placentia Bayman, Memorial University of Newfoundland Folklore and Language Archive, Community Studies Series, No. 1 (St. John's: Memorial University of Newfoundland, 1976).

Maxwell Collett's article "The Harbour Buffett Motor Boat," which appeared in the July, 1969 issue (vol. 67, no. 2) of The Newfoundland Quarterly, is a well-written, though short, piece which describes how motor boats were built in Harbour Buffett, Placentia Bay, as well as their importance to the residents of the area. Also included in the article are diagrams of a boat designing system and a completed motor boat, plus a glossary of boat-building terms.

Noted maritime historian Howard I. Chapelle includes data on traditional Newfoundland boat types in his ambitious work American Small Sailing Craft[6] (1951), perhaps the most far-ranging compilation of North American small sailing craft. However, due to the sheer number of craft covered in this work (over 100), the descriptions of each type are not lengthy. (Chapelle devotes a scant four pages to two Newfoundland types:) a 17 foot craft which he calls, curiously, a "Toulinguet boat", and a 20 foot 3 inch craft which he labels, simply, "Newfoundland boat". He briefly discusses the origin of the two types as well as their construction and use. Lines plans of the two boats are presented, which are based on measurements taken

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[6]Howard I. Chapelle, American Small Sailing Craft: Their Design, Development, and Construction (New York: W. W. Norton, 1951).

from boats in St. John's harbour in 1950.[7] Chapelle makes the provocative statement that these boat types were introduced to Newfoundland from Nova Scotia "sometime before 1870,"[8] but, unfortunately he provides no data with which to support this claim.

A recent work, The Little Boats: Inshore Fishing Craft of Atlantic Canada[9] (1979), by Ray MacKean and Robert Percival is a survey of 19 little-known vernacular boat types. The book is a rather unusual and, perhaps, unlikely marriage of the work of a maker of scale model boats (MacKean), and the work of an artist who produces realistic paintings of boats (Percival). In essense, the book is a compilation of color and black and white photographs of models and painting, combined with brief descriptions of the boat types and anecdotal material on the fishermen of Atlantic Canada. One Newfoundland representative is included in the boat types covered (the Newfoundland skiff), but since the lines for this boat were

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[7]It is noteworthy that these plans have achieved wide circulation, particularly among American boatbuilders, and, currently, at least one firm is using them to build production hulls in fiberglass. This firm is "Yawl Boats," and is based in San Pedro, California.

[8]Chapelle, American Small Sailing Craft, p. 223.

[9]Ray MacKean and Robert Percival, The Little Boats: Inshore Fishing Craft of Atlantic Canada (Fredericton: Brunswick Press, 1979).

based on those presented by Chapelle in American Small Sailing Craft, rather than on original field research, little is added to existing literature. However, The Little Boats is of value in that it allows the researcher to make general comparisons between Newfoundland boat types and boat types from other regions of Atlantic Canada.[10]

Aside from the few published works discussed, additional information on boatbuilding in Newfoundland has been collected, but remains unpublished. A fine paper was written in 1970 by Hilda C. Murray, then a graduate student in folklore at Memorial University of Newfoundland. In this paper, entitled "Fishing Boats in Elliston, Trinity Bay,"[11] Murray discusses the evolution of boat designs, boat use, construction and design methods, specific to Elliston, her home community. The majority of her data is based on field interviews with knowledgeable fishermen/ boatbuilders. A number of papers on boatbuilding, written by undergraduate students enrolled in folklore courses, can be found in the Memorial University of Newfoundland

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[10] For a more detailed appraisal of The Little Boats see my review in Canadian Material History Bulletin (forthcoming).

[11] Hilda C. Murray, "Fishing Boats in Elliston, Trinity Bay," unpublished paper in possession of author, MUN, 1970.

Folklore and Language Archive, an impressive repository of tape recordings, manuscripts, photographs, artifacts, and ephemera maintained under the aegis of the Department of Folklore. Though descriptive rather than analytical, and often quite brief, these papers help to give the researcher some idea of the differentiation in boat design, construction and use that exists in Newfoundland. The best examples of these papers include: Trudy Bennett's "The Change in the Shapes of Boats Over Time" (MUNFLA accession number 79-655);[12] Warrick Canning's "Fishing Boats and Equipment and Some Types of Buildings in Englee, White Bay North" (69-5); John R. Dollimount's "Motor Dories and Their Use at François on the Southwest Coast;" (68-3); Maxine B. Ennis' "Inshore Fishing Boats Used on the Avalon and Burin Peninsulas" (72-244); Donna M. Fitzgerald's "Duncan Collins: Some Events in His Life as a Fisherman and Boatbuilder" (76-129); Richard L. Park's "Boats Used in Gillams, Past and Present" (68-17); and Norma E. Smith's "The Local Boatbuilder: Harold Pardy" (76-250).

In addition to these student papers, the Archive also contains several field recordings made in various parts

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[12] Hereafter, appropriate MUNFLA accession numbers will be given in parentheses following the paper in question.

of Newfoundland which include information about boatbuilding, as well as other Newfoundland traditions. Those which, in my opinion, are of greatest value are recordings made between 1964 and 1966 by folklorist John Widdowson.[13]

Objectives of This Study

The principal objectives of this study are to document the living tradition of boatbuilding in one, small Newfoundland community -- Winterton, Trinity Bay -- and to describe how that tradition fits into the cultural context of that community. In the absence of published information about traditional boatbuilding in Newfoundland, the primary data for this thesis is based on tape recorded interviews with seven Winterton boatbuilders, field observations, field measurements and photographs; all collected in 1978 and 1979.

In order to illustrate how boats and boatbuilding fit into the local cultural context, in Chapter III, "The Setting," I will present brief descriptions of the environment, the history and the economy of the study area.

The boatbuilding tradition itself will be analyzed by focusing attention on the three key elements of any

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[13]On several occasions Widdowson was accompanied by folklorist Herbert Halpert, extension agent Fred Earle, or linguist Harold Paddock. These, and other pertinent field recordings, along with their accession numbers, are listed in the Bibliography.

object of material culture: form, construction, and use. In Chapter V, "Design," using a theoretical framework set down by Christopher Alexander in his Notes on the Synthesis of Form[14] (1967), I will compare and contrast the nature of design in "unselfconscious" or folk cultures with those of "selfconscious" or non-folk cultures. In making these comparisons, I will extensively describe the basic elements of design in Winterton, including: how individuals acquire boatbuilding knowledge and the typical lines of passage of that knowledge; the design procedures used by Winterton boatbuilders, including the use of moulds and measurement formulas; the use of "mental templates";[15] the ways in which builders use their knowledge of "performance correlatives"[16] to manipulate form to achieve improved boat performance; the correction and improvement of design; the dynamic relationship between the forces of tradition and innovation; and, experimentation and creativity. In Chapter VI, "Construction," I will propose a method for

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[14] Christopher Alexander, Notes on the Synthesis of Form (Cambridge: Harvard University Press, 1967).

[15] I have borrowed this term from James Deetz, who uses it in his work Invitation to Archaeology (Garden City, N.Y.: The Natural History Press, 1967), pp. 45-49.

[16] This term is borrowed from C. Richard K. Lunt's "Lobsterboat Building on the Eastern Coast of Maine: A Comparative Study," Diss. Indiana University 1976, pp. 106-109.

the study of boat construction based on the factors which I consider to have the most significant influence on the outcome of the object being constructed. These factors are: the skills of the builder; the background of the builder; work techniques; tools used; materials used; time of construction activity; and, sequence of construction activities. To demonstrate how these factors can be described, in Part I of the chapter I will present a case study of the construction of one particular boat. In order to show the range of variation that can occur in the construction procedures used by Winterton builders, in Part II of the chapter I will address general comments to each of the above-mentioned influencing factors.

In Chapter IV, "Boat Types and Their Uses," I will present detailed descriptions of each of the four major boat types currently constructed and used in Winterton, devoting specific attention to the morphology of each time and its uses. Also, although an exhaustive investigation of the antecedents of contemporary boat types is beyond the scope of this work, I will venture tentative conclusions concerning the origins of each type.[17] In order to expand

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[17]While some of the conclusions I have drawn concerning the genesis of these boat types takes the focus of this study into the nineteenth century or earlier, for the most part, the time frame of this study is limited by the length of the memories of my informants. In other words, the basic time frame of the thesis is 1910-present.

on the history of boat construction and use in Winterton, descriptions of two extinct boat types will be included.

The secondary objective of this thesis is to assist others who may be interested in embarking on similar material culture research in Newfoundland or in other parts of the world. To that end, in Chapter II, "Methodology," I will carefully outline the manner in which I have conducted my research. Among other topics which I will discuss in this chapter, I will deal with: becoming involved in water craft research; preliminary research; the selection of a fieldwork site; interviewing techniques; informant involvement; the use of photography; and, two methods for recording the often complex forms of boats. In separate Appendices, I will also include a glossary of boatbuilding terms used in Winterton, a questionnaire which I have used to survey variation in Newfoundland boatbuilding traditions, measurement tables pertaining to the precise shapes of construction moulds utilized by some of my informants, and photographs of my informants.

It is my hope that this work will stimulate interest in this important area of material culture research, and will also permit Newfoundlanders and non-Newfoundlanders alike to arrive at a better understanding of and appreciation for a vital and unique tradition.

II

METHODOLOGY

"Isn't it complicated to study boats?"
"How can you understand all those curved lines?"
"I don't think I could ever understand how a boat is put together, let alone describe the process."

From comments such as these, made by fellow scholars, I've received the impression that the work that I have been engaged in is widely considered to be an extremely complex area fraught with nuances that are quite beyond the comprehension of most people. Sheer nonsense. Certainly, when a researcher undertakes the study of boatbuilding, the knowledge of specialized terms, concepts and fieldwork procedures are required. But how is this different from what is required of researchers who choose to investigate other areas? Persons involved in the study of vernacular house types, wagons, snowshoes, or any other item of material culture (or countless other topics in a variety of fields) must also acquire a familiarity with specialized terms, concepts and research techniques. However, I have, myself been guilty of standing in awe of the complexity of subjects about which I know little, or gnashing my teeth over their utter incomprehensibility (I'd place such things as algebra, auto mechanics and cantometrics[18] in these categories), I know that similar reactions to my work are not extraordinary.

It has long been my belief that any reasonably intelligent person with sufficient interest in boatbuilding is capable of conducting competent research in the field, provided that he has access to methodologies which are well-suited to his investigations. Therefore, while the basic purpose of this chapter will be to outline, in chronological order, the methodologies which were used to derive the data upon which this thesis is based, the secondary purpose will be to provide persons interested in undertaking boatbuilding research with some of the methods which can be used to approach the topic.

Background

Even before my arrival in Newfoundland in 1977, the subjects of boats and boatbuilding had been of considerable interest to me. Having grown up in Maine, a coastal state in the northeastern corner of the United States where commercial fishing plays a major role in the economy, it is not surprising that I had an opportunity to observe salt water boats at an early age. However, because my home was about fifty miles from the sea, for the first

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[18] "Cantometrics" is a method for the cross-cultural comparison of song performance.

fifteen or sixteen years of my life, my contact with boats was sporadic and was largely confined to drives to "the shore" with my family during the summer. A few years later, as an undergraduate at the University of Maine, I became involved in ethnographic fieldwork with commerical fishermen and, as a result, my contact with and interest in boats (especially work boats) intensified. Also during my undergraduate years, I became interested in folklore and oral history and I began to tape record interviews with retired lobster fishermen and smack skippers in order to learn more about the traditions of the Maine coast. Upon graduation from university, I moved to a coastal community and, for a period of about five years, worked as a contract researcher -- often conducting research pertaining to commercial fishing -- for a number of institutions, along with stints as a journalist for a small, island-based weekly newspaper.

Although I had long recognized the inestimable importance of boats to the fishing economy of Maine, and to the transportation of people and goods to coastal islands, for want of knowledge of how boats are built and used, up until 1975 I had never entered into any detailed study of them. In that year I was hired by the Smithsonian Institution to work in Maine as a regional fieldworker. Given the task of locating and interviewing possible participants for the upcoming Bicentennial Festival of American Folklife,[19] I had the opportunity to travel around Maine and interview a variety of traditional musicians, storytellers and craftsmen. Among the craftsmen I interviewed were several boatbuilders, and my contact with them served to pique my interest in boatbuilding. I began to read about various regional boat types of North America,[20] and I strove to become familiar with the various methods of construction employed by boatbuilders around the world. At about this time, my quest for knowledge about boatbuilding received a major boost from professional boatbuilder Walter J. Simmons.[21] A good friend and superb craftsman, he patiently taught me the rudiments of the method of drawing the full-size "lines" of boats, which is called "lofting," as well as how to carve and use half models. I also acquired several small wooden boats, and, through the use of them, I

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[19]The Festival of American Folklife is a regularly scheduled festival organized by the Division of Performing Arts of the Smithsonian Institution. In 1976, a twelve week extravaganza was held in Washington, D.C.

[20]For example: Howard I. Chapelle, American Small Sailing Craft: Their Design, Development and Construction (New York: W.W. Norton, 1951).

[21]Simmons is the proprietor of Ducktrap Woodworking, a one-man boatbuilding operation located in Lincolnville, Maine. He is also the author of Lapstrake Boatbuilding (Camden, Me.: International Marine Publishing Co., 1978).

became more familiar with the functional aspects of boat design, and discovered an affection for pleasure boating as well.

Preliminary Research

When I arrived in Newfoundland, boats and boatbuilding were not far from my consciousness, and I began to investigate the topics straight away. I began by reading everything I could find on boatbuilding in Newfoundland. Although, as I have mentioned previously, the amount of published information on boatbuilding in Newfoundland is remarkable only for its paucity, I devoured whatever I could lay my hands on, including provincial and town histories, guide books, government reports, "picture" books containing photographs of boats, and student papers on deposit at the Department of Geography (Memorial University of Newfoundland), at the Maritime History Archive (Memorial University of Newfoundland), and at the Newfoundland Provincial Archives, where I found several excellent photos made from glass plate negatives which depicted various types of boats in use around Newfoundland in the past.[22]

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[22] Photos in the Newfoundland Provincial Archives which depict small craft include the following (listed by accession number): A7-25-VP-1258; A7-23-VP-1254; A9-61-VP-2139; A9-64-VP-2140; A9-176-VP-2260; A10-11-VP-2276; A10-144-VP-2409; A10-156-VP-2421; A10-164-VP-2429; A12-58-VP-2771; A12-127-VP-2863; A12-128-VP-2864; A12-132-VP-2868; A17-26-VP-3630; B2-177-VP-1695; B3-232-VP-2910; B4-103-VP-3974; B4-106-VP-3981.

Also during this early stage of research (which, incidentally, comprised about four months), I pestered nearly everyone with whom I came in contact -- my landlord, Newfoundland-born students and faculty members, and fishermen from "the Battery" in St. John's -- with questions about boatbuilding. I also endeavoured to seek out local authorities on boatbuilding, among whom the most helpful was Verrick Cox, the professional builder of scale ship models who is employed by the Newfoundland Museum. When time and weather permitted, I also took short drives to harbours around the southern shore of the Avalon Peninsula and southern Conception Bay to look at the fishing boats in use there and, occasionally, to watch one being constructed.

As a collorary to the library research I was doing concerning Newfoundland boatbuilding activities, I also read books, journals and magazines which addressed themselves to boatbuilding in other parts of the world (notably, North America and the United Kingdom), in order to attempt comparisons between Newfoundland-built boats and craft built elsewhere, and also, to analyze the different methods that have been used to study boats and boatbuilding.

Having concluded a sizeable portion of preliminary research by January, 1978, I felt that I was ready to begin fieldwork, but before I could begin I had to answer one elementary question: Where should fieldwork be conducted?

I knew that I wanted to interview boatbuilders who constructed their craft from traditional designs using traditional methods but, on the huge island of Newfoundland where these skills are relatively widespread, I wasn't sure where I should go. However, with transportation costs in mind, I knew that I wouldn't be able to venture too far from my home-base of St. John's, and thus decided to restrict myself to the Avalon Peninsula. But what community on the Avalon Peninsula?

The selection of a fieldwork site was not especially scientific, but was, in the end, wholly satisfactory. In the course of conversations with fishermen from St. John's and nearby communities, one question I often asked was: What community, that you know of, has the best reputation for being the home of skilled boatbuilders? The reply to the question was, more often than not: Winterton, in Trinity Bay. And so, on one mild day in January of 1978, I drove to Winterton to see for myself.

After a 90 mile journey from St. John's, I arrived in the small community of Winterton, on the southern shore of Trinity Bay, and drove directly to the harbour. There, bottom-up and glistening in the weak rays of the winter sun, I saw an assortment of white-hulled fishing boats -- rodneys, motor boats, trap skiffs, and speedboats -- and knew at once that I had come to the right place. I introduced myself to a knot of boys standing near the boats (and eyeing me curiously) and told them I was "from the University" and was interested in learning about boatbuilding. I asked if they could direct me to someone in town with a reputation as a good boatbuilder. Without hesitation, they replied that the man for me to see was "Leaz" (for Eleazor) Reid, and told me where he lived.

I found 64 year-old Eleazor Reid stacking fire wood in a shed beside his house. I introduced myself and repeated my "bit" about being from the University and wanting to learn about boatbuilding. At first, he thought that I wanted to buy a boat from him, then that I wanted him to teach me how to build my own boat, but, after a more detailed explanation on my part, he caught on to my purpose. He invited me into his house where, fortified by strong tea, cakes and other goodies produced by his cheerful wife, we talked about boatbuilding in Winterton and, specifically, Reid's own boatbuilding experiences. I explained, in greater detail, my desire to learn about how boats are built in Winterton and asked if he would allow me to come back another time and tape record an interview with him. (I was careful to point out that any recordings that we made would be donated to the Memorial University Folklore and Language Archive, where they would be preserved for use by qualified researchers.) He readily agreed to talk with me again and, during the spring of 1978, I conducted two interviews with him, both about one hour in length.[23] During this period, having firmly grasped the nature of my interests, Reid personally introduced me to other boat-builders in the community, notably Wilson Downey and Marcus French, both of whom had boats under construction at the time. Following up on Reid's introduction, I conducted two tape recorded interviews with Marcus French during which I questioned him extensively about the 16'4" rodney that he was building.[24] I also took numerous photographs of the rodney during various stages of its construction and traced the mould shapes that French used for the boat (the results of these efforts are presented in detail in Chapter VI).

Throughout my interviews with Reid and French my principal objective was to acquire a general understanding of Winterton's boatbuilding tradition: its design and construction techniques; its terminology; its role in the local economy; and, its significance in the history of the community. Although my knowledge of the boatbuilding traditions of Maine and other cultures often aided me as I strove to comprehend the nature of boatbuilding in

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[23] I conducted tape recorded interviews with Reid on February 4, 1978, and February 18, 1978. See MUNFLA accession numbers C4432-4.

[24] These interviews were recorded on March 15, 1978 and April 7, 1978. See MUNFLA accession numbers C4436, C4438-9.

Winterton, I found that, occasionally, this knowledge prevented me from clearly grasping the information that my informants were attempting to convey to me. For example, when I first discussed Winterton design and construction techniques with Eleazor Reid and learned that he used "moulds" to derive specific hull shapes, I assumed that his definition of the term was the same as mine (the one that I had learned from Maine boatbuilders). A week later, when he showed me his moulds, to my chagrin I discovered that what he called a mould and what I called a mould were not the same at all. Embarassment aside, my misunderstanding proved to be an important lesson. I came to the realization that, in order to accurately perceive the boatbuilding traditions of Winterton, it was imperative that I listen to my informants with an objective ear and refuse to permit any preconceived notions about boatbuilding from obscuring what they were trying to tell me.

In January, 1979, following a seven month leave of absence from the University, I returned to Newfoundland and resumed my research in Winterton. After several months of reflection, I had decided to focus my major research efforts on the boatbuilding tradition of Winterton. However, before commencing intensive fieldwork there, I deemed it advisable to conduct some sort of island-wide boatbuilding survey to determine whether my preliminary findings concerning boatbuilding in Winterton were representative of boatbuilding activities in other parts of Newfoundland. The simplest and most economical way to collect this sort of information was, I reasoned, through the use of a questionnaire. I designed a brief questionnaire (see Appendix A) which I distributed to students in folklore classes at Memorial University. Some of these questionnaires were returned to me, completed by students from many parts of Newfoundland, and, from those data, I was able to gain a better understanding of boatbuilding activities throughout the province. I concluded that Winterton's boatbuilding traditions were fairly representative of those of other communities with similar social, economic and environmental conditions within which similar boat types are regularly constructed.[25]

Core Research

Having resolved to restrict my thesis research to boatbuilding in Winterton, I then felt that it was essential to conduct interviews with more builders than the two (Reid and French) with whom I had already recorded interviews in order to present data representative of the

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[25] This is not to say that all of the boatbuilding activities which I have observed in Winterton are practised _en bloc_ in other communities.

boatbuilding activities of the majority of Winterton builders. To that end, I discussed my goals with Eleazor Reid and Marcus French and asked if they could recommend additional builders with whom I could speak. I stressed that I wanted to talk with experienced boatbuilders, preferably individuals with solid reputations as craftsmen. The two men complied with my request without hesitation and introduced me to six men with boatbuilding experience: Fred P. Hiscock, Lionel Piercey, Chesley Gregory, Herbert Harnum, Reuben Reid (Eleazor's brother), and Wilson Reid (Eleazor's nephew). Between March, 1979 and November, 1979, I conducted interviews, both tape recorded and unrecorded, with all six, and conducted additional interviews with Eleazor Reid and Marcus French, as well.[26]

In order to determine the degree of differentiation in boat design and construction practices between my eight informants in a systematic manner, I endeavoured to address the same body of questions to each man. Interview questions covered the following twelve general topics: (1) personal history; (2) changes in the community of the years; (3) learning about boatbuilding; (4) design practices; (5) construction techniques; (6) performance

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[26]A complete listing of the dates of these interviews along with their MUNFLA accession numbers are given in the Bibliography.

correlatives; (7) boat use; (8) distinct boat types used in the community, past and present; (9) how boatbuilding fits into the annual round of subsistence activities in the community; (10) the vitality of the boatbuilding tradition, past and present; (11) the importance of boatbuilding in Winterton compared to its importance in other, nearby, communities; (12) boatbuilding terminology.

Interviewing

Most tape recorded interviews were between one and one and a half hours in length, and were conducted in a style that I call "semi-directed." By "semi-directed" interview, I mean an interview in which the interviewer controls the general flow of the subjects discussed but does not maintain such a tight control over the flow of the interview that the informant is discouraged from expanding on answers and offering up information that is relevant to the discussion.

I attempted to pose the same body of questions to all of my informants. To aid me in this process and to ensure that I did not accidentally omit key queries or waste precious fieldwork time, prior to every interview I always prepared a list of questions. However, because I wanted to promote a relaxed interview atmosphere, I did not read my written questions to my informants, but instead maintained eye contact as much as possible, occasionally glancing at my list to be sure that I was covering all the topics that I had intended to cover.[27]

All of my tape recorded interviews were "formal" in the sense that I contacted my informants in advance, discussed my purposes with them, and then, if they were agreeable, proceeded to set up a time and place for a recorded interview. Frequently, however, I conducted informal, sometimes unplanned, interviews which, for a number of reasons, were not recorded. For example, I never attempted to schedule a tape recorded interview with an individual before I had had a chance to talk with him face to face and explain the nature of my research. During these first encounters I attempted to gauge the depth of my informant's store of knowledge about boatbuilding (and to take some measure of the man as well) so that I would be fully prepared if and when we finally got around to a formal recorded interview. And, since I was a stranger asking a variety of questions about his life and his work, I assumed

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[27]For detailed discussions of interviewing and other fieldwork techniques see Edward D. Ives, The Tape-Recorded Interview: A Manual for Field Workers in Folklore and Oral History (Knoxville: University of Tennessee Press, 1980), and Kenneth S. Goldstein, A Guide for Field Workers in Folklore (Hatboro, Pa.: Folklore Associates, 1964).

that my informant was probably curious about me. Therefore, I always made it a point to talk about my own background to some extent. Another example of an unrecorded interview situation would be a conversation with a boatbuilder at work. Because I did not want to become known as a pest who got in the way of a man's work, I never attempted to tape record an interview if an informant was engaged in boatbuilding or some other form of work. Aside from being mindful of the fact that intrusions can cost a boatbuilder working time, I was also aware that distractions can result in serious injury if a man is working with sharp tools, operating machinery, or engaged in other situations requiring concentration. If the builder suggested that he knock off work for a while so that we might talk, I would agree, but I would not suggest it myself. Whenever I was in a builder's work place I tried to stay out of the way and talk with the builder only when it was safe to do so, and only when he indicated a willingness to talk with me. Other examples of unrecorded interviews might be brief, unplanned meetings with fishermen at the harbour at which time I might ask them questions about their boats, or short visits to the home of an informant for the purpose of clarifying a point or two about a statement that he had made during a recorded interview. While the use of a tape recorder was eschewed in all of these cases, I made it a practice to always record any pertinent data in the field notebook that I carried at all times.[28]

Informant Involvement

Without exception, my informants were exceedingly cooperative. They seemed genuinely interested in my project, and I soon discovered that the more I shared my thoughts with them about my work, the more excited they became about it. The result of this was, of course, very beneficial for me. For example, after I mentioned to one man that I was interested in meeting some of the older residents of Winterton for the purpose of learning more about the early history of the town, he personally introduced me to two of the town's foremost "local historians"[29] and he and his wife introduced me around at a meeting of the senior citizens' club.[30] On another occasion, I brought a preliminary draft of one of the chapters of this thesis to one of my informants for him to check over for accuracy, and, to my delight, he not only enjoyed reading the piece,

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[28]As soon as possible after every interview (whether recorded or unrecorded), I would enter a description of that interview in my notebook. Contextual data, sketches and other miscellaneous details were also included.

[29]These two individuals were Clarence Parrott and Gordon Parrott.

[30]The formal name of the club is The Sugarlaof Senior Citizens' Club.

but was able to point out a couple of omissions I had made and offer general criticisms of what I had written. In addition, having gained a better understanding of my goals by reading my draft, he then proceeded to offer bits of information that he had previously forgotten to pass on to me. Although it almost goes without saying that good rapport with one's informants is important, it bears repeating. Throughout the course of my fieldwork I endeavoured to conduct my research in a forthright manner so as to keep everyone well informed about the progress of my work; what I wanted and why. As a result, any possible suspicions about me were allayed and people extended many courtesies to me.

Requesting Illustrative Materials

In addition to asking my informants for information which could only be conveyed to me verbally, I also asked them if they had certain physical objects which would supply me with non-verbal types of information. I routinely asked my informants about two kinds of objects: builder's half models and old photographs that depicted Winterton boats. While I was unable to locate any half models (and was thus denied an opportunity to see what remained as evidence of this design technique), my request for old photographs lead to the discovery of a superb collection of photographs taken in the late 1950's and early 1960's by Ralph Reid. This collection, now in the possession of Charlie Reid, contains seventy excellent black and white photographs, most of which record the boat building activities of one of Winterton's most prolific builders, the late John Reid (Ralph and Charlie's father). Not only do the photographs depict many completed boats, but also illustrate the various steps involved in the construction of the craft. In a culture where boats have relatively short life-spans, photographs such as these are a veritable treasure to the researcher who is attempting to gain insight into the way boat design and construction were carried on in the past, when actual craft of a certain period are no longer available for study.

Photography

For an accurate depiction of a contemporary material culture tradition, such as boatbuilding, the use of photography is, perhaps, obligatory. Along with my tape recorder and field notebook, my camera accompanied me on all of my fieldtrips, and I used it to record many scenes in Winterton: boatbuilding activities; various boat types; the geography of the area; my informants; moulds; boats in use; to name a few of the subjects. For this study I took over four hundred black and white photographs, of which less than twenty per cent have found their way into these pages. I used a 35 mm single lens reflex camera exclusively, which I operated with either a 55 mm "normal" lens, or a 28 mm "wide angle" lens. The 28 mm lens was extremely useful for taking photographs in cramped spaces because its short focal length allowed me to take in a wide area while standing fairly close to the scene (a boat in a storehouse, for example). The 55 mm lens was used for nearly all shots which were not hampered by space limitations. Never completely sure of what lighting conditions would confront me when I arrived in Winterton for field work, I always took along several rolls of two types of film: Kodak Tri-X and Kodak Plus-X. A "fast" film with an ASA of 400, Tri-X is an excellent film for use in low light situations, such as those I invariably encountered in stores, garages, and other places where boats were being built. Plus-X, with an ASA of 125, is a medium-speed film which I found useful for shots taken outdoors in bright light.

Recording the Form of Boats: Two Methods

When one initiates the study of objects of material culture it is important to assiduously determine the form of the objects under study. When boats are the objects being studied, the importance of accurately ascertaining form is especially marked. To fully understand such factors as a boat's performance characteristics, the methods that were used to construct it, and the degree to which it represents the builder's response to environmental conditions, one must first learn its physical qualities.

But, in view of the fact that the shapes of boats are often made up of many complex curves and few flat surfaces, how should one proceed? The response to this question by persons conducting boat research has frequently been unsatisfactory. Descriptive endeavours are often limited to photographs, crude drawings and cursory written descriptions of the craft at hand. Such attempts to describe the form of a boat are woefully inadequate because they do not yield precise descriptions of the shapes of boat hulls -- the so-called "lines" of boats -- which are essential if one is involved in comparative studies, if observations are to be made about the "performance correlatives" of a craft, or, if a replica is to be built.

This lack of rigour in recording procedures is particularly unfortunate because at least two simple methods exist for recording the form -- taking the lines -- of small boats. One method, which is somewhat less time consuming, involves measurements taken from construction moulds combined with key measurements taken directly from the hull of the completed boat. This method of taking measurements, from which the lines of the boat can later be extrapolated, may be accomplished in two to three hours. The other method with which I am familiar involves taking a larger number of measurements directly from the hull of the vessel, and usually requires one to two days to accomplish. Although

I used only the former method in connection with my field-work in Winterton, I was prepared to use either. In hopes that they may be of some value to others who may embark upon research of this sort, I shall describe both methods.

Although the method involving measurements taken directly from the hull of a boat (which I shall describe in detail later) is undoubtedly the more accurate of the two, in view of my desire to compile the data necessary to make comparative observations about several boats, it became obvious to me that this method would demand more time in the field than I had the luxury of spending. Another factor restricting my use of this method had to do with the requirement that boats being studied must remain in a stationary position (i.e. on land) throughout the time needed to take measurements. In light of the fact that some of the boats that I wanted to study, especially the larger ones, remained in the water from May until the end of October, complete measurements could only be taken during the colder months of the year when the boats were not engaged in fishing activities. (To say the least, the weather conditions that persist during these months in Newfoundland are not conducive to accuracy in measurement taking.) Taking these factors into consideration, I decided to opt for an alternative method involving construction moulds and a few key hull measurements which could be executed more rapidly and which would require fewer measurements taken directly from the hull.

The construction moulds that builders use as patterns for transverse sections (timbers) of a hull, or as temporary transverse sections, can be used to create a reasonably accurate representation of the form of the completed hull, provided that the measurements that go into this representation, or "lines plan," are checked for accuracy against the completed hull. This method is of additional value because it can be used to derive key information about the form of boats which may have been built many years ago and are no longer extant. If a builder has retained construction moulds used in the past (by himself, or, perhaps, his father), and he can provide the measurement formulas that were used in setting up the boat, as well as other basic details, the form of the boat or boats built from the moulds can be drawn, even though the actual boat may have existed as nothing more than a memory for a long period of time.

I was successful in tracing the mould shapes used by five of my informants, all of which are included in this thesis in the form of tables of offsets. The tracing of the mould shapes was achieved in a relatively straightforward manner. With the assistance of my informants, I simply traced their mould shapes directly onto large sheets of cardboard that I had brought along for that purpose. To guard against any inaccuracies, I asked my informants to verify the precision of my tracings. (Measurements of these moulds are given in Appendix C.) In addition, to facilitate the interpretation of these tracings at a later time, I immediately recorded all pertinent data on the sheet of cardboard, including such information as: name of informant; date tracings made; source of moulds (Did the informant make them, or did he inherit them, or trace someone else's moulds?); measurement formulas used to position moulds and counter; length of boat or boats that moulds were used to construct (often a range of lengths were given: 14-18 feet, for example, for a set of rodney moulds.); the name of the boat type that the moulds were used to construct; keel dimensions; plank thickness; engine size; and, the purpose for which the vessel was constructed.

While I chose not to produce transverse hull sections by taking the many measurements required directly from the boats, (electing instead to use construction moulds as reasonably accurate substitutes), it was necessary for me to take several key measurements directly from the boats to permit the drafting of full lines plans. These measurements included: the LOA (length overall); rabbet location; stem head dimensions; and the stem and stern profiles.

I took the stem and stern profiles with the use of a steel square, a folding rule and a large right-angle square, home-made out of inch by inch spruce, which had its height marked off in three inch water line graduations. The wooden square was set up as shown in Fig. 1, and then measurements were taken from the inside face of the height (that is, the forward perpendicular, in the case of the stem, or the after perpendicular, in the case of the stern), at three inch intervals, using the steel square and the folding rule. (Fig 2)

Because not all of the builders whom I interviewed made patterns for the counters of their boats (preferring, instead, to mark out a counter by eye for each boat built), on a couple of occasions I had to take the measurements of counters directly from the boats. This I accomplished easily by pressing a piece of cardboard up against the counter (sometimes with the aid of a curious, young by-stander), and tracing the counter outline by placing a pencil on the underside of the cardboard (the side pressing against the counter) and drawing it along the plank ends.

Since I had discovered that it was not uncommon for builders to deviate, however slightly, at times, from the measurement formulas and scantlings that they reported to me, in addition to the measurements already mentioned, I found it advisable to check such features on the completed

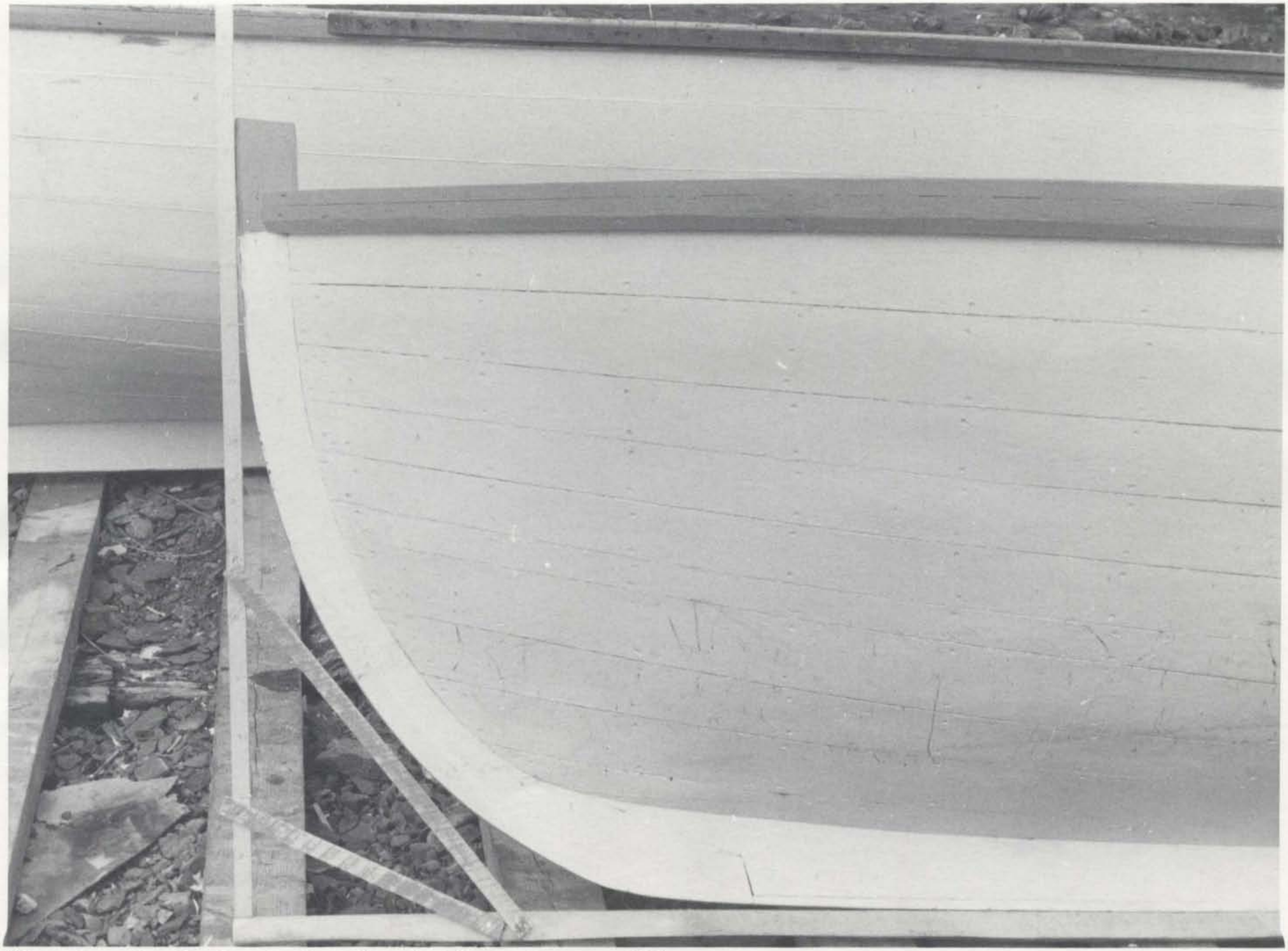

Fig. 1: A simple device for taking stem profile measurements.

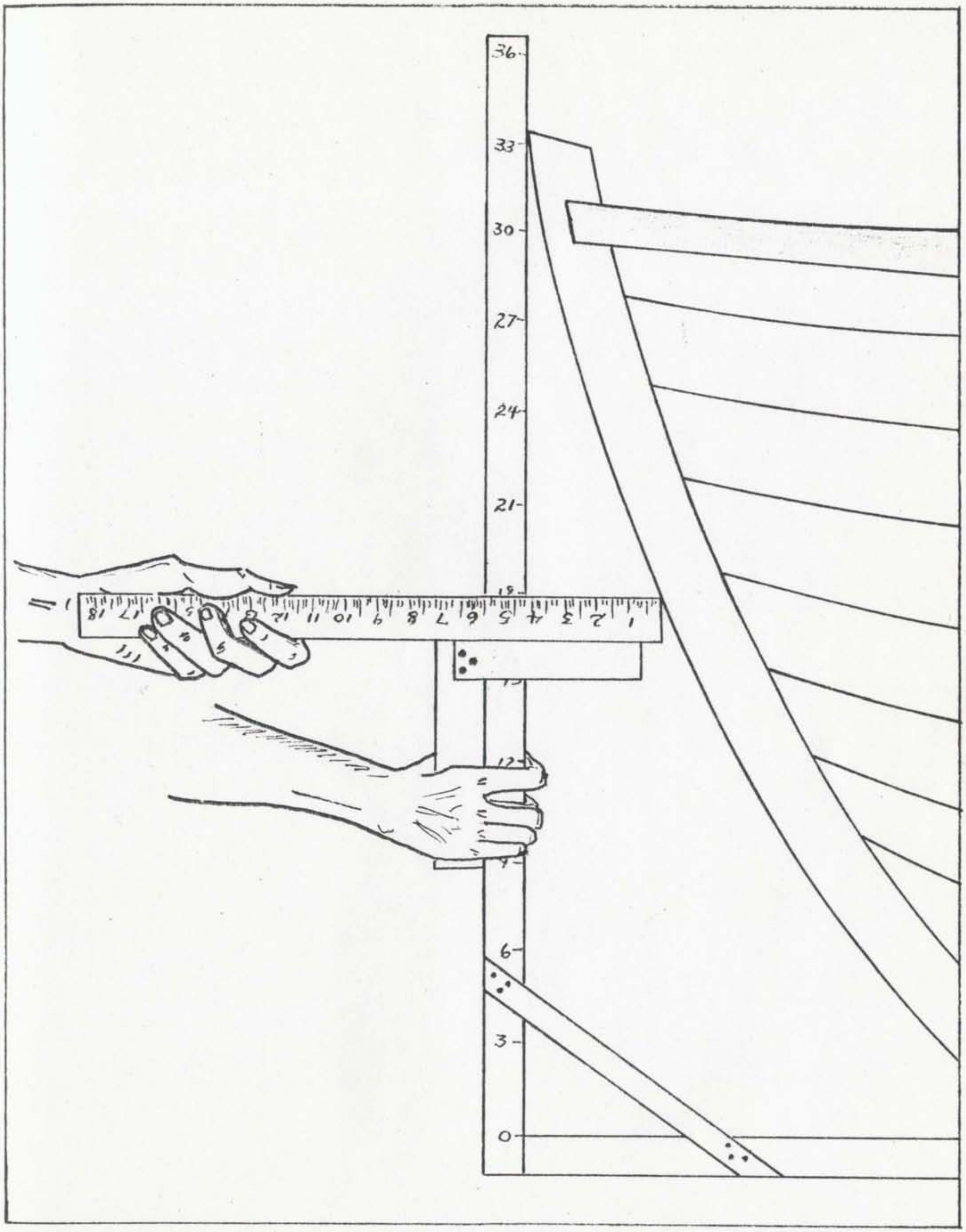

Fig. 2: Taking stem profile measurements.

		STEM	STA 1	STA 2	STA 3	STA 4	STA 5	TRANS.	
HGTS ABOVE BASE	SHEER	2·1·4	1·9·1	1·6·7	1·5·7-	1·6·6	1·9·2	2·2·2	SHEER
	BUT 18	* * *	* * *	0·7·7	0·4·6+	0·7·2	1·1·6	* * *	BUT 18
	BUT 12	* * *	0·11·5	0·3·7	0·3·0	0·4·3	0·9·4	1·8·7	BUT 12
	BUT 6	* * *	0·5·0	0·2·2-	0·1·7	0·2·2	0·5·2	1·4·0	BUT 6
	O.B. KEEL	0·2·2	0·2·1	0·1·7-	0·1·5	0·2·0	0·3·0	0·4·5	O.B. KEEL
HALF BREADTHS	SHEER	0·0·7	1·2·2	1·9·2	2·0·4	2·0·2	1·9·0	1·2·0	SHEER
	WL 15		1·1·2	1·9·0	2·0·3	2·0·0	1·7·1	0·4·4	WL 15
	WL 12		1·0·1	1·8·1	2·0·0	1·11·0	1·4·2	0·1·0	WL 12
	WL 9		0·10·2	1·7·0-	1·10·6	1·8·4	0·11·2	0·0·7	WL 9
	WL 6		0·7·2	1·4·1	1·8·0	1·3·2	0·7·0	0·0·6	WL 6
	WL 3		0·3·3	0·9·1	0·11·5	0·7·6+	0·3·2	0·0·5+	WL 3
	TUCK	* * *	* * *	* * *	0·11·5	0·10·2	0·7·3	0·1·0	TUCK
	O.B. KEEL	0·0·7	0·2·2	0·4·4	0·5·3	0·5·0	0·3·2	0·0·6	O.B. KEEL
OFFSETS IN FEET, INCHES AND EIGHTHS TO OUTSIDE OF PLANK									

Fig. 3: Table of offsets for 10' 7" wherry.

boat as: plank thickness; keel dimensions; sheer heights; and, height of the tuck.

When all of the measurements had been taken, I always concluded the field study of each boat by taking photographs, from a variety of angles, of the craft.[31]

The other method for taking the lines of small wooden boats, which I have used in Maine (U.S.A.) and Newfoundland (but not in Winterton), involves measurements taken from the hull of the craft under study and, as I have stated, is a more accurate but also more time-consuming procedure.[32] Essentially, all one does is take measurements, but some direction is needed in order to know what to measure and in what form these measurements should be recorded.

Following the system employed by naval architects, measurements should be entered into a standard table of offsets consisting of dimensions taken from the base and the centre line which are translated into heights and breadths of keel, rabbet, water lines, and buttock lines at each of the arbitrarily selected stations, or sections, of the boat. (Fig. 3)

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[31] I often sent copies of these photos to the builders of the boats as one way of thanking them for their assistance.

[32] An earlier version of the description of this method is contained in my article "Taking the Lines," Woodenboat, 19 (Nov.-Dec. 1977), 42-45.

Instead of attempting to prescribe a general method for taking the lines of small boats of all types, I will describe the procedure which I have used as it applies to one type. Whatever adjustments that may have to be made to take the lines of other types should become apparent.

Under the expert guidance of professional boat-builder Walter J. Simmons of Lincolnville, Maine, the first boat whose lines I recorded was a 10'7" Lincolnville wherry built during the winter of 1898-99 by "Stimp" Rhodes of Duck Trap, Lincolnville, Maine.[33] The boat is owned by Osborne Wade, Sr., also of Duck Trap, for whom the boat was built. The craft is a small version of the wherries that were used in the now defunct Penobscot Bay salmon fishery. The boat is lapstrake planked (clinker) with white cedar over sawn frames (timbers) of natural crook cedar. Her stem, stern post and transom are oak. Her quarter knees are of hackmatack. The plank laps are fastened with galvanized clench nails, the rails and knees are fastened with galvanized bolts, and the hood ends of the planks are fastened to the stem with iron screws. (Figs. 4, 5, 6)

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[33]For a more detailed discussion of the construction and use of this particular boat see W.J. Simmons, "Miniature Salmon Wherry Would Serve Well as a Tender," National Fisherman, 59, No. 2 (July 1978), 60-61.

Fig. 4: Profile of 10' 7" wherry built by "Stimp" Rhodes of Duck Trap, Lincolnville, Maine during the winter of 1898-9.

Fig. 5: Rhodes wherry viewed from the stern quarter.

Fig. 6: Inboard view of Rhodes wherry.

According to Simmons, who has done much to revive interest in the Lincolnville wherry in recent years,[34] the boat meets the basic criteria for the wherry type: a lapstrake boat, double-ended on the waterline and built on the traditional wherry plank keel.

After clearing a suitable working space in a work shop, my first action was to turn the boat over and lay it on top of a pair of saw horses. This raised the boat to a good working height. Next, I placed a 12' long 5/4" x 4" board (selected for its rigidity) on the keel and positioned it so that one edge ran straight down the middle for the full length of the boat. I also centred this board so that it extended beyond both stem and stern by about the same margin and then proceeded to secure it firmly in place by means of braces nailed to the shop ceiling.[35] This long board served as the chief reference point, or "storypole," for all outboard measurements.

To establish a precise line from which to take measurements, a carpenter's chalkline was used to strike a baseline along the length of the storypole. (Fig. 7) A midpoint, or midship station (corresponding as closely

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[34]See Walter J. Simmons, "The Lincolnville Wherry," Woodenboat, 2 (Nov.-Dec. 1974), 44-47.

[35]It could just as easily have been secured to the floor or, if I had been working outside, staked to the ground.

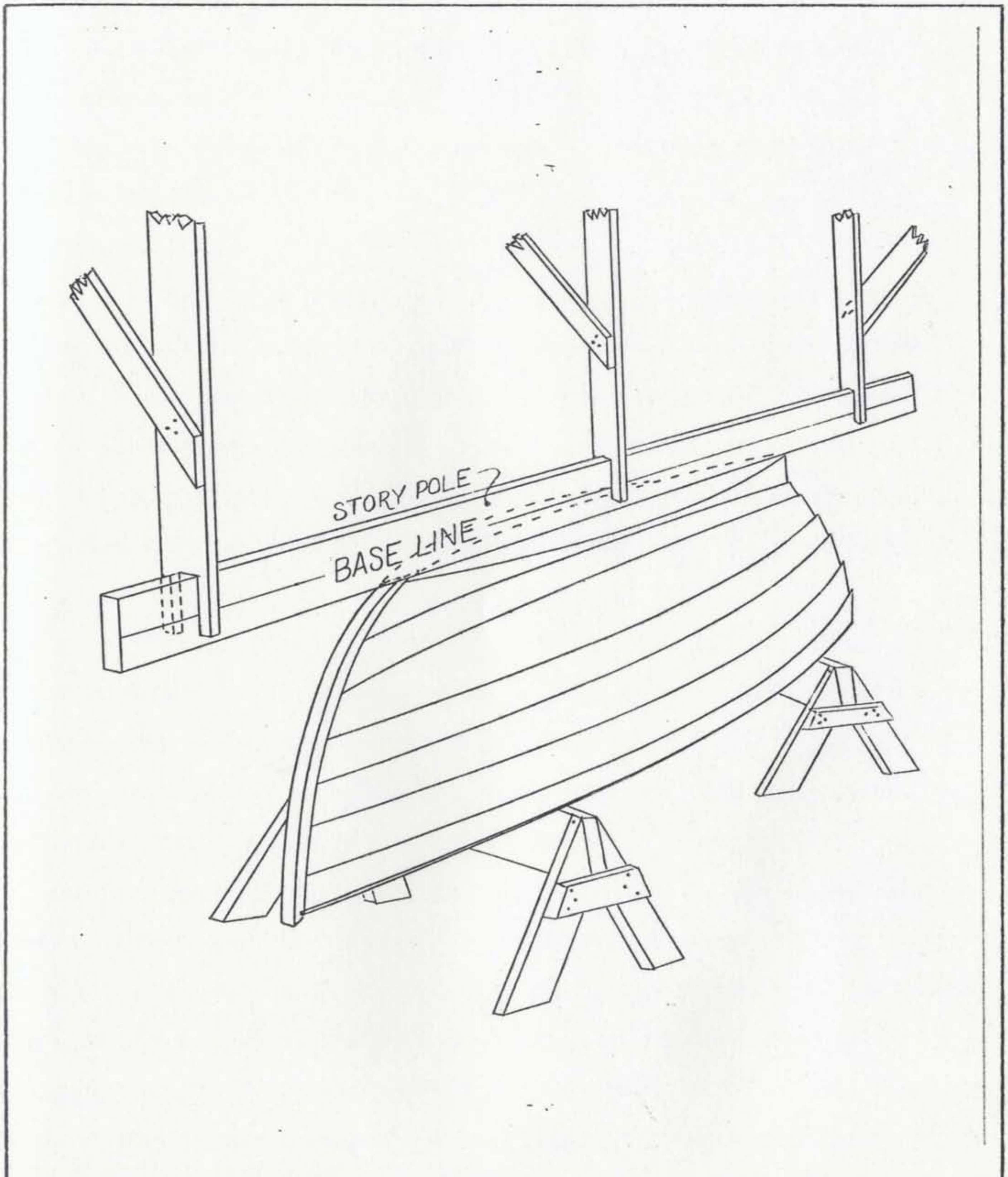

Fig. 7: "Storypole" set up on inverted hull.

as possible to the portion of the hull with the greatest beam) was marked on the baseline, along with a forward perpendicular (F.P.) and an after perpendicular (A.P.). The forward perpendicular and the after perpendicular represented vertical brackets for the overall length of the hull.

The next step was to locate the stations, or cross-sections, and plot them along the baseline. There are no hard and fast rules about the number of stations or the distances between them, but in Maine small boats have traditionally been built with moulds placed at five stations on the keel. Therefore, I decided to use five stations in my measurement taking.

Locating the third, or midship, station was fairly direct. I placed it as close as possible to the section of the hull with the greatest width. Locating the first and fifth stations (the forward-most and after-most stations) required some judgement, however. Since it is common boatbuilding practise to place the forward and after moulds sufficiently toward the center of a boat so that they are not encumbered by large structural members such as stem and stern knees, with the Rhodes wherry I placed the fifth station 23 1/2" forward of the A.P. and placed the first station 23 3/8" aft of the F.P. Once these positions had been established, it was an easy matter to locate stations two and four. They were placed, respectively, halfway between one and three, and three and five. In this way, all five stations were evenly spaced; 20" apart.[36]

Having located the stations and marked their positions on the baseline, I proceeded to take the half-breadth of the hull at each station. To accomplish this, I began by nailing pieces of 1/2" x 3" scrap wood together into shapes that roughly approximated the contour of the hull at each station, from the middle of the keel to the top of the rail (sheer). For want of a better term, I called these pieces of wood "form battens."

At each station the procedure was the same. Placing the form batten so that it passed 2-3" above the hull from the keel to the rail, it was nailed to the storypole with one edge along the station line (drawn perpendicular to the hull centreline). At this time I also made sure that the point where the baseline touched the batten was marked. The end of the form batten that passed by the rail was clamped to the rail for added support.

After checking the alignment of the form batten with a 2' steel square, I began to take the outboard shape

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[36]Equal spacing of stations is advisable because it simplifies subsequent activities such as lofting and building.

of the hull with the use of thin wooden pointers, called "cross battens," which I tacked to the form batten. (Fig. 8) In order to eliminate the necessity of dealing with more than one plank thickness, the cross battens were set down on the hull at the junction of the keel and the garboard, at the underside of each lap, and at the top of the sheer. This was slow work, as care had to be taken not to dislodge cross battens already in place. Once all of the key positions along the station had been "pointed" in this way, I made sure all cross battens were firmly attached and then, very carefully, removed the form batten from the storypole.

In order to draw the shape of the hull at the stations (and thus obtain a cross-sectional view of the boat), one at a time, I placed the form battens on a piece of plywood upon which a new baseline and centreline (perpendicular to the baseline) had been drawn. (Fig. 9) Aligning the end of the form batten flush with the centreline (just as it had been with the storypole), and having made sure that the mark on the baseline which indicated where it touched the baseline of the storypole was placed at the intersection of the new baseline and centreline, the positions described by the cross battens were marked on the plywood with a pencil.[37] Next, the points were connected

[37]The curved line formed by connecting the points will actually start from the outboard edge of the keel; indicating both a height above base and a half-breadth.

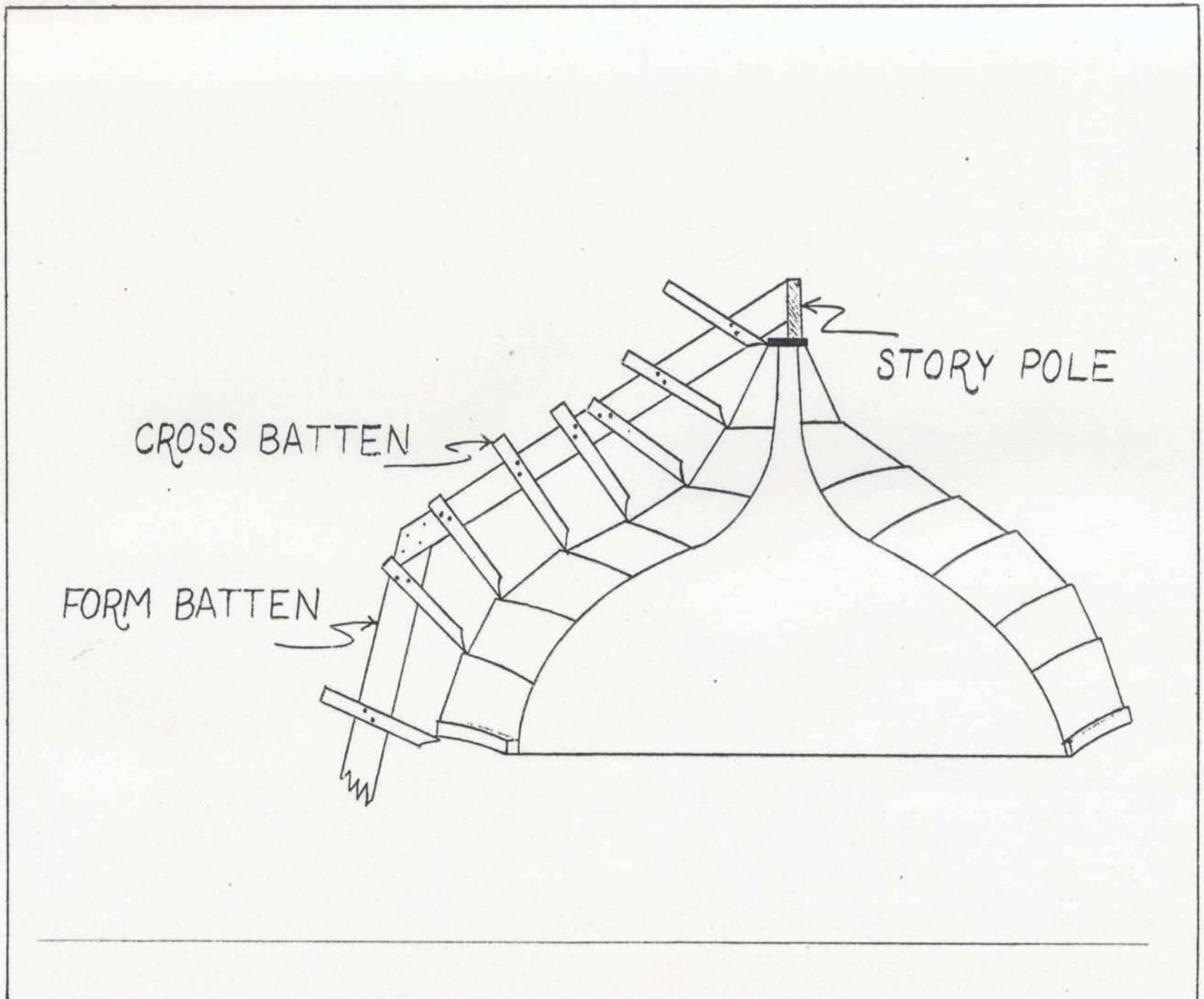

Fig. 8: Cross battens indicate hull contours.

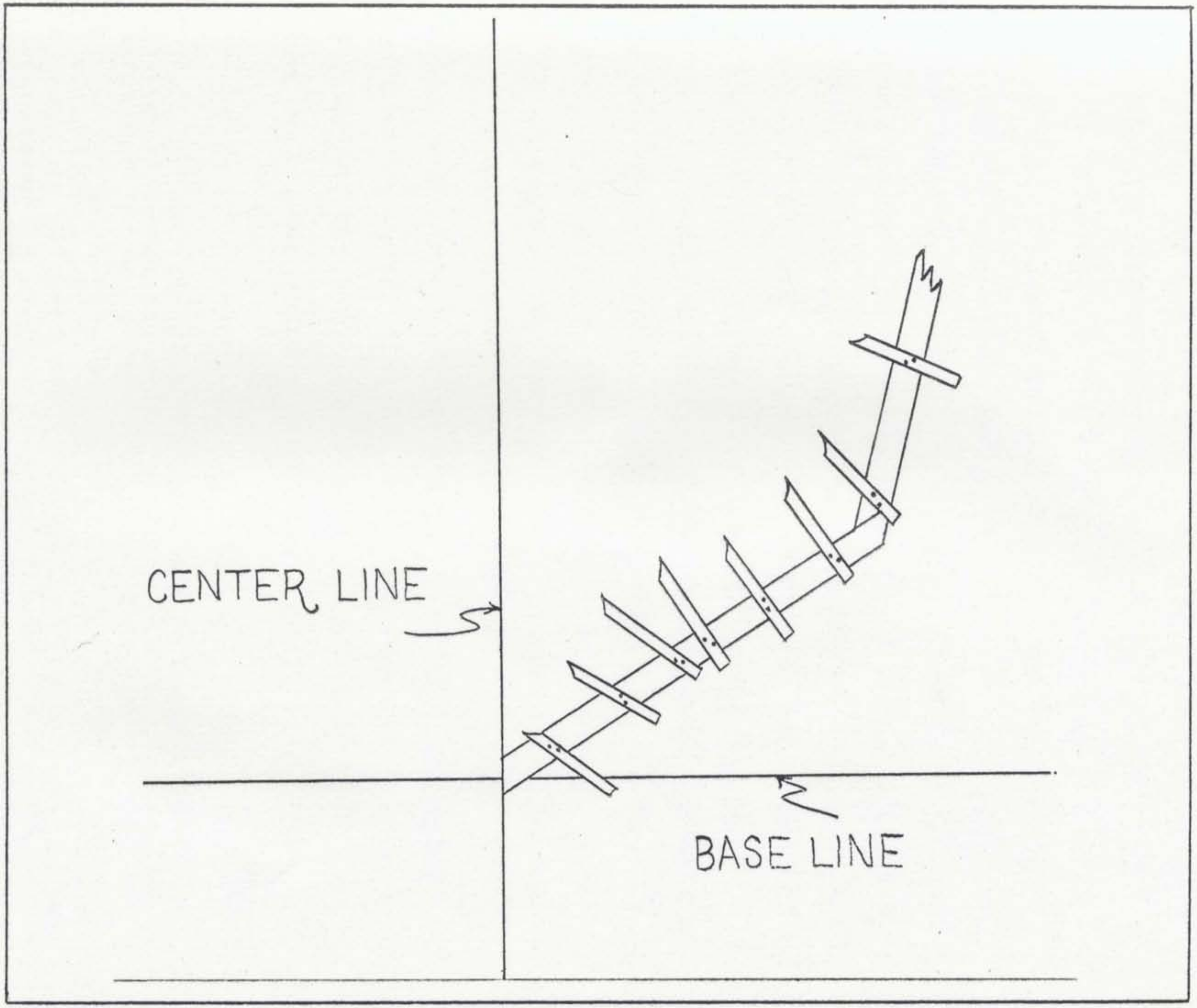

Fig. 9: Form batten positioned on plywood in preparation for marking half-breadth.

by a smooth, curved line (i.e. they were "faired in") drawn with the aid of a thin, hardwood batten.[38]

After all hull-cross sections had been put down in this way, I took waterline measurements (horizontal measurements taken from the baseline at 3" intervals), buttock line measurements (vertical measurements taken from the baseline to the top of the rail at each station), and sheer heights (distances from the baseline to the top of the rail at each station) directly from the sheet of plywood and entered them into the table of offsets.

I then moved on to take the measurements of the stem and stern profiles. Both were taken in the same manner. I tacked two thin, straight-edged pieces of wood to the storypole, one forward with its inside edge along the F.P., and one aft, with its inside edge along the A.P. Marking each piece with regular 3" waterline intervals from base to sheer, I simply measured the distance between the stem and the F.P. and the stern and the A.P. at each waterline.

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[38]When fairing off, one must be aware that the hull may have changed shape over the years. Unless one is experienced at taking the lines of boats, it is best to avoid bringing lines into fair until it is time to loft the waterlines. If it is the fieldworker's goal to record the shape of the hull as it exists *in situ*, he should mark his measurements as "uncorrected." Later, corrections can be made in an effort to produce a faired representation of the craft as it may have appeared when first launched.

After this, there were many more measurements still to be made, however, since they were direct measurements (which do not require explanation), the following list of details measured should suffice: distance from storypole baseline to the keel at all stations and at the ends of the keel (entered as "heights above base" in the table of offsets); width of the keel at all stations and at the ends of the keel (entered as keel "half-breadths"); length of keel; distance from storypole baseline to the top of the stem; distance from the storypole baseline to the bottom of the stem; distance from the storypole baseline to the top of the transom, measuring along the outboard transom face; distance from the bottom of the stem to the F.P.; distance from the bottom of the transom to the A.P.; width of the transom (inside and outside of the plank); and, height of transom crown. In addition to these measurements, as a doublecheck, the sheer heights at the stem, transom and all five stations were measured with the use of a level held on the storypole baseline. Also, the shape of the transom was recorded by tracing its outline on a piece of cardboard.

Because I was interested in preserving not only the hull shape, but also the boat's construction details, after I completed all of the necessary measurements, checked them for accuracy and entered them in my notebook, I took down the storypole and returned the boat to its right-side-up position and recorded such details as: frame dimensions and locations; thwart dimensions and locations; thwart rail dimensions and locations; breathook dimensions; quarterknee dimensions; locations of rowing stations; keel width dimensions (at all five stations); and, stem head dimensions. I also recorded other important construction details such as fastenings used, lumber used, and lap width. (see Fig. 10)

After all of the many measurements and observations had been checked for accuracy and recorded, I was finally satisfied that I had collected the basic information that would yield an accurate picture of the contours and structural features of the boat. However, in order to make one final and important check on the precision of my measurements and to fair all of the lines, I decided to make a full-scale drawing, or "lofting," of the boat.[39] (see Fig. 11) Although lofting is a drafting process that is generally used by boatbuilders to produce full-size drawings prior to construction, I found it to be a very useful exercise because it exposed errors that were contained in my measurements and

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[39] For an extremely detailed explanation of the lofting procedure, see Howard I. Chapelle, Boatbuilding: A Complete Handbook of Wooden Boat Construction (New York: W.W. Norton, 1951), pp. 72-141. For a more concise explanation, see Sam Manning, "Some Thoughts on Lofting," Woodenboat, 11 (July-Aug. 1976), 43-47; and Sam Manning, "Lofting the Lubec Boat," Woodenboat, 12 (Sept.-Oct. 1976), 44-53.

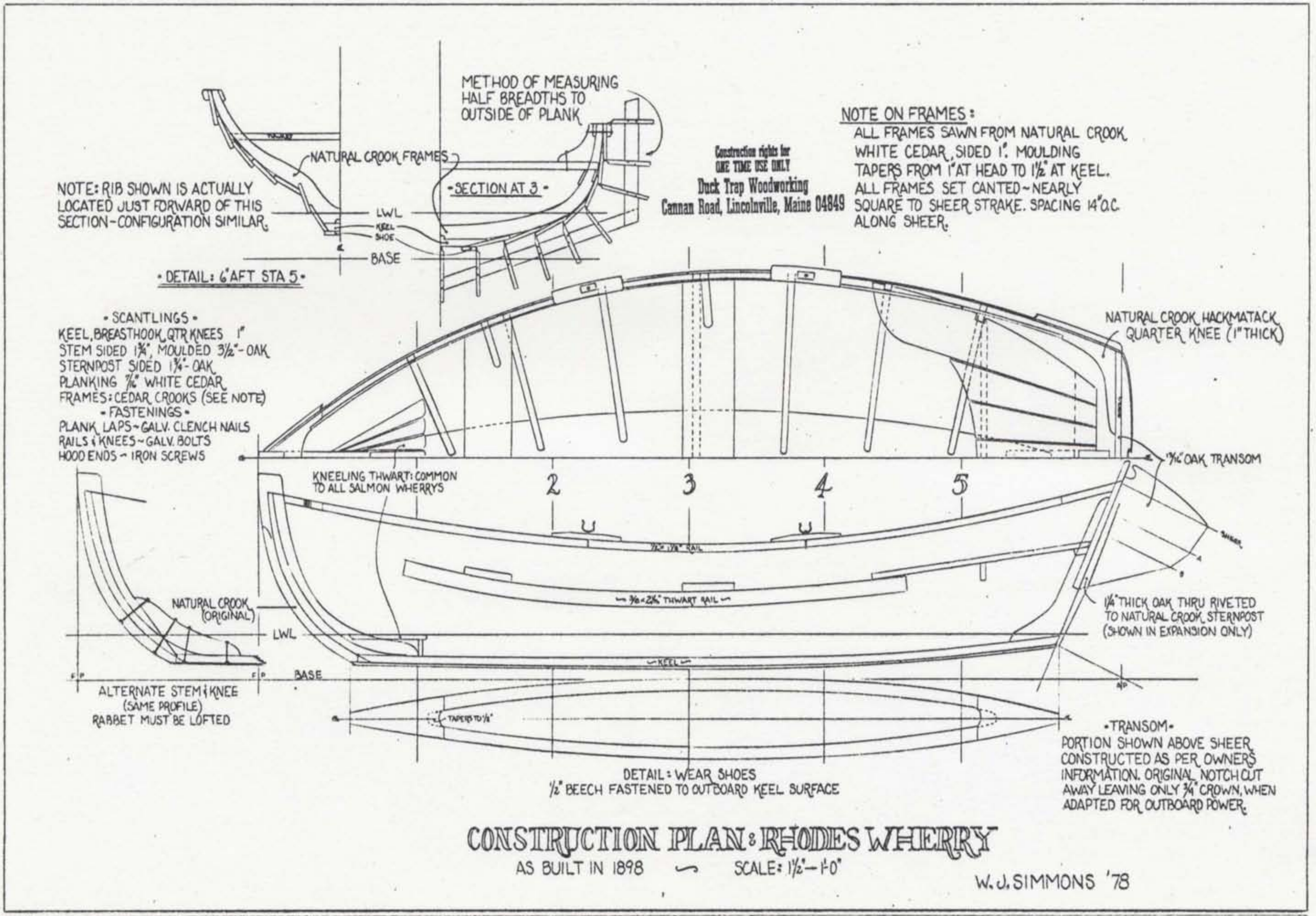


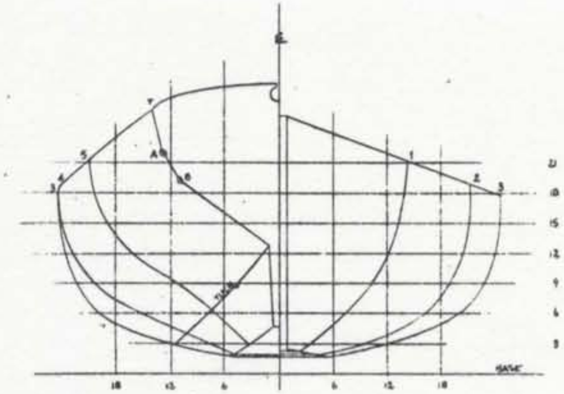
Fig. 10: Construction plan of Rhodes wherry. (Drawing by Walter J. Simmons)

allowed me to correct them. In addition, the lofting process allowed me to gain an intimate knowledge of the form of the boat under study.

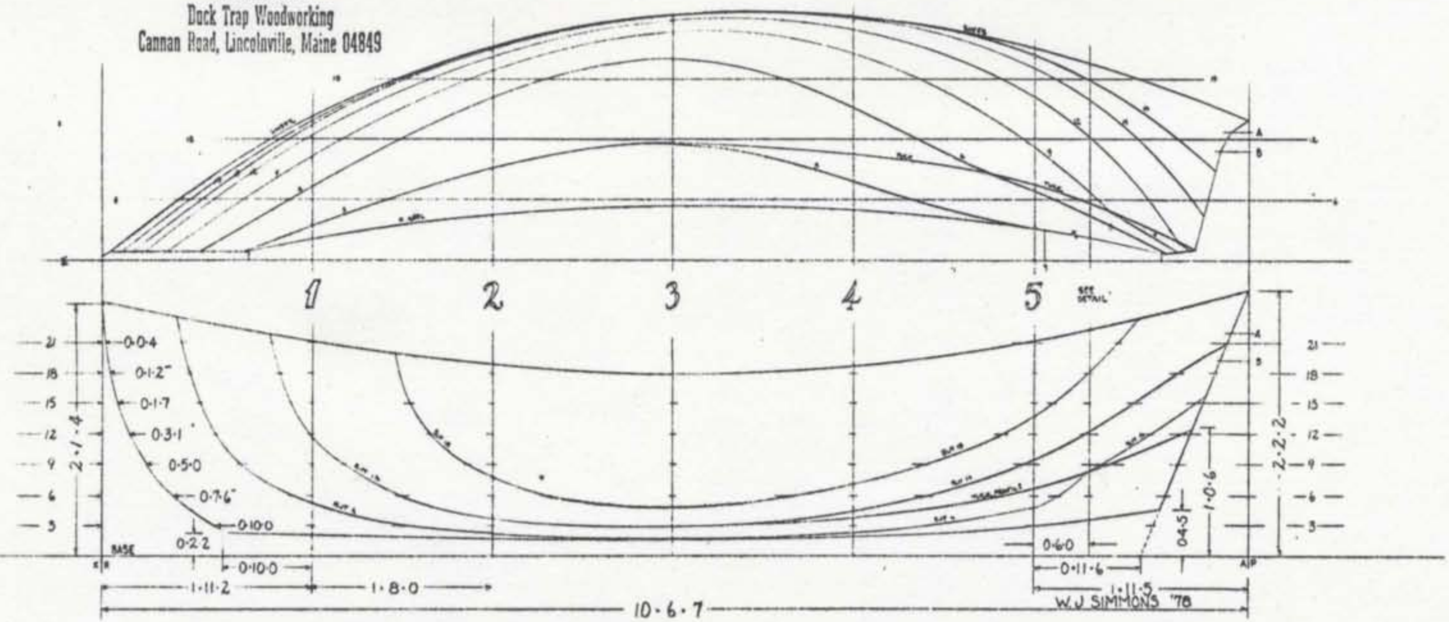
• TABLE OF OFFSETS •

		STEM	STA 1	STA 2	STA 3	STA 4	STA 5	TRANS.	
HTS. ABOVE BASE	SHEER	2·1·4	1·9·1	1·6·7	1·5·7−	1·6·6	1·9·2	2·2·2	SHEER
	BUT 18	• • •	• • •	0·7·7	0·4·6+	0·7·2	1·1·6	• • •	BUT 18
	BUT 12	• • •	0·11·5	0·3·7	0·3·0	0·4·3	0·9·4	1·8·7	BUT 12
	BUT 6	• • •	0·5·0	0·2·2−	0·1·7	0·2·2	0·5·2	1·4·0	BUT 6
	O.B. KEEL	0·2·2	0·2·1	0·1·7−	0·1·5	0·2·0−	0·3·0−	0·4·5	O.B. KEEL
HALF BREADTHS	SHEER	0·0·7	1·2·2	1·9·2	2·0·4	2·0·2	1·9·0	1·2·0	SHEER
	WL 15		1·1·2	1·9·0	2·0·3	2·0·0	1·7·1	0·4·4	WL 15
	WL 12		1·0·1	1·8·1	2·0·0−	1·11·0	1·4·2	0·1·0	WL 12
	WL 9		0·10·2	1·7·0−	1·10·6	1·8·4	0·11·2	0·0·7	WL 9
	WL 6		0·7·2	1·4·1	1·8·0	1·3·2	0·7·0	0·0·6−	WL 6
	WL 3		0·3·3	0·9·1	0·11·5	0·7·6+	0·3·2	0·0·5+	WL 3
	TUCK	• • •	• • •	• • •	0·11·5	0·10·2	0·7·3	0·1·0	TUCK
	O.B. KEEL	0·0·7	0·2·2	0·4·4	0·5·3	0·5·0	0·3·2	0·0·6	O.B. KEEL

OFFSETS IN FEET, INCHES, AND EIGHTHS TO OUTSIDE OF PLANKING.



NOTE:
DEFLECTION OF WATERLINES IN PLAN VIEW AND BUTTOCK LINES IN PROFILE DUE TO PRESENCE OF STRAIGHT TUCK FROM STA 3 TO TRANSOM. TUCK IS SHOWN IN ALL THREE VIEWS AND CONST. PLAN DETAIL.



STIMPSON RHODES MODEL: LINCOLNVILLE WHERRY

BUILT AT DUCK TRAP (LINCOLNVILLE), MAINE — WINTER OF 1898-1899
LOA 10'-7" SCALE: 1½"–1'-0"

Fig. 11: Lines and Offsets of Rhodes wherry. (Drawing by Walter J. Simmons)

III

THE SETTING

PART 1: Physical Setting

The community of Winterton (population 796)[40] is situated on the southern shore of Trinity Bay, on the Avalon Peninsula of Newfoundland. The nearest communities of appreciable size are Hant's Harbour, 4 1/2 miles to the north, and New Perlican, 3 1/2 miles to the south. Winterton is about ninety miles (by highway) from the provincial capital of St. John's. The Trinity Bay Highway (Highway 80) provides the community with access to the other communities in the area, and serves as a direct route to the Trans-Canada Highway. (Fig. 12)

Winterton is located in a basin-shaped hollow which is bounded by rolling hills (250-450 feet in elevation) on three sides, and Trinity Bay on the fourth. Most of the developed area of the town is located at the east side of Winterton Cove, a body of water, approximately 1/2 mile long and 1/4 mile wide, which opens into Trinity Bay. The harbour itself is small, fairly shallow (2-5 fathoms), and

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[40] Newfoundland, Department of Municipal Affairs and Housing, Municipal Directory (St. John's: Department of Municipal Affiars and Housing, 1980), p. 151.

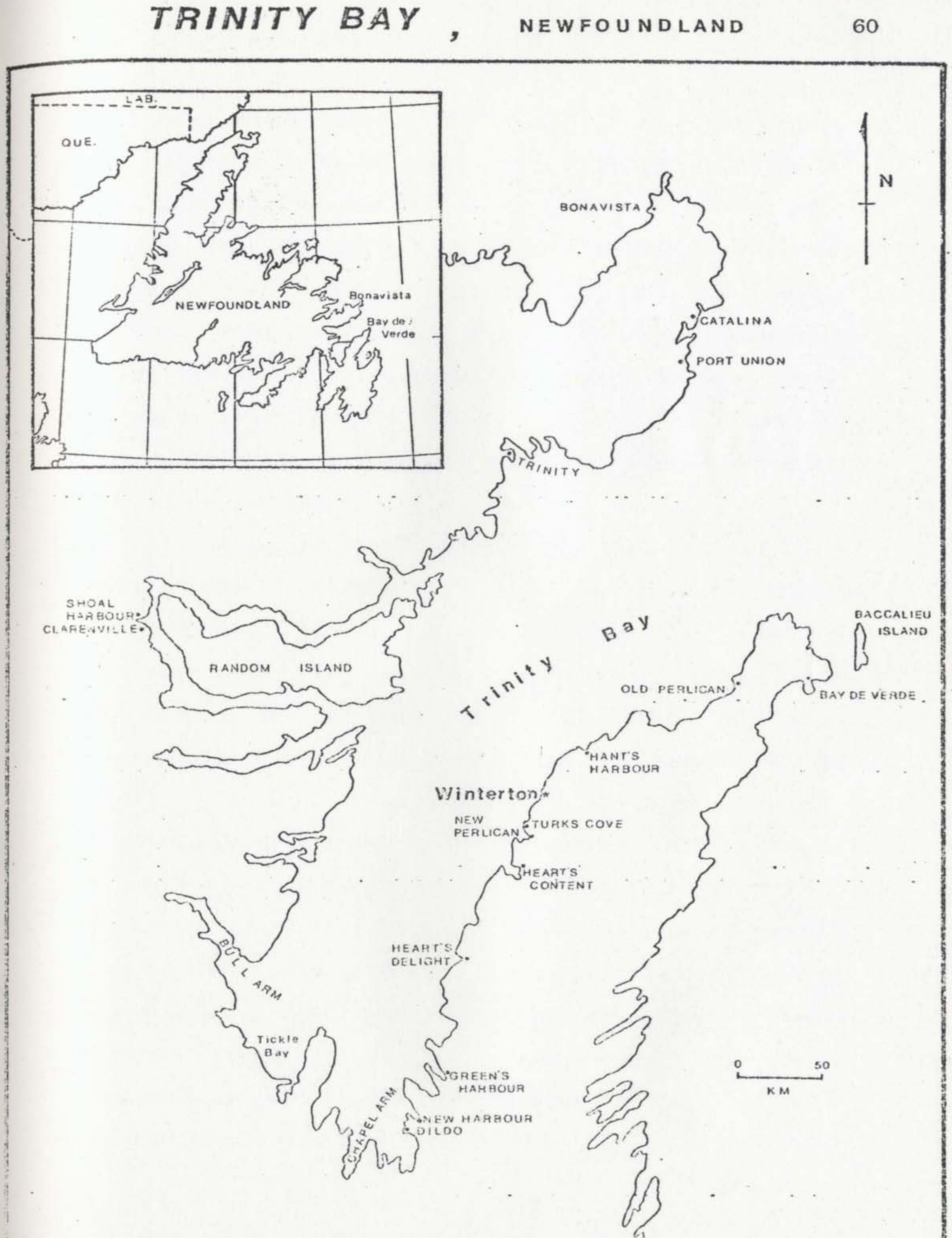

Fig. 12: Trinity Bay, Newfoundland. (Map by Michael MacIntyre)

does not provide boats with very much protection from high winds, especially those out of the north and northwest. The exposed harbour is also vulnerable to drift ice and even icebergs, which find their way into the Bay in the late spring. The fact that the harbour is not well-sheltered is borne out by the fact that, during the winter months and other periods of rough weather, large, Winterton-owned vessels, which cannot be easily hauled out of the water, are taken to nearby harbours which afford greater protection.

A number of structures are located along the shore of the harbour, all relating, in one way or another, to the local fisheries. On the east side sits a 261 foot-long Government-built wharf which is used by fishermen for boat dockage and the storage of fishing gear. To the north of this wharf lies a fish plant owned and operated by E.J. Green and Company. At three spots around the harbour wooden launchways are positioned. These simple structures are useful because they allow fishermen to launch and recover small boats without having to subject them to the wear and tear of being hauled over the rough cobble beach. Scattered around the harbour are a handful of small, wooden one-room buildings (some with wharves attached) called "stores," which some of the fishermen use for gear storage. (Fig. 13)

WINTERTON, NEWFOUNDLAND

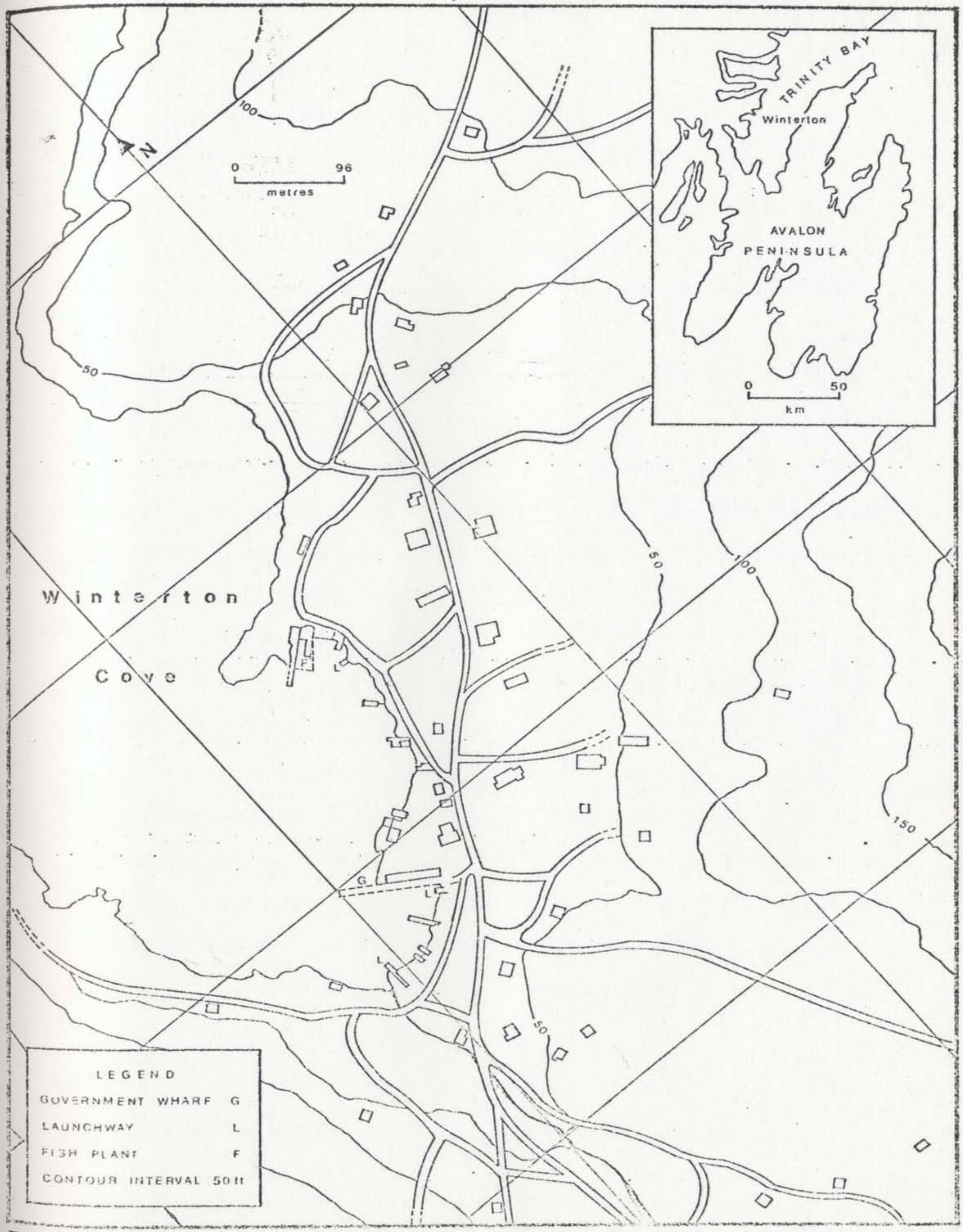

Fig. 13: The Community of Winterton. (Map by Michael MacIntyre)

Typcial of the housing patterns of Newfoundland outports, the majority of the community's some 250 dwellings are huddled together very close to the harbour. Arranged in a rather helter-skelter fashion around a series of narrow, twisting roads and paths, most of the homes are one and two-story wooden houses of frame construction, which are surrounded by outbuildings and small garden plots. Other structures in the community include: 14 retail outlets (e.g. a hardware store, a general store, an appliance store, a grocery store, a restaurant, and, several confectioneries); three churches (United, Anglican, Salvation Army); a post office; an elementary school; a fire station; a library; the Environment Canada Fishery Office; a lumber mill/boatbuilding enterprise (Reid Brothers' Mill); the Society of United Fishermen Hall; and the Orange Hall.[41]

The land in the community is extremely rough and irregular, with many boulders and ledges in evidence. Fertile soil is scarce, severely limiting the productivity of garden plots and grazing lands. As a result of the over-cutting of trees, erosion and forest fires, which have occurred over the years, treeless barrens now occupy

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[41]Newfoundland, Department of Municipal Affairs and Housing, Winterton Concept Municipal Plan (St. John's: Department of Municipal Affairs and Housing, 1975), p. 3.

portions of the community which were once forested. A number of small ponds are located around the periphery of the village, two of which feed a brook which winds its way through the community and empties into the harbour.

Stands of conifers, mostly white spruce (*Picea glauca*) and balsam fir (*Abies balsamea* L.), surround the village, but, due to a forest fire which devastated the inland sections of the region in 1961, most of the trees tend to be rather small. Many species of hardwood scrubs are found in the area, as well as an assortment of small, woody plants which produce edible berries, such as the blueberry (*Vaccinium cespitosum*) and the Partridge berry (*Vaccinium vitis-idaea*).

Winterton's climate is typical of that of the Avalon Peninsula. In general, winters are cold, but not terribly harsh, and summers are cool to warm, but seldom hot. The mean January temperature is usually in the neighbourhood of 20°F (-6.7°C), and the mean July temperature usually hovers around 60°F (16°C). Annual precipitation is approximately 55 inches (1,397 millimeters), with snowfall accounting for about one-fifth of the total.[42]

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[42] F. Kenneth Hare, "The Climate of the Island of Newfoundland," *Geographical Bulletin*, 2 (1952), 36-88.

PART 2: Historical Background

The community of Winterton, formerly known as Scilly Cove (probably after the Scilly Islands off the southwest coast of England), has a long history; one which goes back at least to the middle of the seventeenth century. The three-hundred year history of the community is a fascinating one, indeed, but, in order to place it in proper perspective, one must examine not only the events which occurred within the boundaries of the community, but also the social and economic trends which took place throughout the rest of Newfoundland, as well as certain significant events which took place in Europe.

European Interest in Newfoundland

The *raison d'etre* of Newfoundland was its fisheries, and all historical descriptions of the island must begin by making this point. In 1497, John Cabot visited Newfoundland and observed a remarkable abundance of fish inhabiting its coastal waters. Partly due to Cabot's glowing reports of the vast quantity of fish there, fishing vessels from France, Spain, Portugal and England regularly sailed for Newfoundland to take fish, notably cod (*Gadus morhua*), during the summer months. By the early 1600's, however, France and England emerged as the most active participants in, and greatest rivals for, the Newfoundland fishery. As we shall see, attempts by these two nations to control the fishery would have tremendous repercussions in Newfoundland, as well as in Europe.

From the inception of European interest in Newfoundland, it was primarily the fishery which attracted men to the island. Fishermen sailed from Europe in the late spring, fished in Newfoundland waters throughout the summer, and returned to their homelands in the fall with their catches. Permanent residence on the island was not required of those who participated in this migratory fishery. Therefore, the island and its terrestrial resources were not important factors, and, except for the use of shoreland for the drying of fish, land use was minimal. Other considerations discouraged settlement. The island was wild and uninhabited, and offered little fertile soil. Also, there were few, if any, profitable winter-time activities. Furthermore, it was the official policy of the English government to prohibit settlement, except in the case of individuals involved in maintenance of the fishery.[43] Of course, despite these impediments, settlement did take place.

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[43]The rationale behind this prohibition was that without colonization the profits from Newfoundland's fishery would go directly to the mother country. In addition, the Newfoundland fishery was seen as a training ground for the sailors who would be used to maintain England's naval might.

Early Settlements

By 1670, the English and the French had both established settlements in Newfoundland. The French settlements were located at Placentia Bay and St. Mary's Bay, while the English settlements were located along the southern and eastern shores of the Avalon Peninsula, from present-day Trepassey to Greenspond.

The first Englishmen to live on the island year-round, albeit temporarily, were probably fishermen who stayed behind at the end of the fishing season so that they would be able to claim prime fishing berths and shore-front fishing premises for their fishing companies at the start of the next season. From these beginnings, men gained familiarity with the island and began to look more favourably upon taking up residence as "planters."

The majority of the English settlers who were known as "planters" were men who were veterans of the migratory fishery. Most of them came from the counties of Dorset, Devon, Hampshire, and Somerset, in the "Westcountry" of England; counties which have long associations with fishing and seafaring. Although they were called planters, this label was something of a misnomer. Due to the scarcity of fertile soil, these early landowners could not grow enough food upon which to live. As a result, they were forced to depend on the inshore fishery for their survival.

They tended small gardens, kept a few animals, and pursued a number of subsistence activities (e.g. hunting, wood cutting, berry picking), but they depended upon the profits of the fishery to purchase vital foodstuffs.

Planters were not the only year-round residents of English Newfoundland during the initial years of settlement, there were two other classes of inhabitants: servants and merchants. The planters occupied the status of the middle class. They hired servants, whom they recruited in England or Ireland, to work on their fishing plantations for terms of one to two years. The upper class was occupied by the powerful Westcountry merchants. They controlled the migratory fishery and the inshore fishery. The merchants hired servants and sold foodstuffs and other supplies to the planters in exchange for their fish. The fortunes of all three classes -- servants, planters and merchants -- were all dependent upon the fishery, and their fortunes rose and fell in direct relationship to the conditions of the fishery.

The merchants were, unquestionably, the most influential inhabitants. This is evidenced by the fact that they were capable of dividing up the coastal territory of eastern Newfoundland into veritable economic fiefdoms. For example, the fisheries of the "Southern Shore" were controlled by merchants from South Devon, while the fisheries of Bonavista and Trinity Bays were controlled by merchants from Poole. In the absence of any one true commercial centre for all of English Newfoundland, the port (or ports) within each district which the merchant chose as his base of operations functioned as the trading, shipping, religious, and communications center of the region; independent of all other ports.[44]

The merchants' division of territory into economic enclaves led to the establishment of distinct cultural zones. When a Westcountryman came to Newfoundland to settle, he invariably came aboard a merchant-owned vessel which was bound for that merchant's headquarters port. Accordingly, settlers from Dorset, Hampshire and Somerset came first to Bonavista or Trinity Bays aboard Poole vessels, while settlers from South Devon arrived at the Southern Shore aboard vessels from South Devon. As a result of this practice, the cultural composition of the territorial divisions became extremely homogeneous.[45]

Gradually, as planters ventured forth from the merchant ports in search of untapped fishing areas, new

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[44] St. John's would not assume the role of the true capitol of Newfoundland until the nineteenth century.

[45] For detailed discussions of some of the cultural divisions in Newfoundland, see John J. Mannion, Irish Settlements in Eastern Canada: Cultural Transfer and Adaptation (Toronto: University of Toronto Press, 1974), and John J. Mannion, ed., The Peopling of Newfoundland: Essays in Historical Geography (St. John's: Institute of Social and Economic Research, 1977).

settlements came to be founded. These small settlements served as satellites to the merchant ports, with which they maintained strong social, economic and religious ties. Unable to grow all the produce required for their sustenance, the planters depended upon the merchant ports for provisions, as well as all other essential supplies. These goods were paid for with the fish which the planters caught and cured during the summer. Inhabitants of small settlements also depended upon merchant ports for religious services and for contact with England.

One such seventeenth century satellite settlement was Scilly Cove, located on the southern shore of Trinity Bay, some 30 miles southwest of the merchant port of Trinity. Other, similar, settlements around Trinity Bay were Bonaventure, Salmon Cove and English Harbour, all in close proximity to Trinity, and Old Perlican, New Perlican, Heart's Content and New Harbour, on the opposite side of the Bay. Sir John Berry's list of Newfoundland planters and their concerns for 1675 contains figures for "Silly Cove" which indicate that three planters were then in residence -- John Peters, James Weeksell and Richard Hopkins -- who employed a total of 40 servants.[46] Berry

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[46]Sir John Berry, "A List of the plantors names w[it]h an acco[un]t of their Concerns from Cape de Raze to Cape Bonavista, viz. 1675/[Sir John Berry]," photo-copied

also notes that the three planters owned 8 boats and 3 fishing stages. (Fig. 14) (Although Berry's census of Scilly Cove is believed to be the first recorded, settlement had probably taken place well before 1675.) A similar census taken the following year reveals that the same three planters were still in residence, but that their number of servants had grown to 81, and their number of boats had increased to 16.[47] The fortunes of one of the planters, Richard Hopkins, seem to have improved considerably. From a total of 9 servants and 2 boats in 1675, his 1676 totals had risen dramatically to 60 servants and 12 boats. (Fig. 15)

French-English Conflict

As mentioned earlier, European events had a profound impact on the course of Newfoundland's history. In 1689, King William's War broke out between the French and the English, and this led to armed conflict over the control of Newfoundland and its rich fishery. In a series of raids which began in late 1695, the French travelled overland from Placentia and made a number of surprise attacks

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MS at Centre for Newfoundland Studies, Memorial University of Newfoundland.

[47]"The names of the English inhabitants with the number of their boats, men, wives & children, from Bonavista to Trepasse, 1676," photo-copied MS at Centre for Newfoundland Studies, Memorial University of Newfoundland.

planter	male children	female children	men (servants)	boats
John Peters	3	3	21	4
James Weeksell	0	0	10	2
Richard Hopkins	0	0	9	2

Fig. 14: Planters and Their Concerns in Scilly Cove in 1675*

*Source: Sir John Berry, "A List of the plantors names w[it]h an acco[un]t of their Concerns from Cape de Raze to Cape Bonavista, viz. 1675/[Sir John Berry]," photocopied MS at Centre for Newfoundland Studies, Memorial University of Newfoundland.

planter	boats	servants	wives & children
John Peter[s]	3	16	0
James Wicksel	1	5	0
Richard Hopkins	12	60	a wife and 1 child

Fig. 15: Planters and Their Concerns in Scilly Cove in 1676*

*Source: "The names of the English inhabitants with the number of their boats, men, wives & children, from Bonavista to Trepasse, 1676," photo-copied MS at Centre for Newfoundland Studies, Memorial University of Newfoundland.

against English settlements. With the exception of two well-defended places (Bonavista and Carbonear Island), by March of 1696, the French had succeeded in taking all of the English settlements, capturing large numbers of prisoners in the process. Scilly Cove was one of the many settlements which fell prey, as a member of the French raiding party led by d'Iberville recorded in his journal:

> On the 3rd [of January, 1696] we took Bay Ver [Bay de Verde], where there were some fourteen houses and about ninety men. From there we went to Old Perlican; there were there nineteen houses, several stores, more than thirty head of horned cattle, and a number of sheep and pigs. On the 7th we went to Ance Havre [Hant's Harbour]. There were four houses, but the people had all fled. On the morning of the 8th we started for Celicove [Scilly Cove], where there were four houses and a great quantity of fish and cattle. Thence we came to New Perlican; there were there nine houses and stores. We left immediately for Harbor Content [Heart's Content], where there was a sort of fort or barricade, made of boards, with portholes above and below. This temporary fortress was commanded by an Irishman. They surrendered on being summoned. There were thirty men, besides women and children . . . .[48]

Despite their apparent ease in taking English settlements, the French did not have enough men or supplies to occupy them. Therefore, when an English expedition landed in 1697, the settlements were retaken without

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[48]Excerpt from the journal of Jean Beaudoin which appears in D.W. Prowse, A History of Newfoundland from the English, Colonial and Foreign Records (New York: MacMillan & Co., 1895), p. 232.

Hommes (men)	Habitants (houses)	Chaloupes (boats)	Morues (cod fish)
40	4	7	4300

Fig. 16: The Number of Men, Houses, Boats and Fish in Scilly Cove in 1697, as Recorded by a Member of the French Raiding Party Which Captured it.*

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*Source: Jean Beaudoin, "Table d'habitations anglaises de l'isle de Terreneuve, avec nombre des inhabitants de chaque place, les chaloupes qu'ils y ont, et le poisson qu'ils prennent, 1697," photo-copied MS in Centre for Newfoundland Studies, Memorial University of Newfoundland.

opposition and settlers returned. However, raids by the French did not end, as this excerpt from a letter written by a resident of Poole, dated September 21, 1702, makes grimly clear:

> This serves to advice [sic] you that yesterday Mr. Thos. Wadham in the Hopewell of this place arrived here in three weeks from Trinity Harbour; he brings the bad news that about a week before he left 40 or 50 armed Frenchmen came over by land from Placentia to Sillicove [Scilly Cove], surprised the inhabitants killing 3 or 4 and took Mr. John Masters out of his bed [,] rifled his house, and carried him and his goods aboard a Jersey ship laden with fish and sailed northward with the ship and 1,000 qtls. of fish . . . .[49]

To say the least, these were anxious times for English settlers in Newfoundland. However, although the French prevailed over the English in fighting in Newfoundland, the reverse was true in Europe, where the conflict ended in 1713 with an English victory. In signing the Treaty of Utrecht, France recognized English sovereignty over Newfoundland and withdrew its claims to the island.

1713-1800

Following the signing of the Treaty of Utrecht, the Newfoundland fishery was hit by a post-war depression which lasted into the 1720's. However, by 1750, with the opening of the Grand Banks fishery and the expansion of the

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[49] This letter is reproduced in Prowse, A History of Newfoundland, p. 239.

inshore fishery, a measure of prosperity had returned. As a result, the population of the island began to increase. In regard to our study area and its environs, cultural geographer C. Grant Head has estimated that by 1772 the settlements of Trinity Bay contained approximately 1500 year-round residents, with another 1500 coming during the summer to engage in the migratory fishery.[50] About 600 year-round residents lived in Trinity, the most populous settlement, followed by Old Perlican with about 500.[51] Other settlements on the eastern shore of the Bay, such as Scilly Cove, New Perlican, and Heart's Content contained fewer residents.[52]

Following the end of the American Revolution, the fishery experienced a boom which led to an acceleration in the numbers of people coming to Newfoundland. By the end of the eighteenth century the number of people involved in the migratory fishery had begun to decline as the number of persons coming to the island as year-round residents increased. Because of this trend, the English government finally discarded its long-standing policy of discouraging settlement in Newfoundland.

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[50] C. Grant Head, Eighteenth Century Newfoundland: A Geographer's Perspective (Toronto: McClelland & Stewart, 1976), p. 169.

[51] Head, Eighteenth Century Newfoundland, p. 169.

[52] Head, Eighteenth Century Newfoundland, p. 169.

Nineteenth Century

The early years of the nineteenth century saw another, even greater boom in the fishery which occurred in response to a re-opening of the European market. Consequently, the population of Newfoundland swelled, especially as a result of large numbers of Irish immigrants. Population growth continued throughout the nineteenth century, a trend which is reflected in the growth of Scilly Cove. In 1836, the population of the community stood at 261,[53] but by 1891 it had climbed to 787; a 300% increase.[54] In 1891, 262 individuals were engaged in the catching and curing of fish at Scilly Cove.[55]

With increases in prosperity and population, the residents of Scilly Cove began to assert their identity and independence from other communities through the establishment of a number of institutions. Having had their community described, during the late eighteenth century, as "A most Barbarous Lawless Place,"[56] where it was

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[53]Newfoundland, Colonial Secretary's Office, Population Returns, 1836 (St. John's: n.p., 1836), n. pag.

[54]Newfoundland, Colonial Secretary's Office, Census of Newfoundland and Labrador, 1891 (St. John's: J.W. Withers, Queen's Printer, 1893), I, p. 68.

[55]Newfoundland, Census of Newfoundland and Labrador, 1891, II, p. 72.

[56]Excerpt from the description of Scilly Cove by Rev. James Belfour which appears in Head, Eighteenth Century Newfoundland, p. 171.

> their usual custom to divert themselves during Sundays, with the music of a Piper carried in Parade thro' the Place . . . . It would make any well disposed person shiver to hear their horrid conversation of profane cursing and swearing . . . .[57]

The residents of Scilly Cove had apparently seen the error of their "barbarous" ways by 1827. In that year a mission of the Church of England was founded in the community, which was first administered by a minister stationed in nearby Heart's Content. Other institutions followed. In 1862 a branch of the Heart's Content Fishermen's Club (later renamed the Society of United Fishermen) was established. A significant change occurred in 1891, when, according to census records, a merchant (Joshua Hindy) began fish buying operations in the community, the first to do so.[58] A lobster canning factory was in operation during the 1890's which, in 1891, employed fourteen men and two women.[59] In 1899, an Anglican Church was erected.

Twentieth Century

In 1912, a noteworthy, though not particularly consequential, event took place in Scilly Cove: the

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[57]Rev. James Belfour, quoted in Head, Eighteenth Century Newfoundland, p. 171.

[58]Newfoundland, Census of Newfoundland and Labrador, 1891, I, p. 72.

[59]Newfoundland, Census of Newfoundland and Labrador, 1891, II, p. 63.

residents of the community decided to change its name. Perhaps in a final attempt to end the humiliation that they probably suffered through the mispronunciation of the name of their village by residents of other communities (one suspects that they were constantly being referred to, jocularly, as "the silly folks from Silly Cove"), they decided to rename the community "Winterton," in honour, states toponomy scholar E.R. Seary, of Sir James Winter, Prime Minister of Newfoundland from 1898 to 1900.[60]

The growth of the community continued into the twentieth century. During the early part of the century, more businesses were founded, and another church (the United) was built. Population growth continued, too, and involvement in the fisheries remained high. In 1901 the population was 915,[61] with 251 men and 136 women engaged in the catching and the curing of fish.[62] By 1921, the population had soared to 1098,[63] with 287 men engaged in

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[60] E.R. Seary, Place Names of the Avalon Peninsula of the Island of Newfoundland (Toronto: University of Toronto Press, 1971, p. 72.

[61] Newfoundland, Colonial Secretary's Office, Census of Newfoundland and Labrador, 1901 (St. John's: J.W. Withers, Queen's Printer, 1903), I, p. 62.

[62] Newfoundland, Census of Newfoundland and Labrador, 1901, I, p. 66.

[63] Newfoundland, Colonial Secretary's Office, Census of Newfoundland and Labrador, 1921 (St. John's: n.p., 1923), I, p. 80.

the fisheries,[64] using a total of 140 vessels.[65] By 1935, however, as a result of the Depression and a decline in the fishery, the population dipped to 977,[66] and continued to decline as residents left to seek employment on the mainland of Canada and in the United States. This trend continued throughout the 1930's and the 1940's.

Newfoundland's Confederation with Canada in 1949 brought on sweeping changes. One major change was that the economic perspective of the Newfoundland government under Premier Joseph R. Smallwood shifted away from the fishery -- historically, the mainstay of the economy -- and focused on the potential benefits of industrial development. At the same time, in order to extoll the merits of formal education, the traditional way of life in small Newfoundland communities (centred around the inshore fishery) was derided. As a result of this outlook, more and more people gave up the old ways and left the island. The fishery went into a general decline.

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[64] Newfoundland, Census of Newfoundland and Labrador, 1921, I, p. 85.

[65] Newfoundland, Census of Newfoundland and Labrador, 1921, II, pp. 84-5.

[66] Newfoundland, Department of Public Health and Welfare, Tenth Census of Newfoundland and Labrador, 1935 (St. John's: Evening Telegram, 1937), I, p. 80.

In Winterton, the population continued to drop throughout the 1950's, the 1960's, and the 1970's, reaching a low of 794 in 1971.[67] By 1975, however, the population had rebounded to 851.[68] Today (1979) it stands at 796.[69]

In the mid-1970's Canada established a 200 mile economic zone for the taking of fish off her shores. As a result, fish stocks increased, and new markets were procured. In Newfoundland, economic emphasis returned to the fisheries. In Winterton, the revitalization of the fishery has had a significant impact, evidenced by the fact that, at present, more individuals are working as fishermen than at any other time in the past 10 years.[70] There are 31 licensed, full-time commercial fishermen in the community and about 20 part-time fishermen.[71] Total fish landings for Winterton in 1979 were approximately 1.5 million pounds.[72]

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[67]Newfoundland, Winterton Concept Municipal Plan, p. 5.

[68]Newfoundland, Winterton Concept Municipal Plan, p. 5.

[69]Newfoundland, Municipal Directory, p. 151.

[70]Personal interview with Frank Pinhorn, Newfoundland Department of Fisheries, January 10, 1980.

[71]Personal interview with Frank Pinhorn, January, 10, 1980.

[72]Personal interview with Frank Pinhorn, January, 10, 1980.

Year	Population	Year	Population
1836	261	1921	1098
1845	331	1935	977
1857	474	1945	917
1869	563	1956	894
1874	669	1961	808
1884	752	1966	795
1891	787	1971	794
1901	915	1975	851
1911	1039	1979	796

Fig. 17: Population of Winterton (Scilly Cove): 1836-1979.*

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*Sources: Newfoundland, Colonial Secretary's Office, Population Returns, 1836 (St. John's: n.p., 1836), n. pag.; Newfoundland, Colonial Secretary's Office, Abstract Census & Return of Population, 1845 (St. John's: Ryan & Withers, 1846), p. 3; Newfoundland, Colonial Secretary's Office, Abstract Census and Return of the Population, & c. of Newfoundland, 1857 (St. John's: n.p., 1857), p. 36; Newfoundland, Colonial Secretary's Office, Abstract Census and Return of the Population & c. of Newfoundland, 1869 (St. John's: R. Winton, 1870), n. pag.; Newfoundland, Colonial Secretary's Office, Census and Return of the Population & c., of Newfoundland & Labrador, 1874 (St. John's: J.W. Withers, Queen's Printer, 1876), p. 44; Newfoundland, Colonial Secretary's Office, Census and Return of the Population & c., 1884 (St. John's: J.W. Withers, Queen's Printer, 1886), p. 40; Newfoundland, Colonial Secretary's Office, Census of Newfoundland and Labrador, 1891 (St. John's: J.W. Withers, Queen's Printer, 1893), I, p. 68; Newfoundland, Colonial Secretary's Office, Census of Newfoundland and Labrador, 1901 (St. John's: J.W. Withers, Queen's Printer, 1903), I, p. 62; Newfoundland, Colonial Secretary's Office, Census of Newfoundland and Labrador, 1911 (St. John's: J.W. Withers, Queen's Printer, 1913), I, p. 80; Newfoundland, Colonial Secretary's Office, Census of Newfoundland and Labrador, 1921 (St. John's: n.p., 1923), I, p. 80; Newfoundland, Dept. of Public Health and Welfare, Tenth Census of Newfoundland and Labrador, 1935 (St. John's: Evening Telegram, 1937), I, p. 80; Canada, Bureau of Statistics, Eleventh Census of Newfoundland and Labrador, 1945 (Ottawa: Bureau of Statistics, 1949), p. 176; Newfoundland, Dept. of Municipal Affairs and Housing, Winterton Concept Municipal Plan (St. John's: Dept. of Municipal Affairs and Housing, 1975), p. 5; Newfoundland, Dept. of Municipal Affairs and Housing, Municipal Directory (St. John's: Dept. of Municipal Affairs and Housing, 1980), p. 151.

PART 3: Boatbuilding and its Role in Winterton's Economy

Up until the middle of the twentieth century, when most of Winterton's adult males took part in the inshore fishery, boatbuilding was a common activity which was part of the yearly round of tasks followed by most fishermen. As Basil Greenhill has written in his important work Archaeology of the Boat:

> Most boats since men began building them have been the products, not of an organised industry with full-time craftsmen specialised in their trades, but of the part-time work of men who also had other trades and who had learned local boatbuilding traditions as part of their preparation for life.[73]

Greenhill's general observation neatly sums up the nature of boatbuilding in Winterton in the past. Boatbuilding there was not a specialized occupation followed by a few full-time practitioners, rather, it was simply one skill out of a repertoire of occupational skills practised by most fishermen.

Let us turn to the other occupational skills of Winterton fishermen.

Historically, Winterton's economy has been a subsistence economy centered principally around the inshore cod fishery. However, the catching of other species of fish,

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[73]Basil Greenhill, Archaeology of the Boat: A New Introductory Study (Middletown, Conn.: Wesleyan University Press, 1976), p. 26.

such as salmon (Salmo salar), squid (Illex illecebrosus), herring (Clupea harengus), turbot (Reinhardtuis hippoglossoides), capelin (Mallotus villosus), and lobster (Homarus americanus), also contributed to the economy of the community. Men participated in these fisheries close to shore, out in Trinity Bay, and at Baccalieu Island. Others travelled great distances from the community to fish on the Grand Banks and off the coast of Labrador. All of these activities were usually conducted during the months of June, July, August, September, and, sometimes, October. In the case of the inshore cod fishery, it was customary for the women of the community to play a major role in the drying, or "making" of the fish.

Also during the summer months, small garden plots of cabbage, potato, turnip, and carrot were maintained. However, these gardens were generally planted and tended by the women and children of the family, while the menfolk fished. After the end of the fishing season, the men helped with the fall harvest.

During the late fall and winter, men worked in the woods in the vicinity of the community to procure large supplies of firewood for home heating. During this period, trees were also selected for the construction and repair of wharves and flakes, as well as for the construction of barrels and boats. Occasionally, men would make hunting forays on Trinity Bay in search of sea birds or harp seals (Pagophilis groenlandicus).

In the spring, using materials obtained earlier, fish barrels, casks and drums were constructed, wharves and flakes were built and repaired, and boats were built. As the start of the inshore fishing season approached (usually in early May, but this depended on weather and ice conditions), men scraped and painted their boats and prepared their fishing gear.

Throughout the year, livestock such as horses, sheep, cows and goats were kept. During the summer the animals were released to forage in the commons and the barrens. After the fall harvest they were often kept within garden enclosures to fertilize these areas. During the winter they were kept in stables.

As we have seen, boatbuilding was merely one of the many occupational hats that a man might wear during the course of a year. In Winterton, where the quality of life was determined by the degree of success which people had in making use of the resources of the land and the sea, it was essential that the adult male know not only fishing skills, but also the skills of the farmer, the cooper, the carpenter, the woodsman, and the boatbuilder. Because the knowledge associated with the construction of boats was sufficiently widespread to enable any fisherman to put together a reasonably adequate craft, boatbuilding (as well as the other skills mentioned) was not a specialized occupation. In the words of one of my informants, when he was a boy, "Nearly everyone could take a shift and build a boat."[74]

Although there was no specialization _per se_, certain individuals did become known as particularly skillful boatbuilders. These men often earned extra money during the winter by building boats for other Winterton fishermen and for fishermen from other communities. Sometimes they sold new boats and other times they sold boats that they had used for a season or two. The more ambitious builders occasionally built two boats over the winter; one to sell and one to keep. While these individuals acquired reputations as proficient boatbuilders and were able to use their talents to earn extra money during the time of the year when profit-making opportunities are scarce, it was not feasible for them to abandon fishing and other pursuits and devote all of their time to boatbuilding.

Just as an individual can acquire a reputation as an accomplished boatbuilder, so, too, can a community gain a reputation as the home of many competent builders. Such a reputation belongs to Winterton. Largely because

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[74]From my March 15, 1978 interview with Marcus French, MUNFLA accession number C4436.

of the vitality of its boatbuilding tradition, and the availability of boatbuilding materials in its forests (either or both of which were lacked by other communities), throughout much of the twentieth century Winterton was called upon to supply new and used boats to fishermen from all over the Avalon Peninsula, especially those from communities along the southern shore of Trinity Bay, and the northern shore of Conception Bay. In the spring of the year, before the start of the fishing season, or in the fall, at the conclusion of the season, fishermen from these communities would travel to Winterton, or other likely communities, to enquire about the possibility of purchasing a boat. Fishermen from Bay de Verde, a community located at the rocky, treeless tip of the peninsula separating Trinity and Conception Bays, were frequent customers. As Winterton fisherman/boatbuilder Eleazor Reid recalls:

> They'd be down dog-thick in the summer. Every man would be after you asking, "Are you going to sell that boat [in] the fall?" Bay de Verde, Bay de Verde was always a fishing settlement, see? That's all they want. As soon as they saw you in the spring, that's the first thing they'd ask you: "Are you going to sell this boat [in] the fall?"[75]

Communities further up the Bay, unlike Bay de Verde, did possess ample stands of timber. However, the fishermen who

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[75]From my February 18, 1978 interview with Eleazor Reid, MUNFLA accession number C4434.

lived in these communities did not always exhibit a high degree of boatbuilding expertise, and often turned to Winterton builders for well-formed boats. According to Fred P. Hiscock of Winterton:

> They used to build some hard looking boats up there around Cavendish and them places [at] one time. They was queer looking to us, you know. I suppose they suited them, you know, but they were [a] queer looking shape, you know. The craft was different from what they built here. They wasn't, you know, they wasn't so streamlined-looking as the boats they built here.[76]

Changes Affecting Boatbuilding

Up until the 1940's, most Winterton residents followed the basic pattern of subsistence activities which had been in existence since the early days of settlement. However, with the continued decline of the inshore fishery, the mainstay of Winterton's (and Newfoundland's) economy, people began to leave the community in search of more profitable employment elsewhere. As a result, fishery participation fell, and with it the level of boatbuilding activity. Although it brought many improvements to the lives of Newfoundlanders, Confederation with Canada in 1949 also served to accelerate these trends. Gradually, the old way of life began to break down as employment

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[76] From my March 29, 1979 interview with Fred P. Hiscock, MUNFLA accession number C4633.

characterisitcs began to show signs of diversification and stratification.

Today, Winterton's economy is vastly different from what it was a generation ago. Although many residents still follow traditional subsistence activities, such as the planting of gardens and the harvesting of wood, the subsistence economy has been replaced by a cash economy which frees residents from the necessity of performing these tasks. Responsible for approximately 70% of all employment, the fishery still plays the central role in the economy.[77] In addition to individuals engaged in the fishery as commercial fishermen, there is also a large number of people employed by fish plants in Winterton, Hant's Harbour, and Bay de Verde. Outside of the fishery, others work as teachers in the local schools, and as employees in retail outlets and service industries. Several people work in Carbonear or St. John's and commute back and forth on a regular basis.

In regard to boatbuilding, its present role in the local economy is not as large as it was in the past. Inexorably tied to the state of the inshore fishery, local boatbuilding activity declined right along with the fishery throughout much of the twentieth century. This decline can

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[77] Newfoundland, Winterton Concept Municipal Plan, p. 5.

be clearly seen by counting the numbers of boats in use over time: 165 in 1901;[78] 100 in 1945;[79] and approximately 40 in 1980. The decline of the fishery is an obvious reason for the decline of boatbuilding activity, but there are others.

Confederation brought many improvements to the lives of the residents of Winterton in the form of a variety of social services. However, one of these services -- unemployment compensation -- has unintentionally resulted in the placing of constraints on Winterton's boatbuilding tradition. As we have seen, in the days before Confederation men often earned money during the winter by building one or more boats. Currently, however, with the availability of unemployment compensation, fishermen do not have to work during the winter, as they once did. Consequently, a good deal of the incentive to build boats for profit is lost. Compounding this situation are Unemployment Insurance Commission (UIC) regulations which prohibit unemployment compensation recipients from using their idle time to build boats to sell to others, or even to build boats for their

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[78]Newfoundland, Census of Newfoundland and Labrador, 1901, II, p. 62.

[79]Canada, Bureau of Statistics, Eleventh Census of Newfoundland and Labrador, 1945 (Ottawa: Bureau of Statistics, 1949), p. 176.

own use.[80] Winterton boatbuilders often point to the UIC and its narrow regulations as the principal cause of the decline of boatbuilding in their community. Loss of incentive was the main cause, said one man, but as much as he might want to build a boat, he admitted that it would be wiser for him to "sit on his arse" than risk losing his unemployment checks.

A federal fishing vessel program, designed to assist commercial fishermen with the purchase of new fishing boats, has also influenced traditional practices. The program of relevance to this discussion is one of several Fishermen's Assistance Plans which are administered by the Fisheries and Marine Service branch of Environment Canada.[81]

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[80] Unaware of these regulations, a few years ago one or two Winterton fishermen built boats while collecting unemployment compensation and were subsequently forced to forfeit unemployment benefits received during the time when the boats were being constructed. Ironically, while it is illegal for a man to build a boat while drawing unemployment compensation, it is perfectly legal for him to purchase a boat from someone who is not.

[81] Another fishing vessel program is administered on a provincial basis by the Fisheries Loan Board of Newfoundland. Known as the "Small Fishing Boat Bounty Program," this program provides qualified fishermen with bounties in the amount of thirty-five per cent of the approved cost of new fishing boat hulls from 25 to 35 feet in length. However, this program affects traditional design and construction practices less than the federal programs discussed because no specific standards are laid down for boats built, other than that they must be well-constructed and generally suitable for use in Newfoundland's fisheries. Another provincial program, "The Fishing Ships (Bounties) Act, 1970," contains rigid specifications, but this program pertains to large vessels in the 10 to 150 gross ton range.

Under this particular plan, qualified fishermen can receive subsidies of 35% or the total cost of hulls, engines, deck machinery, and electronic equipment for vessels from 25 to 75 feet in length. In order to comply with the regulations of this program, boats must be built to rigid specifications[82] by certified builders, and must be inspected by a federal official no less than four times. For those who decide to have boats built under this program, traditional practices are affected by these regulations in three primary ways:

1. Instead of building his boat himself or having it built by a fellow fisherman from his community, a fisherman must select a builder who has been "certified" as a competent builder by the Fisheries and Marine Services. Although the process involved in becoming a certified builder is not difficult, this policy tends to encourage fishermen to have their boats built by specialists. At present there is one certified builder in Winterton in the person of Wilson Reid. If fishermen do not elect

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[82] For the details of these specifications, see Canada, Environment Canada, Fishermen's Assistance Plans, Fishermen's Assistance Plans: General Specifications Fishing Vessels 30'0" to 36'0" (n.p.: n.p., n.d.), available from the office of the Fishermen's Assistance Plans, St. John's. See also, G.M. Sylvester and H.A. Shenker, Minimum Specifications for Building 35' to 50' Wooden Fishing Vessels, No. 82 in the Technical Report Series of the Industrial Development Branch (Ottawa: Fisheries and Environment Canada, 1974).

to have Reid build their boats, they must go outside of the community to find another builder.

2. Individuals who have always built boats according to the methods which were handed down to them by their fathers or other members of their community are generally faced with the necessity of adopting new methods of construction detailed in the federal specifications.

3. Since the scantlings (i.e. dimensions of all structural members) prescribed by the subsidy program are often greater than those used traditionally, the resultant boats are stronger and heavier. The matter of weight is of significance here. While few fishermen would object to added strength in their boats, because traditional design and construction practices are often keyed to specific environmental and/or use requirements,[83] extra weight is not always welcome. For example, in some localities the absence of sheltered harbours requires fishermen to haul their boats out of the water after each use. In such cases, lightness is an asset and heaviness is not.

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[83] According to M.M. Manuel, Chief Technical Advisor of the Fishermen's Assistance Plans (St. John's), regional differentiation in regard to boat use in Newfoundland has resulted in complaints from fishermen about subsidy regulations concerning scantlings. (Personal interview with M.M. Manuel, March 5, 1980).

Despite the influences of governmental programs, for the most part, boatbuilding in Winterton goes on in the same way that it always has. With the possible exception of one individual (Wilson Reid) who may be regarded as a specialist, most of the men involved in boatbuilding are non-specialists. Although the number of men who possess boatbuilding skills appears to be less than it once was, boatbuilding is still regarded as a very ordinary, unremarkable activity. In fact, it is considered to be such a commonplace that my informants were a bit puzzled, at first, as to why I would be interested in studying it at all. "When someone needs a boat," Marcus French told me matter-of-factly, "they gets at it and tries to build one."[84]

The reputation of the community as the home of good boatbuilders is still a strong one, and, although the number of boats being built in Winterton today is a small fraction of what were built in the past, fishermen still come from near and far in hopes of fishing next year in a Winterton boat.

In regard to the future of boatbuilding in Winterton, the resurgence of the inshore fishery bodes well for the community's boatbuilding tradition. Whatever

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[84] From my April 7, 1978 interview with Marcus French, MUNFLA accession number C4437.

form that tradition may take, it seems clear that as long as a demand for small boats exists, boatbuilding skills will remain alive.

IV

WINTERTON BOAT TYPES

Currently, there are approximately forty boats in Winterton, which, according to the local system of classification, fall into five basic categories: motor boats, rodneys, bay punts, speedboats, and longliners.[85] Since it is my intention to discuss only those types which are used _and_ constructed in the community, I will devote attention to the motor boat, the rodney, the bay punt, and the speedboat, but not the longliner. While it is a type which is owned by three Winterton fishermen, the longliner, a larger (40-65 foot) multi-purpose fishing vessel, is a type which has never been built in the community.[86]

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[85] As with the boats themselves, the terms used to describe them are subject to a good deal of regional differentiation. For example, a particular type of craft may be called a "skiff" in one community, a "punt" in another, and a "rodney" in a third. By comparing the boat type names used in Winterton with those that Victor Butler assigns to Placentia Bay boat types in _The Little Nord Easter: Reminiscences of a Placentia Bayman_, one can see the sort of variation that can occur. See _The Little Nord Easter_, p. 53.

[86] Although large fishing schooners were built in Winterton in the past, today vessels over 35 feet in length are rarely constructed. It should also be pointed out that not all of the motor boats used in Winterton have been built there. Since fishermen can obtain federal and provincial loans or bounties for fishing boat construction, they often choose to use such monies to purchase craft built by full-time

Fig. 18: Boats at the Government Wharf, including motor boats, rodneys, speedboats, and a longliner.

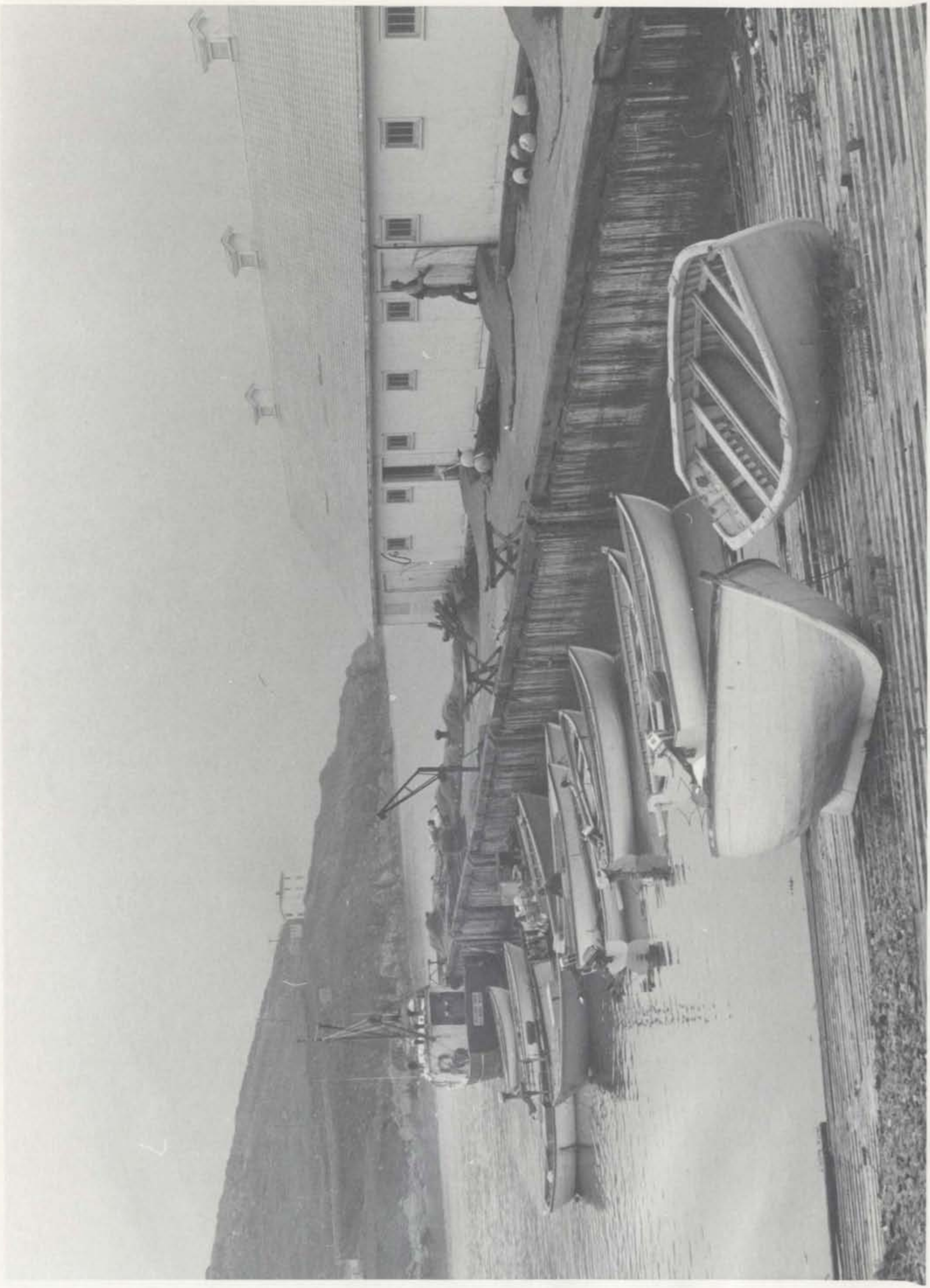
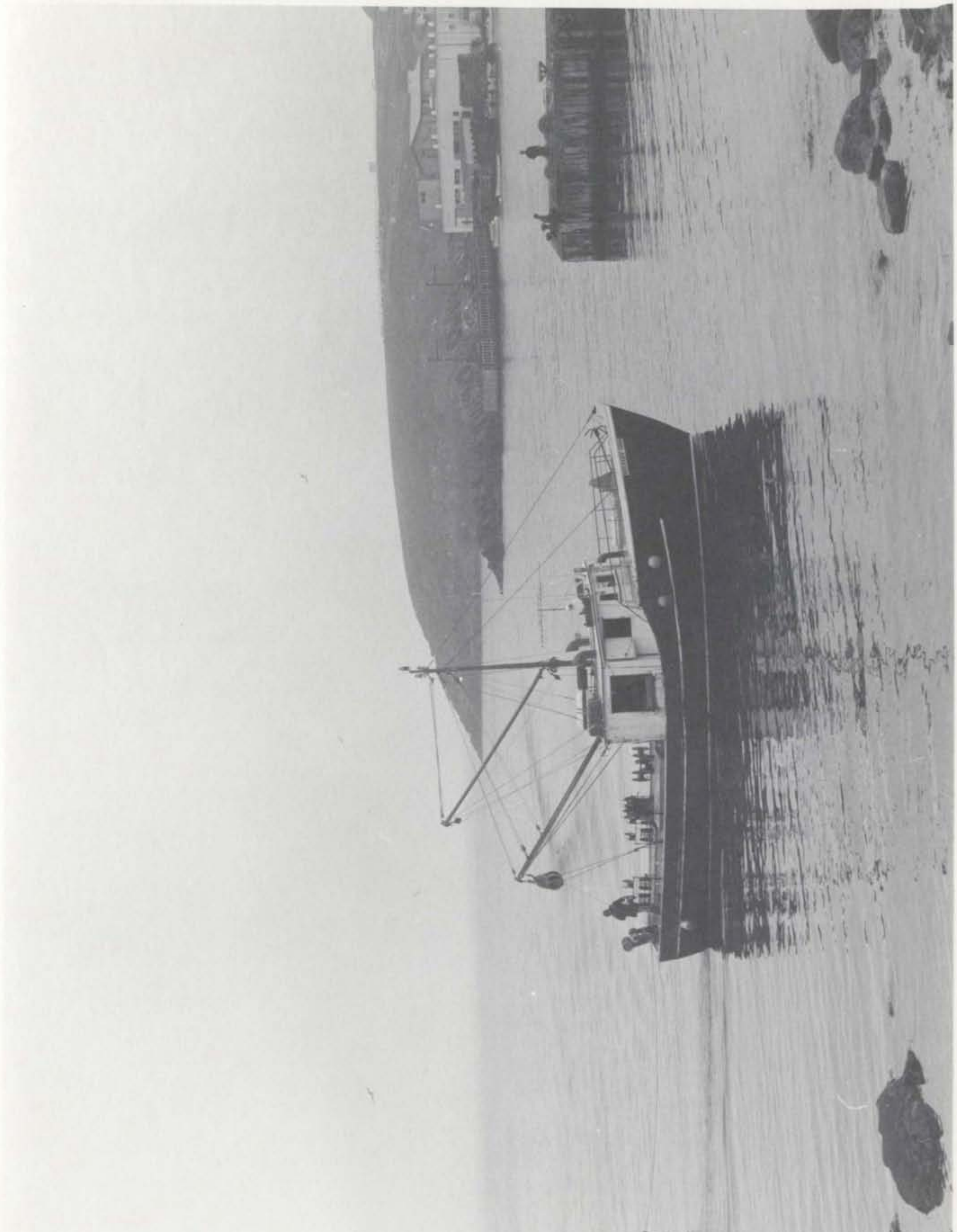


Fig. 19: The 58' longliner Western Wind owned by Winterton fisherman Windross Banton. This vessel was not built in Winterton.



In this chapter I will present detailed descriptions of each of the four local types, paying particular attention to: genesis; general morphology and construction; propulsion; crew size; and, use. In order to shed more light on the history of boatbuilding in Winterton, I will also present descriptions of two extinct boat types: the Baccalieu skiff and the bully.

The Motor Boat

Although all four of the boat types presently constructed and used in Winterton are commonly powered by either inboard or outboard motors, and could, technically, be referred to as motor boats, only one of the three is known by the designation "motor boat." At first, the logic behind the naming of this boat type seems puzzlingly arbitrary, but, upon investigation of the etymology of the term, one learns that the reasoning was sound enough. The class of craft which is now known as the motor boat received this appellation c. 1920.[87] This was done because this type

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boatbuilders located outside of the community, instead of purchasing boats built locally by part-time builders. Frequently, boats are ordered from specialists based on the northern shore of Trinity Bay.

[87]The first Newfoundland census to include figures on motor-powered fishing boats was the census of 1935. Obviously, the use of engines was firmly rooted in Winterton by that time as a total of 64 small fishing boats and one schooner were found to be motor-powered. See Newfoundland, Tenth Census of Newfoundland and Labrador, 1935, II, Part 2, pp. 68-9.

of boat was the first inshore fishing craft to be equipped with the low-compression, single-cylinder "make-and-break" engines which were being made available to Newfoundland fishermen at that time.[88] Prior to the advent of the gasoline engine, this type of boat was propelled by sails and oars, and was probably known by the term "big punt," or simply, "fishing boat." Fig. 20 is a photograph of one of these pre-engine craft.

The origin of this and other related Newfoundland boat types is difficult to trace. Given the fact that Winterton residents are the descendants of English settlers, one is easily drawn to the conclusion that modern craft have, similarly, descended from English stock. Unfortunately, however, small working craft have generally escaped the notice of the chroniclers of Newfoundland history, and as a result, very little information of any value exists concerning early Newfoundland boats. Information pertaining to English small working craft of the fifteenth, sixteenth, and seventeenth centuries is also very scarce. Therefore, it is extremely difficult, if not impossible, to document the

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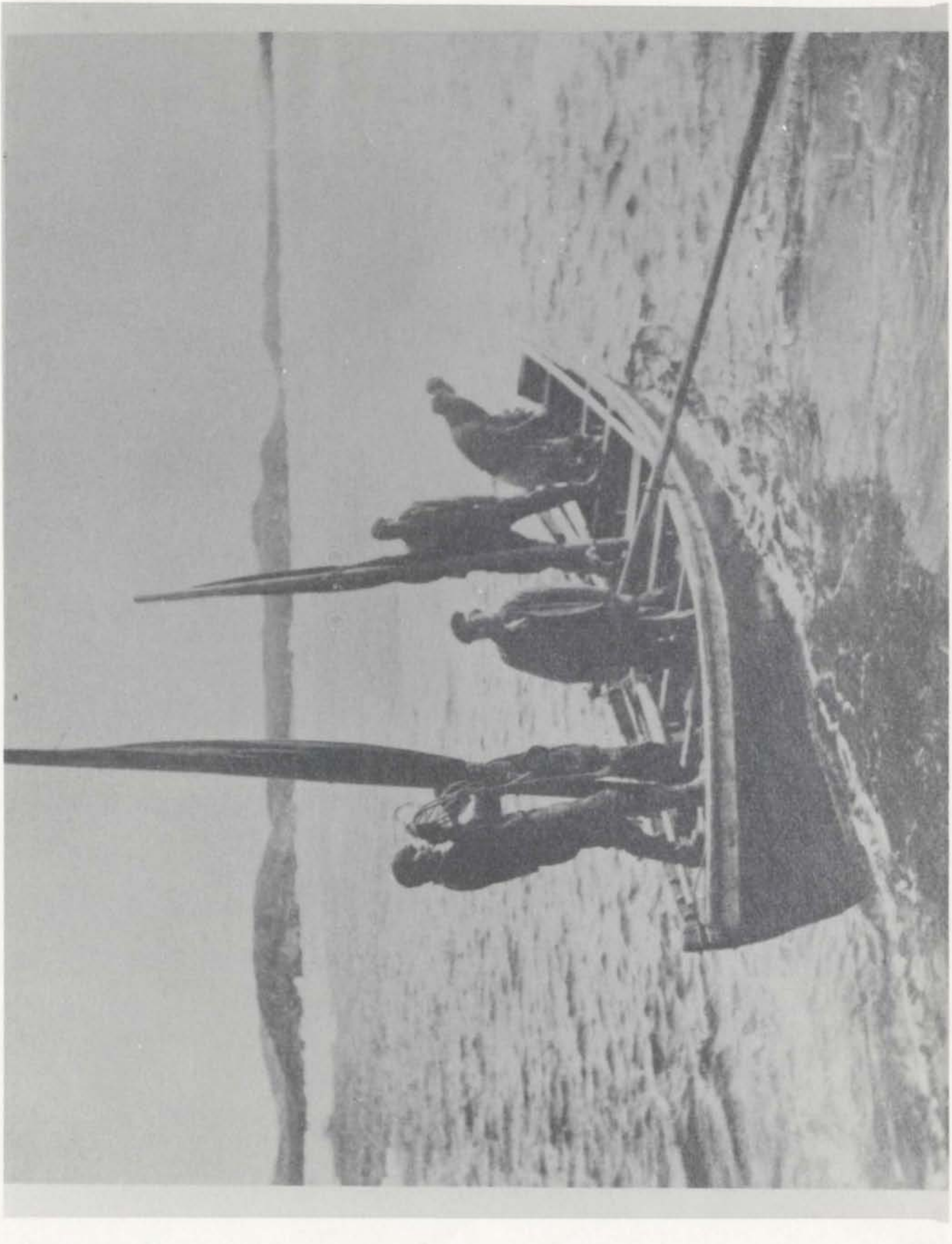
[88]See the following for more information on early marine engines: Edward Butler, Evolution of the Internal Combustion Engine (London: C. Griffin & Co., 1912); Bill Durham, "The Revolution in Power, 1904-14," National Fisherman, 59, No. 13 (April 30, 1979), 116-120; Peter Spectre, "The Reliable One-Lunger," Woodenboat, 30 (Sept.-Oct. 1979), 59-64; and "Fishermen Still Depend on the Acadia Engine," The Evening Telegram (St. John's), Sept. 10, 1979, 10.

Fig. 20: A sail and oar-powered punt similar to those used in Winterton prior to the introduction of gasoline engines. (Newfoundland Provincial Archives Photo A12-58-VP-2771)



relationship between the British boatbuilding tradition and the incipient tradition of Newfoundland. Newfoundland's contact with English boatbuilding traditions is undeniable (as survivals of old English terms and techniques testify), but when considering the evolution of Newfoundland boat types one must also take into account the island's long association with nations such as France, Portugal, and the United States, whose fishing fleets have sought cod in its offshore waters. Certainly, exposure to a wide variety of vessels built in other lands provided Newfoundland boatbuilders with a range of design and construction alternatives. Despite these possibilities, noted small craft historian Howard I. Chapelle, the only person to hazard a guess in print, has written that the parent of the contemporary motor boat came to Newfoundland via Nova Scotia "sometime before 1870."[89] Regretably, he provides no data to support this assertion. The recently published Little Boats: Inshore Fishing Craft of Atlantic Canada by Ray MacKean and Robert Percival depicts a number of small craft from the Maritime Provinces whose hull forms strongly resemble those of Newfoundland boats,[90] but this resemblance

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[89]Chapelle, American Small Sailing Craft, p. 223.

[90]I am specifically referring to the St. Margaret's Bay trap skiff, the Prince Edward Island shallop, and the Saint John Harbour salmon skiff. See MacKean and Percival, The Little Boats, pp. 79-80, 90-1, 104-6.

alone does not confirm Chapelle's notion that design ideas flowed from west to east. Obviously, the question of the evolution of Newfoundland boat types is open to speculation, and it is clear that, until more research is done, any pronouncements on the origin and development of these boats are simply problematic.

Prefaced by these speculations and qualifications, my own view, at present, is that the first boats built in eastern Newfoundland were heavily, if not entirely, influenced by English design traditions. However, after settlements began to be established, in many isolated areas direct contact with England was reduced or eliminated and, influenced by such factors as a unique environment and specific use requirements, distinctive boat designs began to evolve. Therefore, although the genesis of contemporary Newfoundland small craft may be traced to designs brought by English fishermen/planters, their evolution is probably a product of boatbuilders' responses to a specific environment and to specific uses.[91]

Today's motor boat is strikingly similar to its unpowered ancestor, an observation that suggests that its basic form has changed little over the past sixty to seventy

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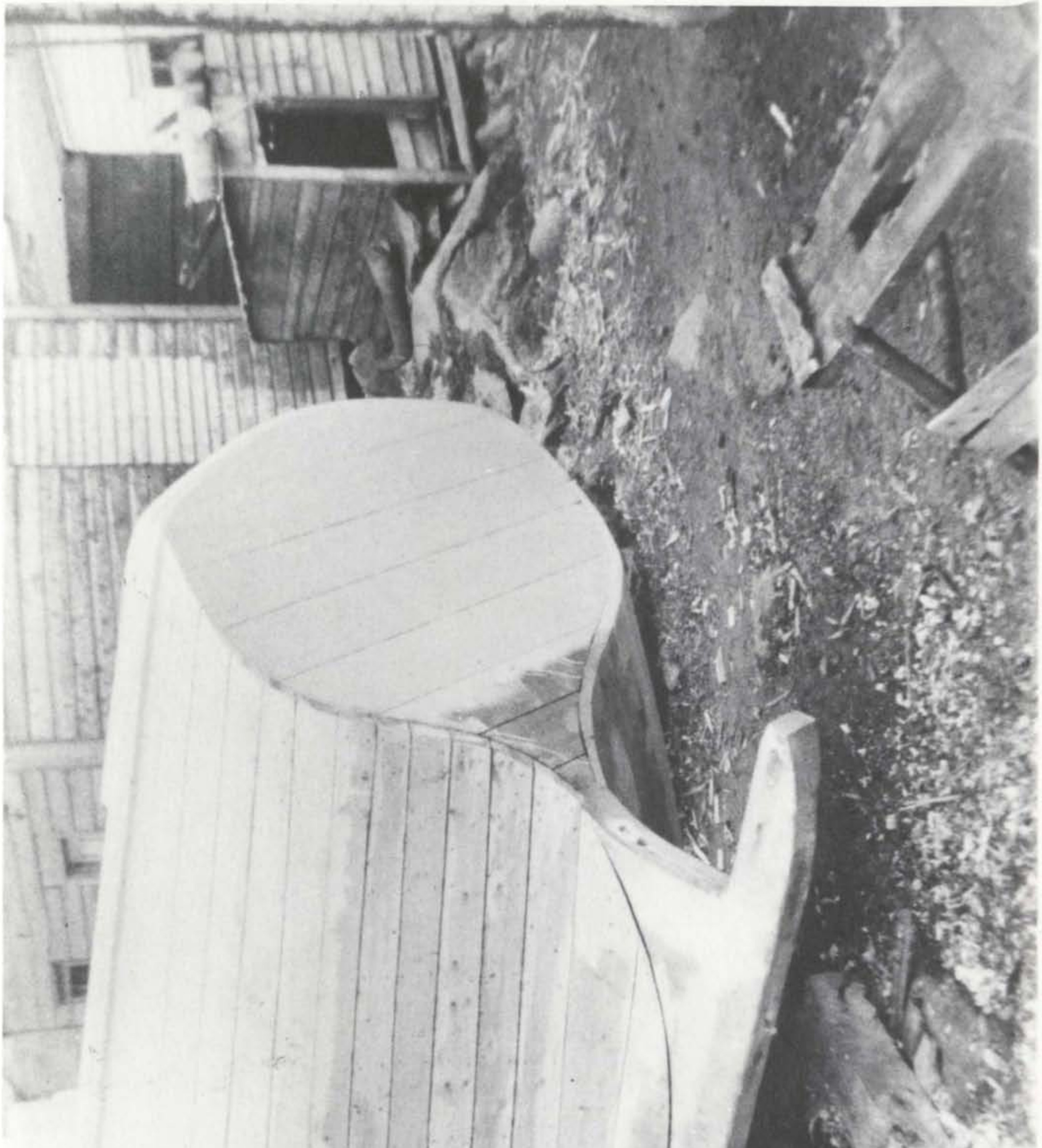
[91]Maritime historian William A. Baker states that many regional boat types from the eastern coast of North America descended from the sloops and shallops that were used by the region's first European settlers. See William A. Baker, <u>Sloops and Shallops</u> (Barre, Mass.: Barre Publishing Co., 1966).

years. In fact, since the introduction of gasoline engines, only four major changes have occurred: (1) the keel/sternpost assembly was strengthened to better accommodate an engine shaft and to endure its vibrations; (2) a relatively upright stern (see Fig. 21) was replaced by an overhanging transom stern, probably in an attempt to increase "bearing" aft; (3) & (4) length and width of the hull were increased because, since the introduction of engines, it was no longer necessary to limit boat size to what could be rowed efficiently by its crew. Fig. 22 is a drawing by Marcus French which shows the development of the boat type under discussion from a sailing and rowing form (pre-1920) to an engine-powered form (c. 1930). It is interesting to note that, despite the introduction of gasoline engines, sails were retained.

Perhaps the most common of all contemporary Newfoundland inshore fishing craft, motor boats are round-bottom, carvel planked open boats with raking stems and bold sheer lines. They range in length from 20 to 34 feet. As mentioned above, they have over-hanging transom sterns. These boats are generally constructed of white spruce or balsam fir planking over either sawn timbers of white spruce or balsam fir, or steam bent "juniper"[92] (_Larix_

[92]This species is commonly referred to as "juniper" in Newfoundland, but elsewhere it is known as larch or tamarack.

Fig. 21: This photograph, taken c. 1958, illustrates the type of "upright" stern that was used with motor boats prior to the acceptance of the overhanging transom stern. The man caulking is John Reid. (Photo by Ralph Reid)



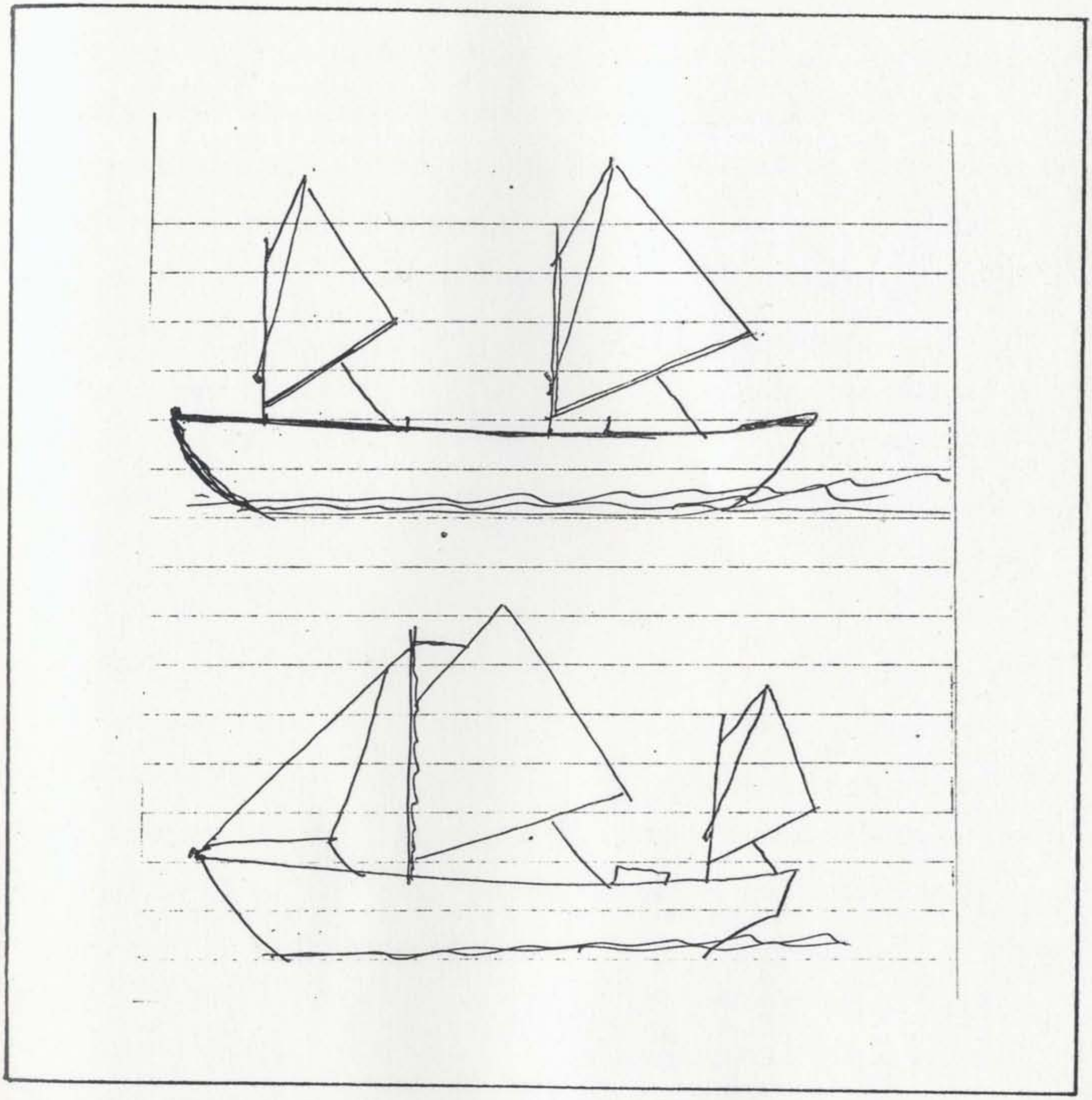


Fig. 22: Evolution of fishing boat form in Winterton. Top: 18'-19' punt, c. 1920. Bottom: 21'-23' motor boat, c. 1930. (Drawing by Marcus French)

laricina) laths. Because of the scarcity of hardwoods in the vicinity of Winterton, stems, sternposts, aprons, deadwoods and keels are usually of white spruce or balsam fir, as well. Occasionally, however, a builder will procure a piece of white birch (_Betula papyrifera_) which will be used for the keel. Planks are fastened with common, round galvanized nails. Hulls are caulked with oakum.

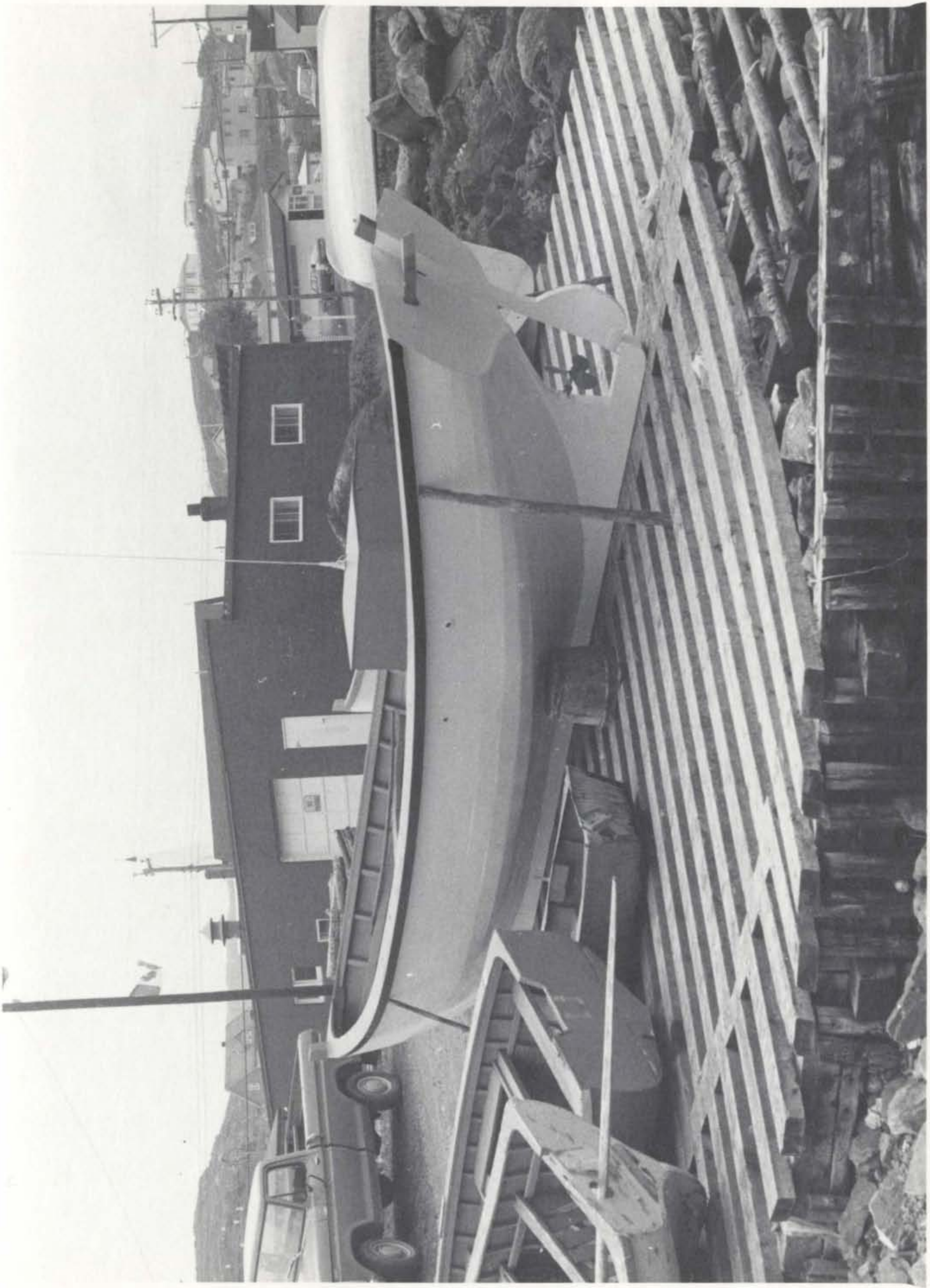
The interior of the hull is divided into three sections, or "rooms": the forward standing room, the midship room, and the after standing room. Both the forward and the after standing rooms are used as standing positions while fishing, and are fitted with level sections of flooring called "shoots." The midship room is positioned in the center of the hull and is separated from the other two rooms by watertight partitions called "bulkheadings." This section is used as a well into which the fisherman places his catch. It is lined with a layer of planks called the "ceiling," and is usually covered with removable boards called "covering boards" or "gang boards." A small, enclosed storage area, called the "cutty," or "cuddy," is usually built up in the bows next to the stem. The engine is usually placed just aft of the midship room in a small "house."

Although there are still a fair number of vintage one and two cylinder (3-7 1/2 horsepower) gasoline engines in use in Winterton (usually bearing the trade names "Acadia"

Fig. 23: This 21' 3/8" motor boat was built by Eleazor Reid in 1977. Upon his retirement from the fishery in 1978, he sold it to John Sparkes of Lower Island Cove, Conception Bay. The boat was originally powered by a 4 h.p. Acadia inboard engine.

Fig. 24: Stern view of motor boat by Eleazor Reid.

Fig. 25: A trap skiff. This 28' craft was built in 1978 by Wilson Reid for Winterton fisherman Tom Brinson. (Note: the piece of wood protruding from the counter is the blade of the sculling oar.)



or "Atlantic"), in recent years an increasing number of motor boat owners have turned to 15-30 horsepower diesel engines. As in the past, motor boats carry long spruce sculling oars. After a boat's engine is shut off, the single sculling oar is passed through a sculling port, or "score hole," in the counter and used to maneuver the boat in tight spots, such as around wharves, where a low rate of speed in required. While inside and outside rudders are both employed on Newfoundland motor boats, the outside position is the one most often selected by Winterton boat-builders. Steering is by means of a tiller.

Although all boats of the general description presented here are called motor boats, the larger boats of this type, approximately 26-34 feet in length, are also called "trap skiffs." In addition to being longer and wider than the other boats in their class, trap skiffs also differ in that they often exhibit more concavity, or "hollowing," in the portion of the hull below the waterline. In all other respects these large motor boats are similar to their smaller class mates. The distinctive features of the trap skiff are due to the particular use requirements which are placed upon motor boats employed in the cod trap fishery. Fishermen who engage in this fishery, which involves the use of large, heavy pound nets (Fig. 26), require boats which are long enough, wide enough, and "stiff" enough to

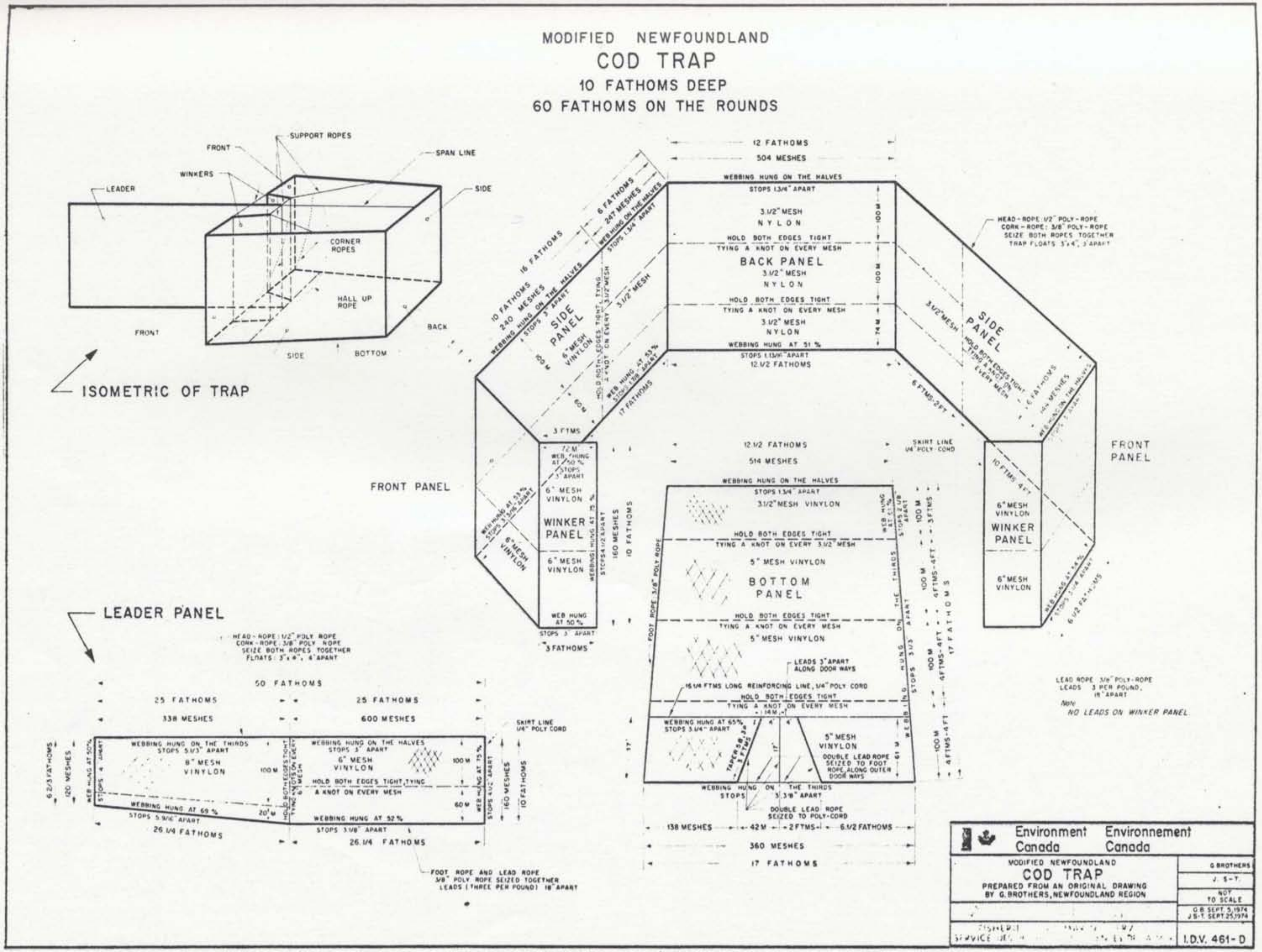


Fig. 26: Modified Newfoundland Cod Trap. (Drawing by G. Brothers)

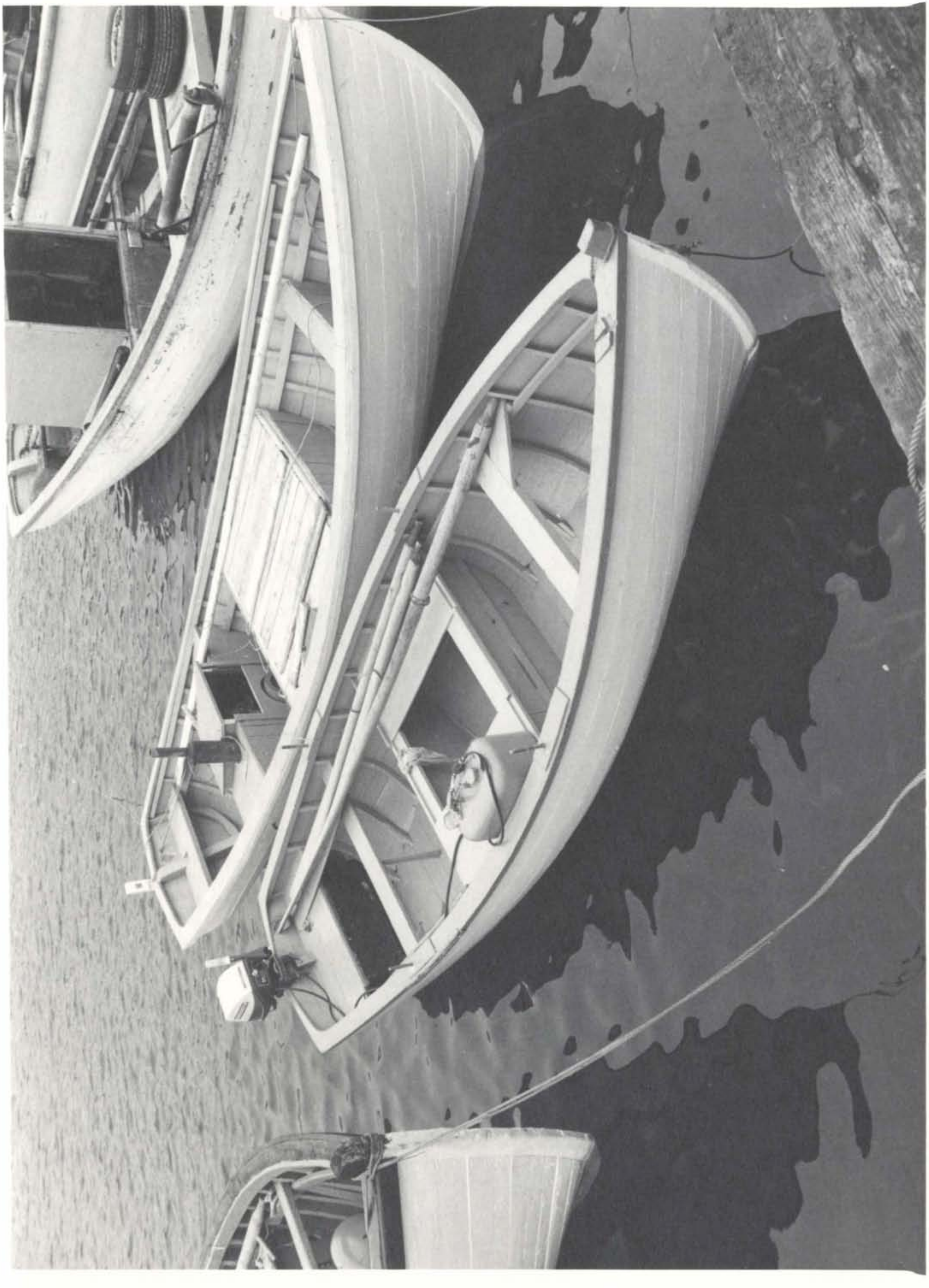
provide a stable working platform while the cumbersome net is hauled in over one rail and emptied of its contents. In addition, a proper trap skiff must have a load capacity sufficient to carry a sizeable quantity of fish. (A large trap skiff might be able to carry ten thousand pounds of fish, or more.)

Aside from their use in the cod trap fishery, trap skiffs join smaller motor boats in the cod, flounder, turbot, herring, and mackerel fisheries (using gill nets), as well as the squid fishery (using Japanese jiggers on nylon lines attached to jigging rollers). The average size of a motor boat crew participating in these endeavours is usually two to three men.

The Rodney

The rodney, or punt, as it is sometimes called, is a round-bottom carvel planked open boat, usually 15-16 1/2 feet in length. Though lacking the over-hanging transom of the contemporary motor boat, the rodney possesses the same basic hull form, albeit on a smaller scale. This similarity is not coincidental. According to my informants, prior to the introduction of the gasoline engine, the big punt (pre-motor motor boat) and the rodney were customarily built from the same model. That is, the same construction moulds were used for both, with boats of different dimensions (i.e. length, width and depth) being derived by varying

Fig. 27: Outboard-powered rodney and inboard-powered motor boat tied up side-by-side at the Government Wharf. (The rodney was built by Chesley Gregory.)



the distances between mould stations and by increasing or decreasing the height of the sides of the moulds. This being the case, it would appear that the origin of the rodney is identical to that of the motor boat.

Unlike "motor boat" and "trap skiff," the derivation of the term "rodney" is not clear. The most popular explanation of the word links its birth to Capt. (later Admiral) George Brydges Rodney (1719-1792), who was appointed Governor of Newfoundland in 1749.[93] Proponents of this theory often say that Rodney was frequently observed traveling from the shore to his ship in a small boat, and that this boat type was copied by Newfoundland fishermen/boatbuilders, who bestowed it with the sobriquet "rodney." Another, less well-known, theory is that the term stems from an old English dialect word which means "an idler or loafer; a casual worker; a disreputable character."[94] The latter theory is probably the more likely of the two. In the days before old age pensions (that is, before Newfoundland's Confederation with Canada in 1949), rodneys were commonly used for "single-handed" fishing by fishermen who

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[93]Gordon Duff, "A Biographical Dictionary of the Governors of Newfoundland," MS at Centre for Newfoundland Studies, Memorial University of Newfoundland, (1964), n.p.

[94]The Oxford English Dictionary (Oxford: Clarendon Press, 1933), VIII, p. 749.

were too old for more strenuous activities. As Eleazor Reid recalls:

> . . . and they used [rodneys] for single hand, those old men. Say now, when a man get up [in years, and] he'd be too old to be working clear of home or going away fishing, he had a single-handed rodney, 15 or 16 feet. He'd go out here alongshore, go alongshore fishing, you know.[95]

Since these "single-handed" fishermen could, with some justification, be called "casual workers," I feel that the term "rodney," now used to identify a Newfoundland boat type, could be traced back to an English dialectal usage.

Building materials and construction methods are basically the same for both motor boats and rodneys. (A detailed description of the construction of a rodney is given in Chapter VI.) The internal structures of the motor boat and the rodney are also the same, except for the fact that the rodney is not equipped with an inboard engine. In another parallel with the motor boat, in former days the rodney was propelled by sails and oars. Sails were usually limited to a removeable sprit sail with boom and, possibly, a jib. Fig. 28 shows a sail made from flour sacks which is still in use in Winterton. A pair of 7-8 foot oars ("paddles") and a single sculling oar (about one foot shorter than the overall length of the boat) were standard

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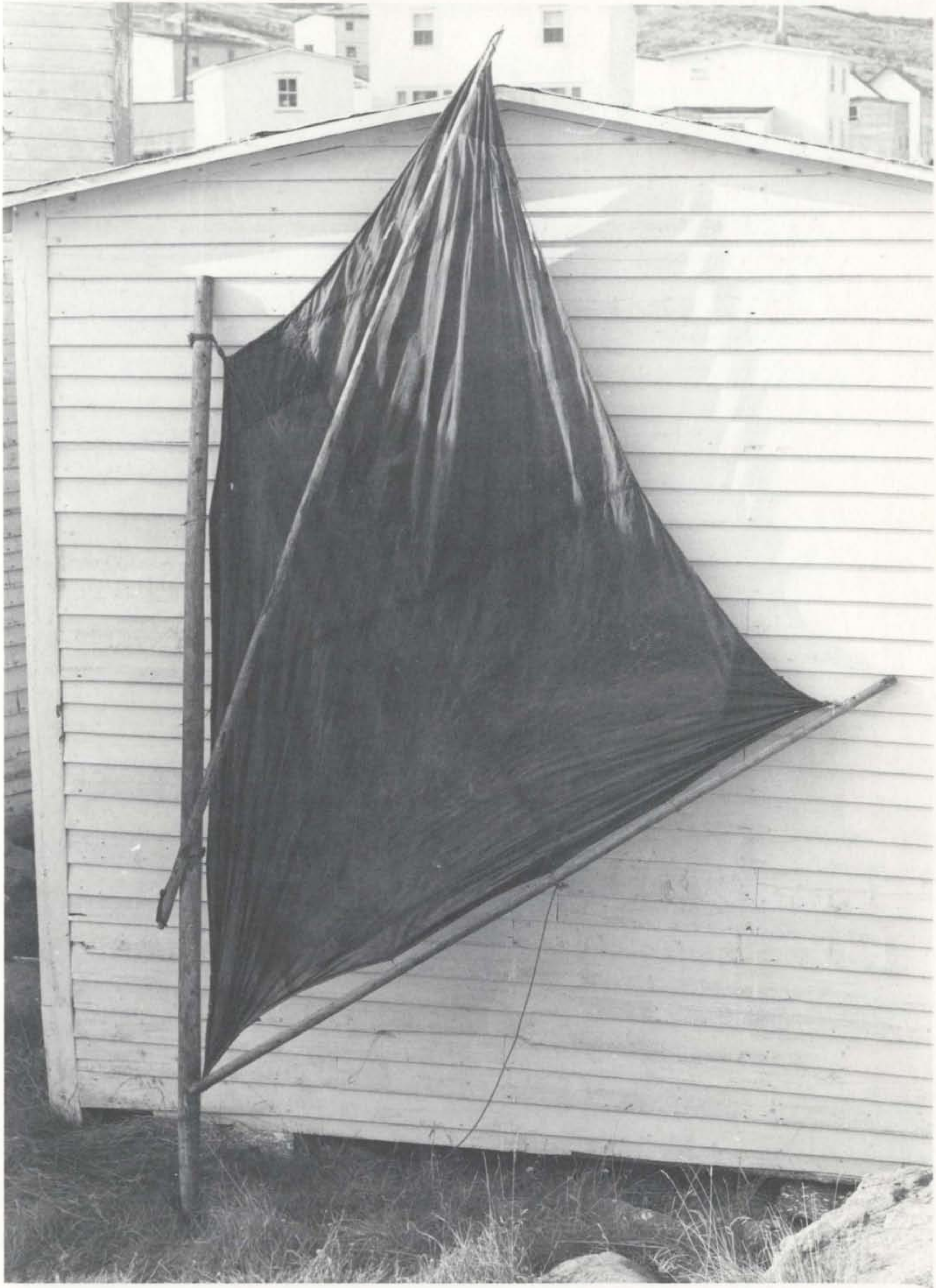
[95]From my February 4, 1978 interview with Eleazor Reid, MUNFLA accession number C4432-3.

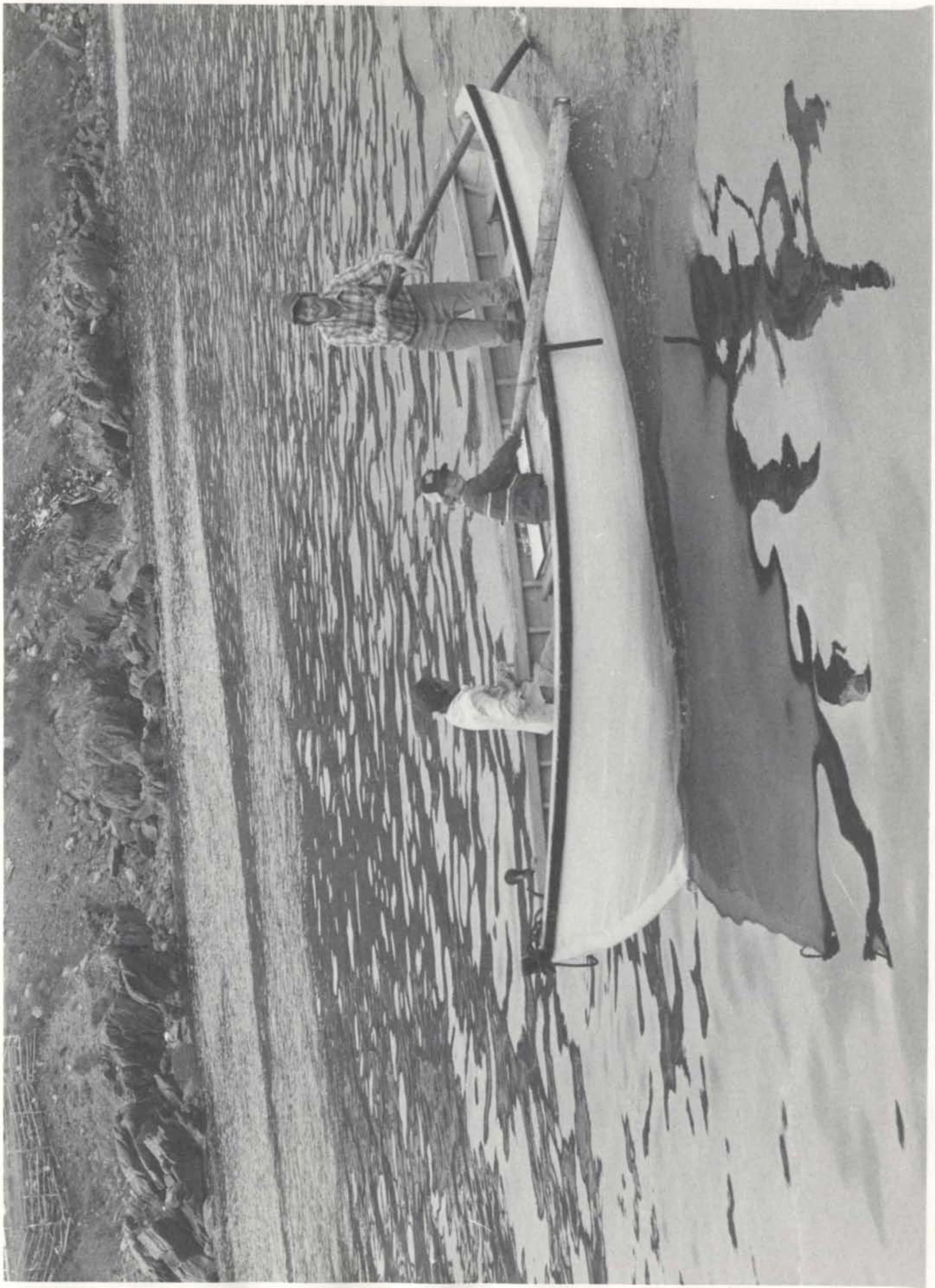
Fig. 28: "Spread" sail (sprit sail with boom) which Marcus French carries on his 16' 4" rodney. Approximately 38 square feet, the sail is made of sewn-together flour sacks which have been dipped in oil.



equipment aboard rodneys. With its wine glass-shaped stern (a component which has remained an integral part of the rodney hull form), the rodney was virtually double-ended on the waterline, a feature which reduced the amount of hull surface in contact with the water and made the craft an easy one to row. After the introduction of the outboard motor in the years following World War II, this mode of propulsion quickly replaced sails and oars. Despite this trend, however, the practice of carrying a sculling oar and two paddles still persists. Today's rodneys are powered by small --5,6,7, or 9.9 horsepower-- stern-mounted outboards.

To date, the inception of the outboard motor has fostered only two apparent changes to the rodney hull form: the counter has been cut down; and, the stern profile is more upright. Both changes have been made in order to improve the position and, therefore, the thrusting ability of the outboard motor. However, these changes are fairly minor. It is clear that, at this point in time, technological change in the form of the outboard motor has not precipitated alterations in the rodney hull form of the magnitude of those made to the motor boat hull form as a result of the introduction of the inboard engine. But, when making this comparison, one must consider the fact that motor boats have gone through about sixty years of

Fig. 29: Three Winterton boys rowing a rodney. Note that the boy standing is using a sculling oar, while his mates are working "paddles."



change compared to approximately thirty for the outboard-powered rodney. The motor boat hull form has, indeed, undergone major change, but change has always come very gradually (for example, upright sterns were being used as recently as the late 1950's). Likewise, the few changes which have been made to the rodney hull form have come slowly. In keeping with the traditional design mechanisms described in Chapter V, it is reasonable to assume that as boatbuilders continue to construct rodneys, changes in the rodney hull form will gradually emerge.[96]

The rodney is esentially a general-purpose utility boat, however, three functions of the craft are especially prominent. First, rodneys are used as a fishing boat by lone ("single-handed") fishermen engaged in the inshore cod fishery (hand line and trawl). Second, rodneys are used as auxiliaries to trap skiffs when cod traps are being hauled. Third, rodneys are used as tenders, or "collar punts," which ferry fishermen from the shore to larger boats riding on moorings ("collars") in the harbour. Rodneys are also used for bird and seal hunting during the winter months, as well as for fishing during warmer months. In regard to fishing activity, rodneys are used

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[96] The design innovations of boatbuilder Herbert Harnum which are described in Chapter V may be indicative of what the future holds for the rodney hull form in Winterton.

Fig. 30: Jim Parrott "steams" into the harbour in a rodney built for him by Chesley Gregory.

by one and two man crews engaged in the squid fishery (using hand jiggers), the herring fishery (using gill nets), the lobster fishery (using lobster traps), and the salmon fishery (using salmon nets).

The Bay Punt

The bay punt is a 18-19 foot round-bottom, carvel planked open boat which is powered by a small outboard motor. It is remarkably similar to the rodney. In fact, if one does not take into account the 2-3 foot difference in their overall lengths it is virtually impossible to tell the two types apart. The bay punt has the same basic hull form as the rodney, and it is built in the same way of the same materials. The similarity of the bay punt and the rodney can be traced to their common origins. In the days before the introduction of the gasoline engine, the rodney, the bay punt and the big punt were all built from the same construction moulds. Because of this, although each type differed from the others in terms of actual length, width and depth, all three hull forms were proportionally alike.

Prior to the introduction of the outboard motor, and the subsequent arrival of the speedboat, large numbers of bay punts were built and used in Winterton. In both construction and use, these boats were highly specialized. Propelled by sails and oars, they were used only during the winter for the hunting of sea birds (especially "turs," i.e. the Atlantic murre, Uria aalge) and seals in Trinity Bay. Because large ice floes, called "pans," were sometimes encountered in the Bay, bay punts were constructed with thinner planking and narrower timbers than those used in ordinary fishing boats so that they would be light enough to allow their four-man crews to haul them up onto the ice with little difficulty. For protection from the danger of hull-piercing "drift ice," the bows of the boats were armoured with a sheathing of tin, and the keels were fitted with iron "shoes." Bay punts were used only during the winter and only for hunting. When winter-time birding and sealing pursuits came to a halt, owners of these boats put them away to dry out, so that they would be light enough to be used for the next hunting season.

The construction of bay punts has fallen off sharply in Winterton during the last ten to twenty years, and it would appear that this type is nearing extinction. To the best of my knowledge, only one of these boats remains in Winterton.[97] The introduction of the speedboat was the principal cause for the demise of the bay punt type. Easier to construct and able to cover a wider hunting area in much less time, in recent years the speedboat

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[97]This boat is an 18 foot bay punt owned by Lionel Piercey.

has been the craft overwhelmingly preferred by individuals involved in winter hunting activities on the Bay.

The Speedboat

The speedboat, or flat, is the most recently introduced Winterton boat type. According to most accounts, the first such craft was brought into the community in the late 1950's or early 1960's by an individual who was not a native of Winterton. The speedboat is, typically, 15 to 20 feet in length. It is a beamy craft with a relatively flat bottom, straight sides, and a broad, square stern. In accordance with the local preference, speedboats, like motor boats and rodneys, display aggressively raking stems. These boats are constructed with white spruce or balsam fir planks laid carvel-fashion, and are usually timbered with steam-bent "juniper" laths fastened to the shell of planks with common round galvanized nails. Their hulls are caulked with oakum.

As its name implies, the speedboat is powered by a large (20-25 horsepower) outboard motor which propells the craft at a much higher rate of speed than motor boats or rodneys can achieve. This boat's broad, relatively flat bottom and shallow keel form a planing hull which, when pushed by sufficient horsepower, can skim over the surface of the water with little resistance. Because of this hull configuration, the speedboat represents a

Fig. 31: A typical speedboat. The letters on the bow do not signify the name of the boat, they are the initials of the craft's owner (Charles Coates).


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revolutionary departure from local, traditional design. That is, because it is a planing hull craft, in no way can it be considered an evolutionary extension of earlier displacement hull forms (e.g. the motor boat and the rodney) built in the community.

Although, from the viewpoint of form, the planing hull of the speedboat is of a vastly different order from the displacement hull of motor boats and rodneys, other features, such as the internal division of the hull into "rooms" and the use of the sculling oar, are the same. It is this sort of overlapping of tradition which demonstrates that, especially during the early stages of the use of an innovation (in this case a new hull form), change is very gradual, with traditional ideas playing an important role in determining its development.[98]

We can gain further insight into the process of change in objects of material culture by analyzing the ways in which boatbuilders have gone about interpreting the new hull form. Although all speedboats in Winterton display the basic characteristics listed above, within

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[98]Ole Crumlin-Pedersen makes the same point when discussing the juxtaposition of traditional forms and new construction materials in Norway. See Ole Crumlin-Pedersen, "Skin or Wood: A Study of the Origin of the Scandinavian Plank Boat," in Ships and Shipyards, Sailors and Fishermen, Olof Hasslöf, Henning Henningsen and Arne Emil Christensen, Jr., eds. (Copenhagen: Copenhagen University Press, 1972), pp. 208-234.

the parameters of this general form, considerable variation, from boat to boat, is apparent. The level of intra-type disparity in the speedboat class is far greater than the older boat classes. This high degree of variation is indicative of the newness of the innovation. As they endeavour to adapt the new hull form to the local environment, use requirements, available construction skills and materials, boatbuilders experiment with the hull form. Because, in these early stages, various boatbuilders attempt different solutions to problems of design, a good deal of dissonance of form is apparent. Presumably, however, after a sufficient amount of time has elapsed, within which boatbuilders have experimented with a large number of variations in form, the level of intra-type differentiation will appreciably decline and, as with the older types, local speedboat design will exhibit more harmony from boat to boat.

In regard to ease of construction, speedboats differ substantially from motor boats and rodneys. Speedboats require considerably less boatbuilding expertise, which is due, principally, to two factors: (1) speedboat hulls contain fewer reverse curves than motor boats or rodneys; and, (2) the use of steam-bent laths, instead of sawn timbers, greatly simplifies the timbering process.

Because they are fast boats which can be built with a minimum of boatbuilding skill, the number of speedboats built in Winterton has increased in recent years. They have gained particular popularity among individuals who participate in winter-time "sporting" activities on Trinity Bay, such as bird hunting and seal hunting. Speedboats are also used by part-time fishermen engaged in the cod and squid fisheries.[99] Mainly because they feel that the speedboat's planing hull form lacks the seaworthiness of the displacement hull form, full-time commercial fishermen rarely use them for fishing. Not bothering to conceal their general disdain for the craft, these men regard the speedboat as a craft good only for "sporting about" on calm days, never as a bona fide fishing boat. Fisherman/boatbuilder Lionel Piercey's opinion of speedboats (flats) is typically unequivocal:

> They're no good. Yes, they're good enough for going out here [and] just speeding about when it's civil, but I guarantee, [that if] you get in a hard time with them flats, you'll have a hard time.[100]

Two Extinct Types: The Baccalieu Skiff and The Bully

Thusfar, I have discussed only those boat types which are presently built and used in Winterton, however,

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[99] The availability of a bounty from the provincial Fisheries Loan Board in the amount of 35% of the cost of the hull have made these boats quite accessible to part-time fishermen.

[100] From my March 29, 1979 interview with Lionel Piercey, MUNFLA accession number C4443.

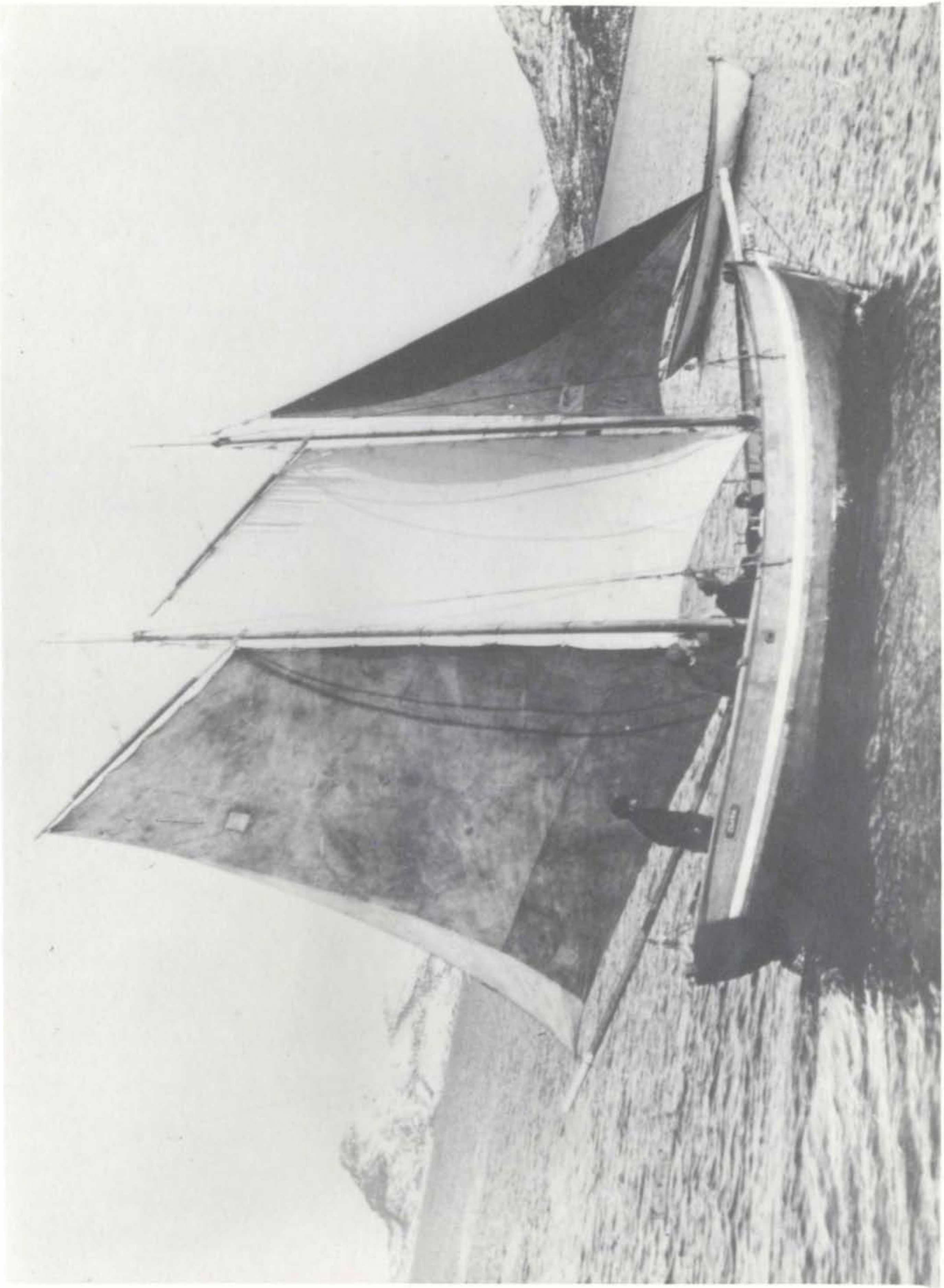
in order to provide information which may shed additional light on the history of boat building in the community and on the evolution of contemporary craft, I will describe two more Winterton craft, both of which are now extinct.

The Baccalieu skiff and the bully are boat types which have not been seen in Winterton for thirty years or more, and, aside from a few grainy photographs, little physical evidence remains of these once numerous types. However, by piecing together the oral accounts of these vessels from the reminiscences of some of the community's oldest citizens, it is possible to come up with what are probably reasonably accurate descriptions of them.

The Baccalieu skiff, apparently the older of these two types, was, according to most accounts, an undecked vessel of approximately twenty tons which ranged in length from 35 to 45 feet. It was usually a two-masted schooner-rigged vessel which also carried long spruce oars which were used in the absence of wind. Although it is a photograph which was not taken in Winterton, Fig. 32 shows a vessel which, say my informants, bears a strong resemblance to the Baccalieu skiff.

This type of craft was used in the once-thriving cod fishery at Baccalieu Island, located some 27 miles northeast of Winterton at the entrance to Trinity Bay. When participating in this fishery, these vessels generally

Fig. 32: The schooner-rigged vessels called Baccalieu skiffs probably looked a good deal like this craft. (Newfoundland Provincial Archives Photo B4-103-VP-3974).



carried a crew of five men. They also carried a pair of 14-16 foot rodneys. Upon reaching the cod fishing grounds in the vicinity of the island, the skiff would be anchored and the rodneys would be deployed. Two men would fish in each rodney, and the remaining member of the crew would stay aboard the skiff and either fish, or salt the catches of the others. At the end of each day, the men in the rodneys would return to the skiff. After one, sometimes two, weeks of fishing from the "floater," as the anchored skiffs were sometimes called, the skiff and its entire crew would return to Winterton where the catch would be unloaded. Then, after a short lay-over, they would return to Baccalieu Island for more fish.

This vessel was probably the precursor to the other extinct Winterton boat type: the bully, or bully boat. Bullys ranged in length from 30 to 40 feet and probably had a hull shape similar to that of the Baccalieu skiff. Like the Baccalieu skiff, bullys were rigged for sail, but accounts differ as to the nature of the rig. Some have said that they were schooner-rigged, but one informant recalled that they were rigged with a jib, a foresail, and a spanker (set well aft).[101] Despite possible similarities in hull form or sail plan, bullys differed

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[101]From my March 29, 1979 interview with Fred P. Hiscock, MUNFLA accession number C4633.

from Baccalieu skiffs in two very distinct ways: they had decks, and, more significantly, they had 5-10 horsepower gasoline engines. The fact that they were engine powered suggests that this type of craft came into existence around Winterton c. 1920. Bullys, like Baccalieu skiffs, were used in the Baccalieu Island cod fishery.

Summary

The environment, cultural preference, economic pressures, and new forms of technology are all factors which can exert strong influences on the evolution or non-evolution of an object of material culture. In the case of the boat types of Winterton, we have seen that two technological innovations -- the internal combustion engine and the planing hull -- have had a strong impact on the way in which boats are designed, constructed and used. Of these two innovations, the gasoline engine has had, unquestionably, more impact. In fact, its introduction has probably been the most galvanic change in the history of the community's boatbuilding tradition. Prior to the introduction of the gasoline engine, a rather harmonious relationship existed between the rodney, the bay punt and the big punt. All three were propelled by sails and oars, and all three had hull forms which were proportionally alike. However, with the arrival of the gasoline engine, this harmonious relationship ceased. The rodney and the bay punt continued to be propelled by sails and oars, but the big punt acquired an inboard engine, as well as a new name: "motor boat." No longer dependent on sails and oars (although they were still carried), motor boats became larger, for more capacity, and the stern shape was changed to better accommodate the new form of propulsion. Meanwhile, the rodney and the bay punt remained basically the same, until the introduction of the outboard motor around 1950. This innovation, combined, in later years, with the planing hull, eventually sounded the death knell for the bay punt. The bay punt has been almost entirely replaced by the faster, more easily constructed speedboat as the craft used for winter hunting activities on the Bay. The rodney type, however, does not appear to be in any immediate danger of being replaced. Although they have undergone minor changes, rodneys still retain the seaworthy hull form which made them able vessels in the past; a well-tested form which will probably guarantee their usefulness to single-handed fishermen for some years to come.

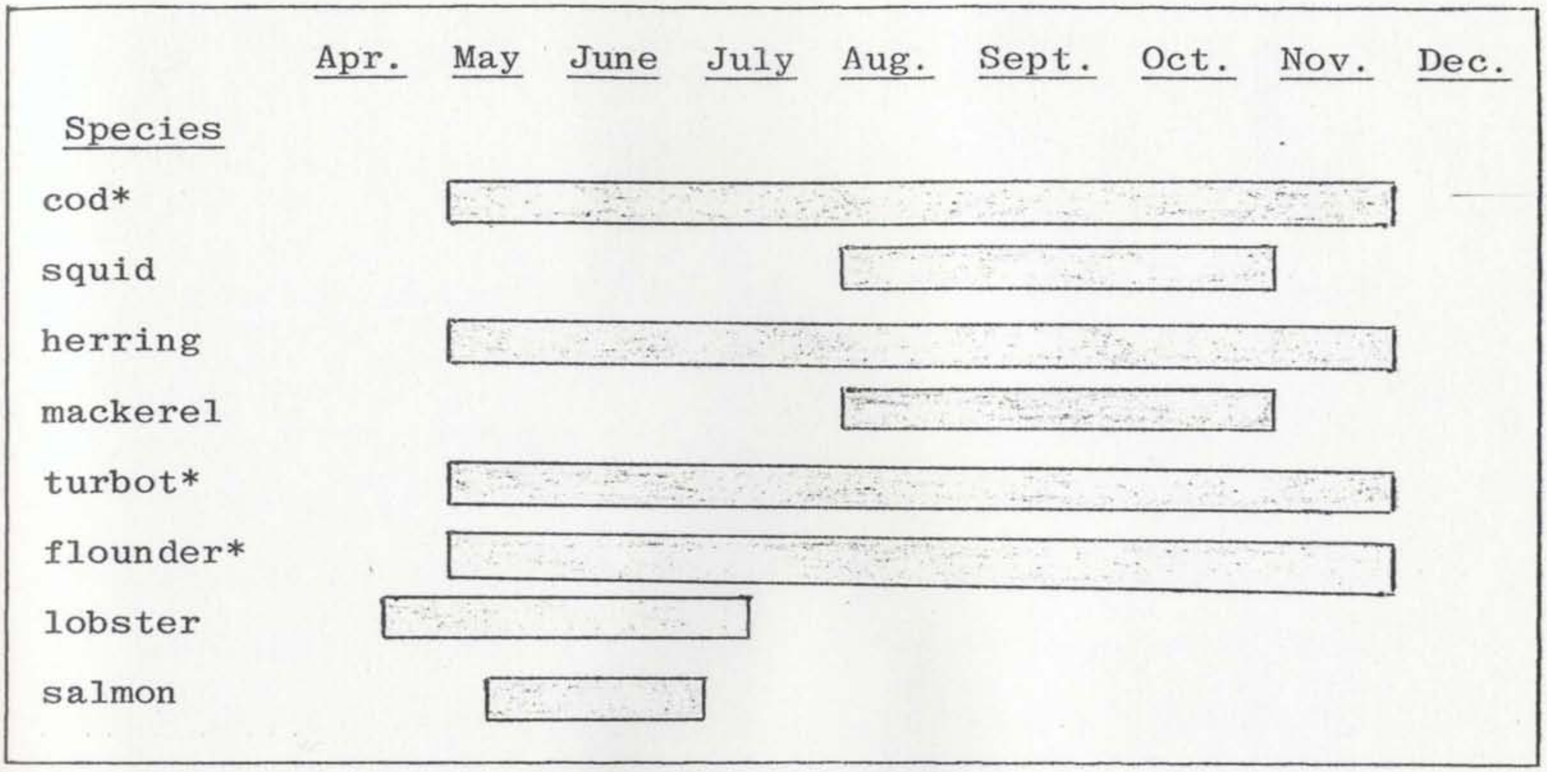

Fig. 33: Species of fish caught by Winterton fishermen and the time of the year they are landed (species listed in order of total annual landings).

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*Cod and other groundfish (i.e. flounder and turbot) have a de facto double season. These species are fished for in shallow water with cod traps and gill nets from May until August, or until catches begin to fall off. Then, from August, generally, until the end of November, they are pursued in deeper water with hand lines, ground trawls, and a few gill nets.

V

DESIGN

> Design is the process of inventing physical things which display new physical order, organization and form in response to function.[102]

The question of design is a fascinating aspect of the study of traditional boatbuilding, and it is a topic which must be investigated if one's aim is to obtain a full understanding of the activity. But what is meant by the term "design," and how can this definition be applied to boatbuilding in the town of Winterton?

For a working definition of design, I have turned to the one espoused by Christopher Alexander which is given above. In his probing essay Notes on the Synthesis of Form, from which this definition is taken, Alexander exhibits considerable insight as he discusses his views of the concept of design; views which have great applicability to the study of boatbuilding, as well as other aspects of material culture.

At the start of this chapter I will set down the theoretical framework that I have employed in my analysis of boatbuilding design in Winterton, then, in the remainder

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[102] Alexander, Notes on the Synthesis of Form, p. 1.

of the chapter, I shall attempt to support the applicability of these theories by providing detailed descriptions of many facets of the design process used by Winterton builders.

The Concepts of Selfconscious and Unselfconscious Cultures

The avenue by which I have chosen to approach the nature of design involves the analysis of certain characteristics of a culture which relate to the design traditions of that culture. Although it is a construct that can be criticized for being too dichotomous, I have elected to employ Christopher Alexander's theory of selfconscious and unselfconscious cultures for the purpose of this discussion.

Adopting a Redfieldian model,[103] Alexander places cultures in two distinct categories: selfconscious and unselfconscious. In regard to design, Alexander identifies unselfconscious cultures by the following characteristics:

(a) little thought about design or architecture, as such;

(b) a right way and a wrong way of doing things, but no general governing principles;

(c) specialization of any sort is rare (for example, there are no designers, in the formal sense);

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[103] For an elaboration of his model of the "folk-urban continuum," see Robert Redfield, The Folk Culture of Yucatan (Chicago: Univ. of Chicago Press, 1941).

(d) lack of written records or architectural drawings nearly preclude the possibility of perceiving variety of experience (i.e. other ways of doing things);

(e) design decisions are made according to custom more than to the original ideas of any individual (i.e. little value attached to inventiveness); and,

(f) ritual and taboo discourage innovation and self-criticism.

Selfconscious cultures, on the other hand, are characterized by features which are diametrically opposed to those of unselfconscious cultures. That is, in selfconscious cultures:

(a) thought <u>is</u> accorded to design and architecture;

(b) design <u>is</u> governed by general principles;

(c) occupational specialization <u>is</u> common;

(d) written records, architectural drawings and other communicative media which allow for the dissemination of design alternatives <u>are</u> available; and,

(e) design decisions <u>are</u> often made as a result of an individual's original ideas (demonstrating that innovation <u>is</u> encouraged).

In using the constructs called selfconscious and unselfconscious culture, Alexander makes no pretext about the arbitrariness of such a division, and neither do I. Just as Redfield has made arbitrary divisions in order to explain the differences between various communities on the

Yucatan peninsula of Mexico through the use of a folk-urban continuum,[104] and Radcliffe-Brown has made arbitrary divisions to explain the importance of kinship in "primitive" and "less primitive" cultures,[105] similarly, I have found it useful to make an arbitrary division between cultures which are selfconscious about the design of objects and cultures which are relatively unselfconscious about the design process in order to draw attention to certain characteristics which are distinctive of the design of boats in Winterton.

Learning

A logical starting point toward the understanding of how boats are designed and built in Winterton is in the area of education: How does one learn how to build boats?

All of my informants in Winterton told me that they learned about boatbuilding from their fathers, other male relatives, or male neighbors. The following excerpt from an interview with boatbuilder Herbert Harnum is typical of the responses I received when I asked the question: How did you learn about boatbuilding?

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[104] Redfield, The Folk Culture of Yucatan.

[105] A.R. Radcliffe-Brown, "The Mother's Brother in South Africa," South African Journal of Science, 21 (1925), 544-545.

> Well, my father was building boats and I was there, I was around, holding the plank [for him], [and] getting an idea of what was going on . . . . There was so much you had to do, we'll say. You know, he'd tell you to do this and show you how to do it and [you'd] pick it up from that.[106]

For the most part, my informants' descriptions of their initial learning experiences in the area of boatbuilding

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For the most part, my informants' descriptions of their initial learning experiences in the area of boatbuilding indicate that learning was largely by example, with a minimum of verbal interaction, as Herbert Harnum explained, ". . . he'd tell you to do this and show you how to do it and [you'd] pick it up from that." Boys learned about how boats were built by watching their fathers (or other men) and by assisting them. At first, they helped by performing simple tasks, such as holding plank ends, but as they grew older they acquired more advanced skills, again, largely through observation and imitation. This sort of training procedure was very informal. Boatbuilding knowledge was passed on by word of mouth and by example, without the use of written records. By asking boatbuilders to name their principal "teachers," it is possible to trace the lines of passage of traditional knowledge. Fig. 34 clearly shows the importance of kinship ties and also reveals some of the men who have been key figures in the perpetuation of

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[106]From my August 15, 1979 interview with Herbert Harnum, MUNFLA accession numbers C4636, C4643.

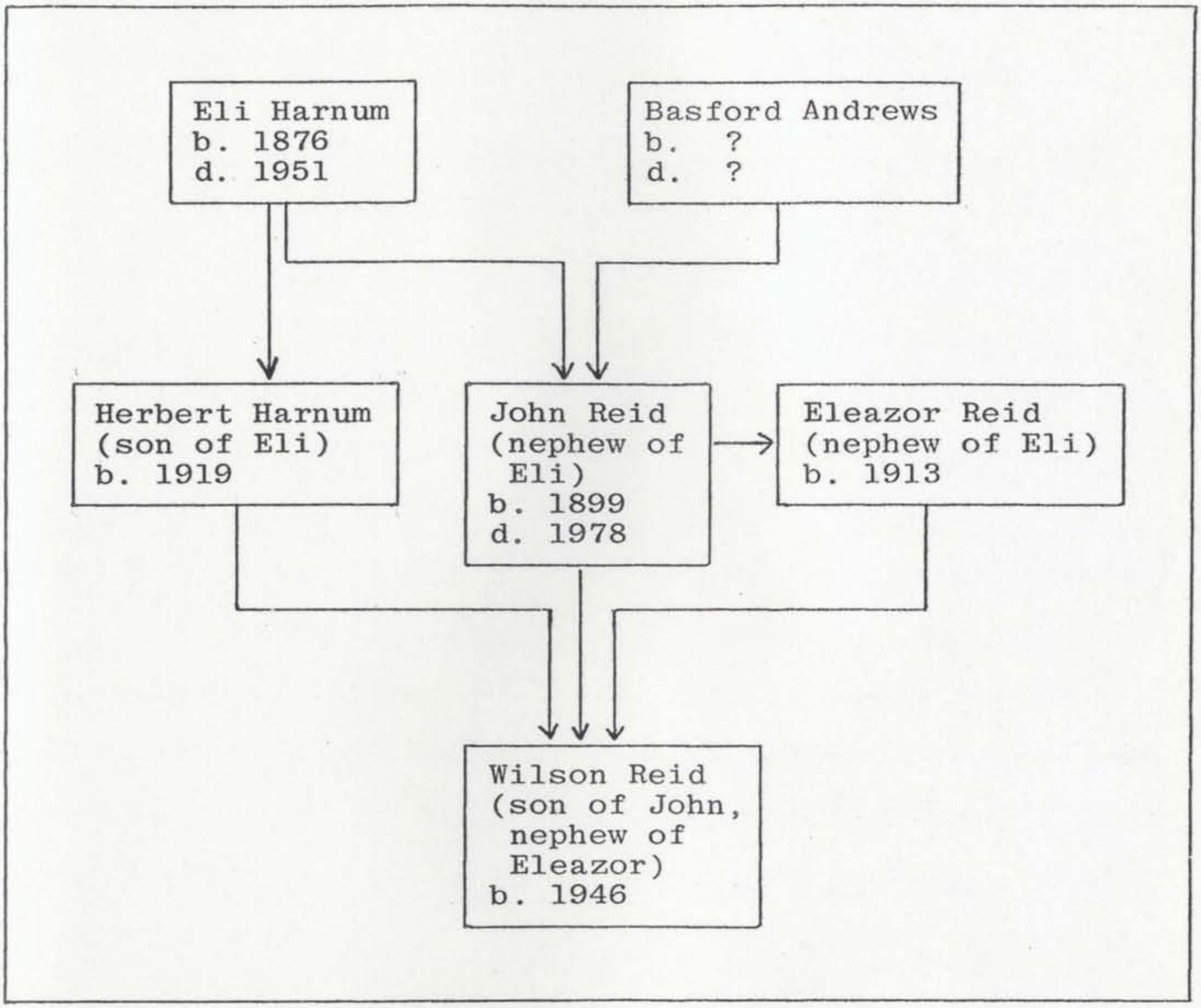

Fig. 34: Major lines of passage of traditional knowledge.

boatbuilding knowledge in the community over the last three generations.

Designing with Moulds and Models

When designing a boat to be built, Winterton builders do not, ordinarily, formulate unique, original designs. Instead, they rely on a body of traditional knowledge which either dictates proper design decisions or at least facilitates decision making. Figuratively speaking, it is this body of knowledge that allows boat-builders to stand on the shoulders of their predecessors.

Winterton boatbuilders receive a large measure of their design heritage in the form of wooden moulds which are used, in various ways, to derive the shapes of boat hulls. It is common for these moulds to be passed on, through the generations, from father to son. It is also common for builders to lend their moulds, or to make copies of their moulds for others.

The term "mould," as it is used in contemporary boatbuilding manuals, is generally defined as one of several full-scale wooden shapes, or patterns, which are set up on the keel as a means of creating the desired hull form prior to planking. In Winterton, however, the term has at least three different definitions: (1) a wooden, three-piece adjustable template used to draw the shapes of the three principal timber pairs; (2) non-adjustable, full-size wooden patterns used to draw the shapes for the three principal timber pairs and the counter; and, (3) non-adjustable, full-size wooden patterns which are used, in conjunction with ribbands, to approximate the shape of the hull before the insertion of steam-bent timbers.

Three of my informants, Marcus French, Chesley Gregory, and Lionel Piercey, use three-piece adjustable templates which they inherited from their fathers. Referred to collectively as "moulds," the three pieces consist of: a small, rectangular piece called the "rising square"; a narrow piece, in the shape of a sharp curve, called the "half bend"; and, an unnamed third piece in the shape of a gradual curve. All three pieces are made of wood about one-half inch thick, and each corresponds to a specific area of the hull. The rising square corresponds to the keel of the boat to be built, and has the same width as the keel. The half bend corresponds to the section of the hull from the "crop of the bulge" to the "sheer." The remaining mould piece corresponds to the section of the hull between the "crop of the bulge" and the keel. (Figs. 35 & 36)

Inscribed on each mould piece are lines called "sir marks" which refer to specific transverse sections, or timbers, of the boat, including the fore hook, the midship bend and the after hook. When the three mould pieces are brought together with sir marks properly alligned, the

Fig. 35: Three-piece adjustable moulds used by Chesley Gregory. In this photo they are set up in the shape of the midship bend of a 16' rodney.

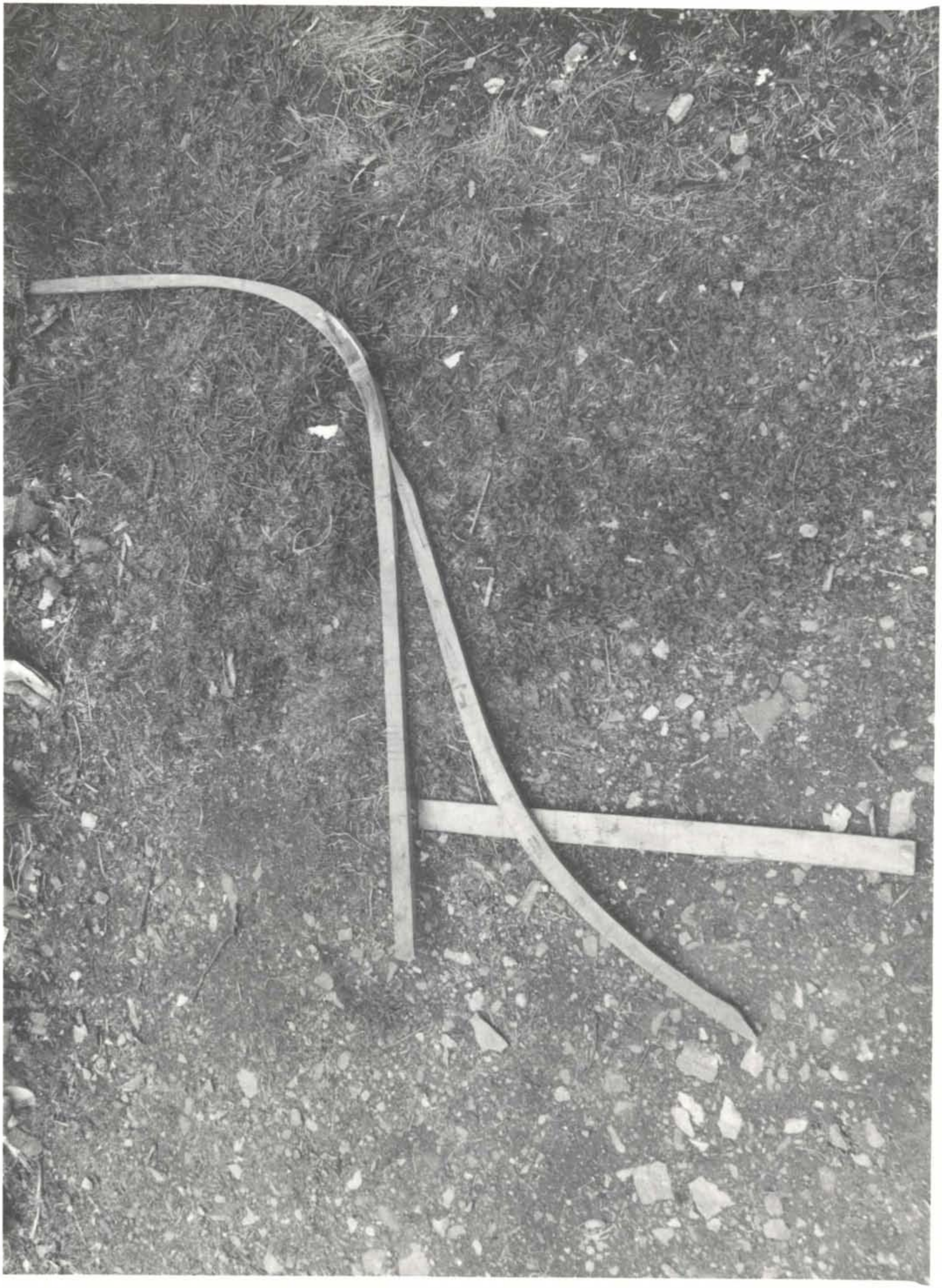

Fig. 36: Detail of Chesley Gregory's moulds. Note the allignment of the midship bend (M.B.) "sir marks."


MB
AP

shapes of the various timbers can be formed, individually. These shapes are traced onto the timber stock and then cut out to form the timbers. (Fig. 37)

Although it is not a label that is used by the men who employ this system, the term "adjustable template" is especially appropriate for this device. As we have seen, these three pieces of wood are manipulated to derive the shapes of the timbers of a boat, but, in addition to this, further adjustments enable the builder to obtain the timber shapes of boats of various sizes. By changing the size of the rising square to match the keel size of the desired craft, by increasing or decreasing the width and height of the two curved pieces, and by increasing or decreasing the distance between the principal timbers (when they are placed on the keel), boats of various lengths can be designed.

Acknowledged by Winterton builders as the oldest designing system known in the community, the three-piece adjustable template method was originally used by builders to "mould out" all of the timbers of a boat prior to the assembly of the backbone unit (stem, keel, sternpost and deadwoods). Because the use of this method freed the builder from the necessity of making individual measurements in order to determine the shapes of most of the timbers, it was, potentially, a great time-saver. However, probably

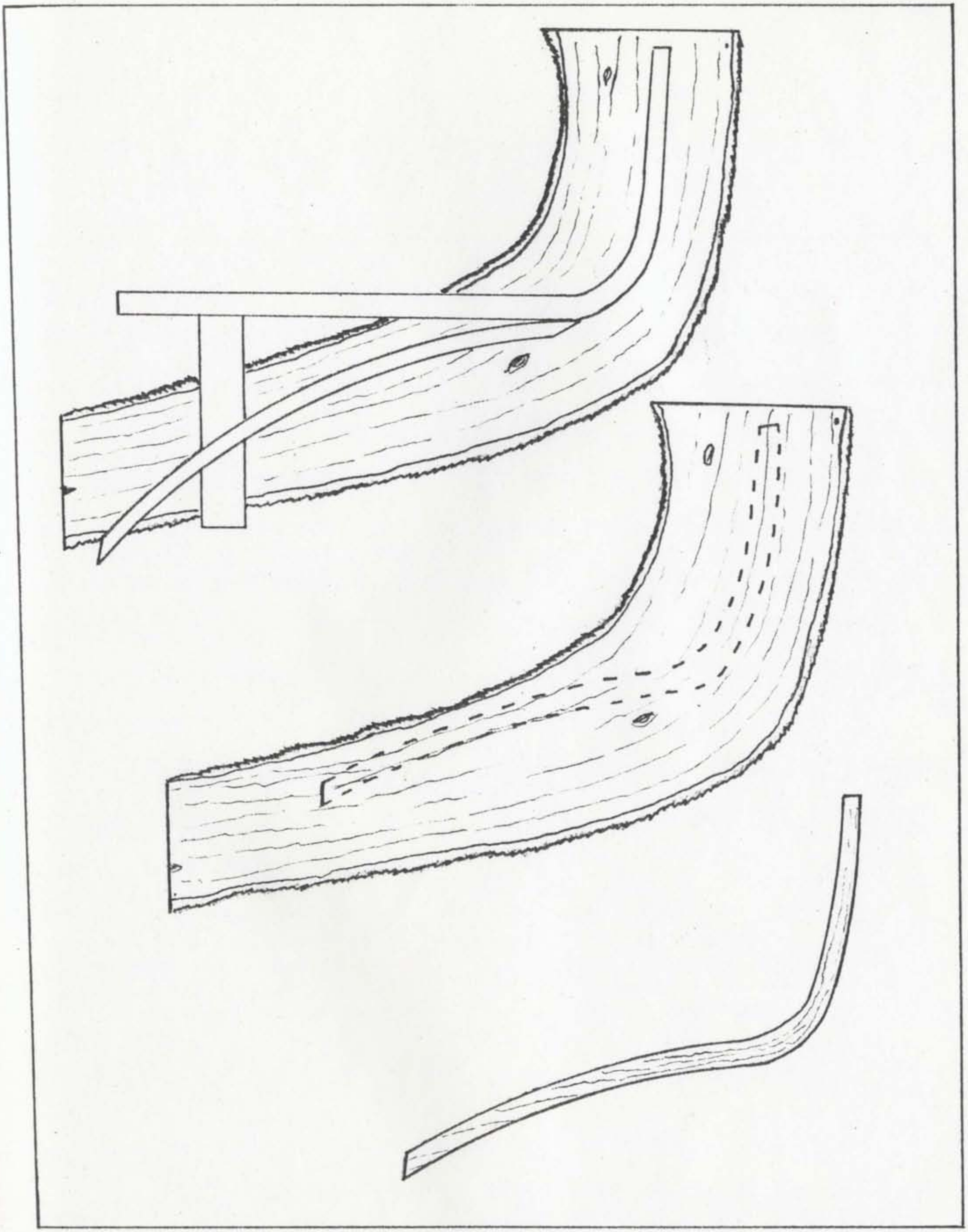

Fig. 37: The use of a three-piece adjustable mould. Top: mould placed on plank stock. Centre: timber shape traced onto stock. Bottom: finished timber.

due to the inability of present-day builders to accurately interpret the sir marks, currently no one in Winterton uses the three-piece adjustable template in the original fashion. Instead of using them to describe all of a boat's timbers, the templates are now used only to form the shapes of the three principal timbers: the fore hook, the midship bend and the after hook. After these timbers have been installed on the keel, ribbands running from stem to stern are tacked to them in horizontal rows in order to approximate the shape of the eventual hull. The shapes of the remaining timbers are determined by taking measurements from the center of the keel to the ribbands, or by pressing flexible lead rods or copper tubing against the ribbands at the proper locations.[107]

The comments of retired fisherman/boatbuilder Fred P. Hiscock show how this design process has changed during his life-time:

> . . . There was fellas here who used to mould out every timber [that] went in her before they put down one . . . . They used to mould out all their timbers, throwed them in a pile, and when they put the three frames across [they'd] take all the timbers and put them in their place. You know, I call that fellas who used to build <u>with</u> the mould. But to only put

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[107]Chapelle notes that this partial use was common as early as the sixteenth century. See Howard I. Chapelle, <u>The Search for Speed Under Sail, 1700-1855</u> (New York: W.W. Norton, 1967), p. 16.

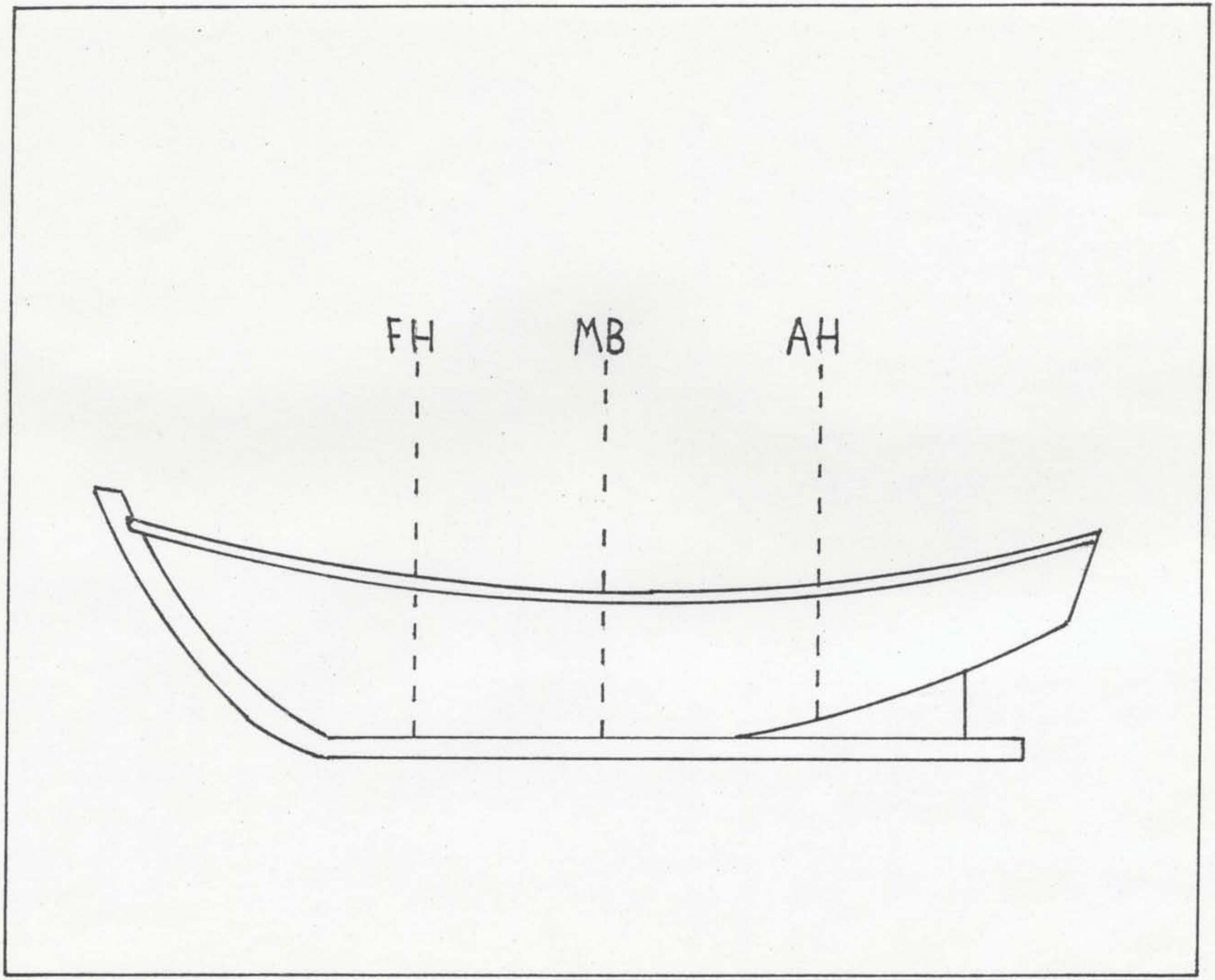

Fig. 38: Approximate locations of the three principal timbers. FH = fore hook, MB = midship bend, AH = after hook.

> down three frames with the moulds -- you're not building with the mould . . . . There was a man here by the name of Uncle Sammy Anderson, he used to mould out all the timbers in his rodney and have them all throwed there in his store in a pile, and when he got them all done out he'd put them all in their place . . . . He'd mould out every timber in his boat, whether it was 15 or 20 pairs, [and] put them all down and there wouldn't be a hump on one.[108]

Although Winterton builders are not aware of it, the three-piece adjustable template that some of them use can be traced to a very old designing practice called "whole-moulding." Maritime historians have written that this method of design was employed by English shipwrights in the sixteenth, seventeenth and eighteenth centuries and was

> . . . an elaborate designing system based on the arcs of circles. Ships were designed for the most part from plans, or "draughts," not as complete as today's plans, to be sure, but complete enough to guide the construction of a vessel. The plans usually consisted of an outline of the stem, keel and sternpost of the vessel and several transverse "sections" including the transom. The meat of the design lay in the four longitudinal lines called "narrowing" and "rising" lines. These determined the points of maximum breadth and the contour of the bottom, and thus whether the boat would be wide or narrow, fast or slow, heavy or light. Easy, flat rising and narrowing lines made for a fast vessel of light capacity. More contour to the lines resulted in more capacity at the expense of speed. All these lines were drawn as arcs or sections of arcs, using a compass or trammels, and usually resulted in local "unfairness" in the ends of

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[108] From my March 29, 1979 interview with Fred P. Hiscock, MUNFLA accession number C4633.

> the vessel where they came together in one area and didn't lead smoothly into one another. Since the frames and molds for the vessel were made directly from the plan, not lofted full size, these uneven areas were usually faired by the shipwright with his adz. This was possible because of the massive timbers used in building the boat.
>
> . . . For small hulls the [American] colonial boatbuilders used a technique called "whole moulding." This employed three battens, two curved and one straight, called the "body mould," the "hollow mould," and the "rising square." These were shifted around to specify the shape of the hull at each section. This was usually done right on the site: the frames were made from the moulds and placed directly on the keel. Once again, there were always problems with fairness at the ends of the boat, and again, enough wood for the boatbuilder to fair up with his adz.[109] [emphasis added]

Chapelle has written that whole-moulding was in use in England "as late as 1727 and was employed in small-boat design even later."[110] How much later and where, he does not say. However, he goes on to identify the short-comings of this design system ("it could not produce a

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[109] David King and Lance Lee, Half-Modelling (Bath, Maine: Bath Marine Museum, 1976), pp. 4-5. Descriptions of the whole moulding system can also be found in the following: Westcott Abell, The Shipwright's Trade, 2nd ed. (1948; rpt. Jamaica, N.Y.: Caravan Book Service, 1962), pp. 32-92; William A. Baker, "Early Seventeenth-Century Ship Design," American Neptune, 14, No. 4 (1954), 262-277; Chapelle, American Small Sailing Craft, pp. 8-18; and Chapelle, The Search for Speed Under Sail, pp. 16-18.

[110] Chapelle, The Search for Speed Under Sail, p. 16.

fair form near the bow and stern")[111] and suggests that the system "did not survive"[112] because of these disadvantages. My research clearly shows that the system of designing called whole moulding did not die out in the eighteenth century, but has been practiced up to the present day by boatbuilders in Winterton and other Newfoundland communities.[113] The discovery of its continued use in Newfoundland is significant, as it provides an opportunity for scholars to gain insight into the Elizabethan system of designing ships and the method which may have been used by North American colonists to design small boats.

Moulds of a different sort are used by Winterton boatbuilder Eleazor Reid. His moulds are not adjustable in the style of the three-piece moulds used by French, Gregory, and Piercey, but are, instead, individual, full-size patterns for the shapes of the three principal timbers and the counter. (Fig. 39) He obtained his moulds from his oldest brother, John, who based them on shapes originally

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[111]Chapelle, The Search for Speed Under Sail, p. 16.

[112]Chapelle, The Search for Speed Under Sail, p. 16.

[113]Data contained in Hilda C. Murray's unpublished paper "Fishing Boats in Elliston, Trinity Bay," as well as information which I have collected through the use of a boatbuilding survey questionnaire (Appendix A) indicates that the use of this system of design is not restricted to Winterton.

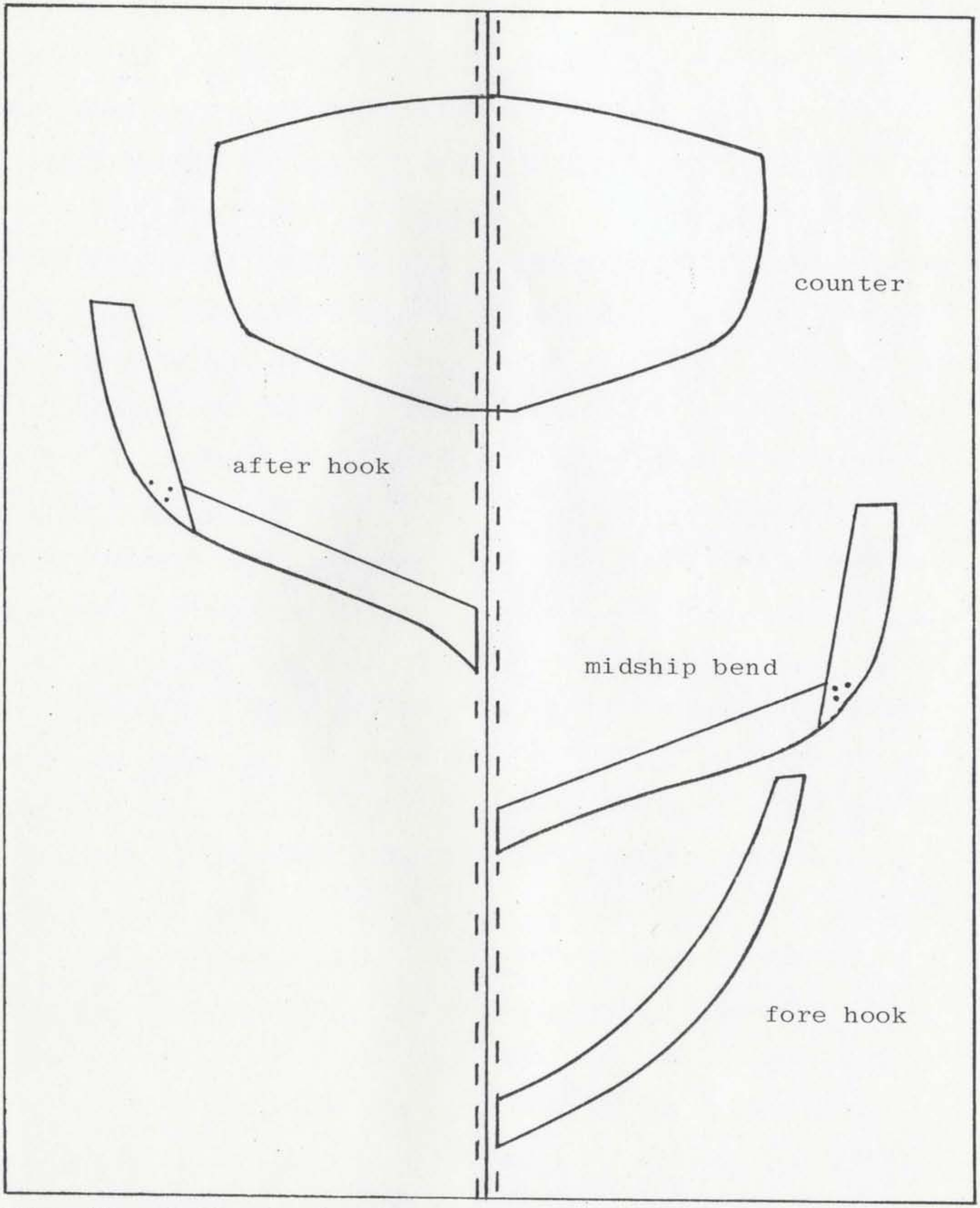

Fig. 39: Full-sized patterns for fore hook, midship bend, after hook, and counter similar to those used by Eleazor Reid.

derived with a three-piece adjustable template. The moulds for the three principal timbers are made of wood, and describe the shape of one-half of each timber pair. Since the boat is bi-symmetrical this is all that is necessary. The counter mould is made of cardboard and represents one-half of the counter. As with French and Piercey, Reid uses his moulds to trace the shapes of the three principal timbers onto his stock. Then, when the backbone assembly has been joined together ("scarphed") and leveled in floor blocks, the three frames that have been shaped with the moulds are put in place on the keel. Next, ribbands are attached and the remaining timber pairs are shaped through the use of measurements and/or by eye.

I have included the mould shapes that Reid used in the design and construction of a 21' 3 3/8" (LOA) motor boat that was completed in 1977. (Figs. 23 & 24) The use of these moulds, Reid maintains, is not limited to the construction of boats in the 21 foot range. He claims that through proportional expansion the moulds can be used to construct boats up to 100 feet. In order to preserve the basic shapes of the moulds, expansion takes place at only two spots: the sheer heights and the bottom (between the "crop of the bulge" and the keel). In addition to the expansion of the moulds, the distances between the mould stations must also be increased or decreased, depending on the size of the boat to be built. The feasibility of this approach is verified by the boats built by Reid's nephew, Wilson Reid. Using expanded versions of his uncle's basic mould shapes, Wilson has successfully constructed trap skiffs from 28-35 feet in length.

When Herbert Harnum uses the term "mould," he is referring to yet another form. Because he employs steam-bent timbers in the boats that he builds (as opposed to naturally-curved, sawn timbers), Harnum uses wooden patterns which represent the full breadth of the hull at the fore hook, midship bend and after hook. Used in conjunction with ribbands, they form a temporary hull shape into which the steamed timbers can be bent. Because they are not employed as direct patterns for the tracing of the three principal timbers, the moulds that Harnum uses are unlike the types mentioned thusfar.[114] (Figs. 40, 41 & 42)

Another, less common, design procedure used in Winterton is the method that was used by Fred P. Hiscock when he was an active builder. While the boats that he built were not unlike other Winterton-built craft, Hiscock's method of designing them was rather unique. Instead of

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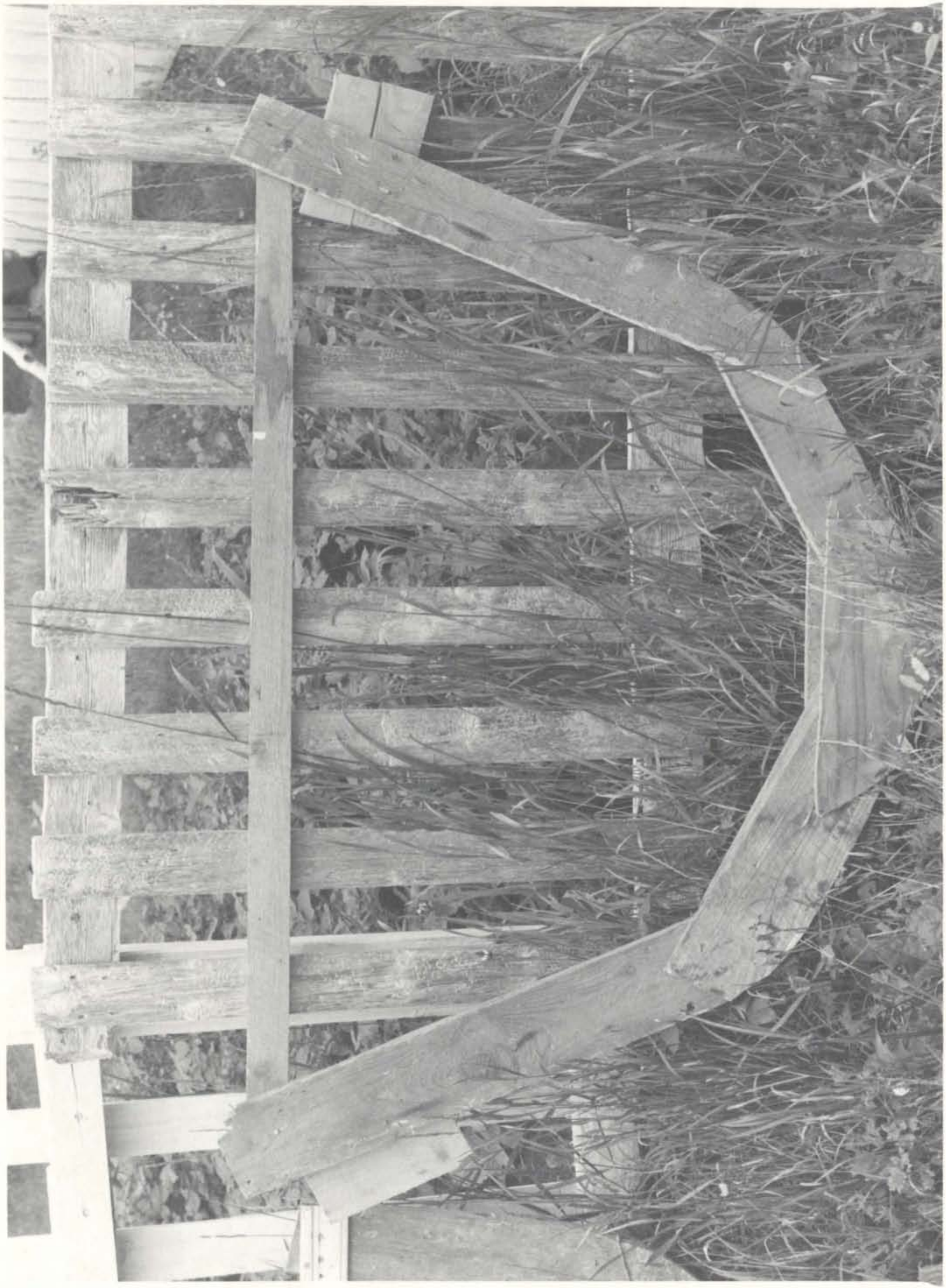
[114] It is noteworthy, however, that Harnum's father, Eli Harnum, used three-piece adjustable moulds. See my August 15, 1979 interview with Herbert Harnum (MUNFLA accession numbers C4636, C4643) for a discussion of Eli Harnum's design procedures.

Fig. 40: Mould of fore hook used by Herbert Harnum in the construction of a 16' 6" rodney/ speedboat.



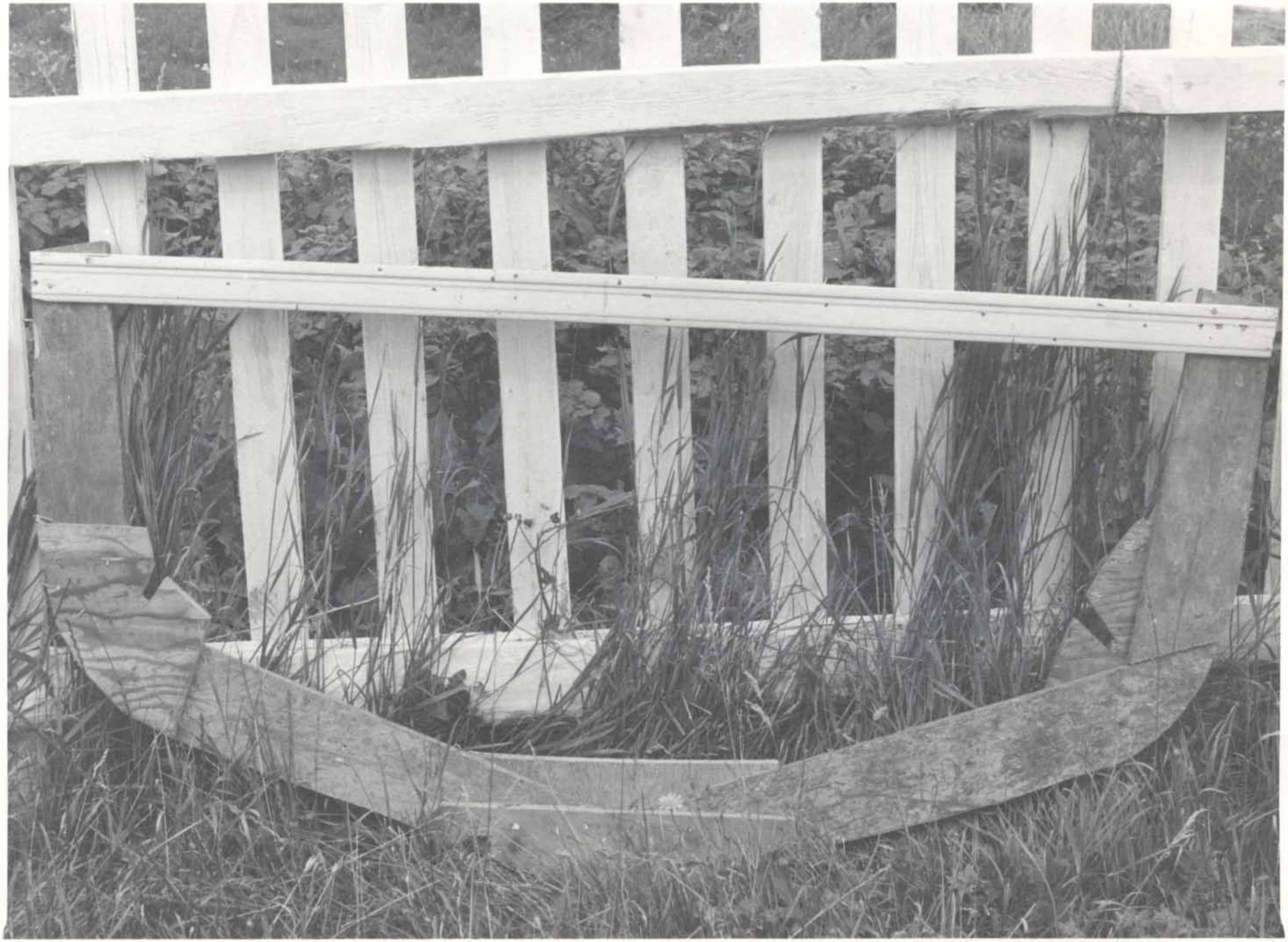
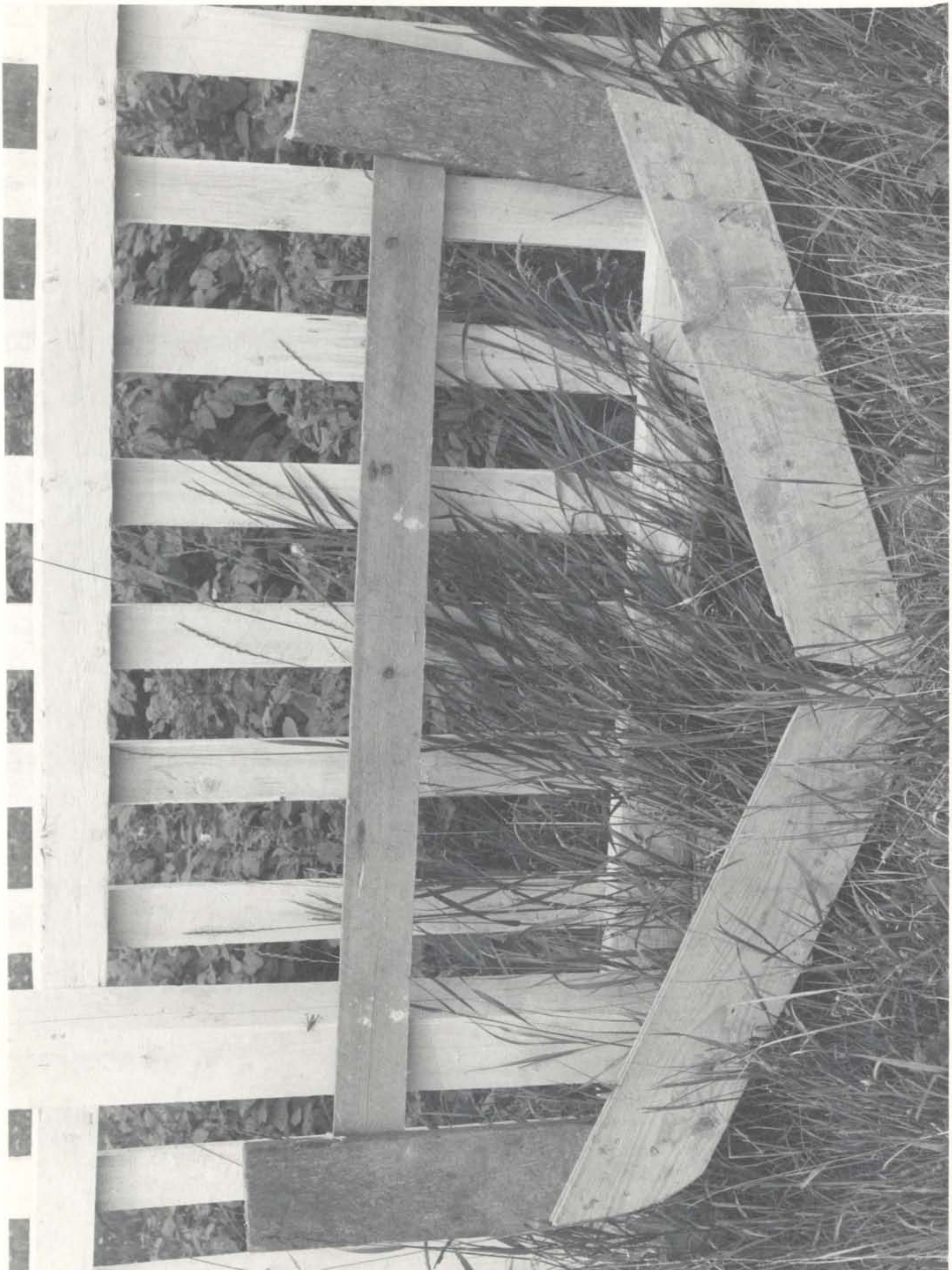


Fig. 41: Mould of midship bend used by Herbert Harnum for a 16' 6" rodney/speedboat.



relying on inherited moulds for design decisions, he took the boatbuilding knowledge that he had assimilated as a young man and formed the three principal timbers by eye. He describes the construction of his first boat:

> . . . I started and built one for myself, that's all. I went in the woods, I knows what to cut for a timber, what would make a timber, you know, 'cause I was after it before, we'll say, you know. But I never had no moulds. If I wanted my midship bend, we'll say, 6 feet wide, I'd make a batten six feet long. And if I wanted her 30 inches deep I got another little slip -- dressing out about 2 inches wide -- and put it across the floor . . . . I knowed what [shape] would make a midship bend . . . and I took some kind of circular piece of stuff then, and I marked off gradually, see, what I thought would suit the water, you know, and I made the three frames . . . . I never had no moulds . . . . I built seven, I think, motor boats, [and] I never had no moulds and there wasn't a bit of difference, and I never moulded one from the other . . . .[115]

Another design procedure which was available to Winterton builders in the past was the half-model. The half-model is a wooden scale model (usually 1/2" or 1" = 1'), which, when measured, yields the lines of the planned vessel. There are three basic methods that builders use to accomplish this. Some builders fashion the model out of a single block of wood and then saw it up into as many vertical slices as there are timber pairs. Then, by

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[115] From my March 29, 1979 interview with Fred P. Hiscock, MUNFLA accession number C4633.

expanding the measurements of these slices, the shapes of the full-size timbers are derived. Instead of sawing the model up into slices, another method is to use a thin lead rod to take impressions of the hull form at the various timber stations. Builders who use the third method of half-modeling start by pinning together horizontal layers of wood whose thicknesses are proportional to the waterlines of the planned vessel. The model is then fashioned from the block of pinned-together layers. In order to determine the shapes of the timbers, the layers are disassembled and measured, then expanded to full-size. (Fig. 43) The use of half-models (probably begun in England prior to 1700)[116] contained at least two major improvements over the use of the whole-moulding system. First, because all facets of the hull shape were represented in a model, the problem of how to complete the ends of the boat could be resolved ahead of time. Secondly, the model served as a tangible representation of a boat design which allowed the builder to view the planned vessel not as an abstract concept based on arcs, but as a three-dimensional object.

When questioned about the use of half-models in Winterton, all of my informants recalled that they had been used in the first quarter of the twentieth century by a

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[116] Chapelle, <u>The Search for Speed Under Sail</u>, p. 150.

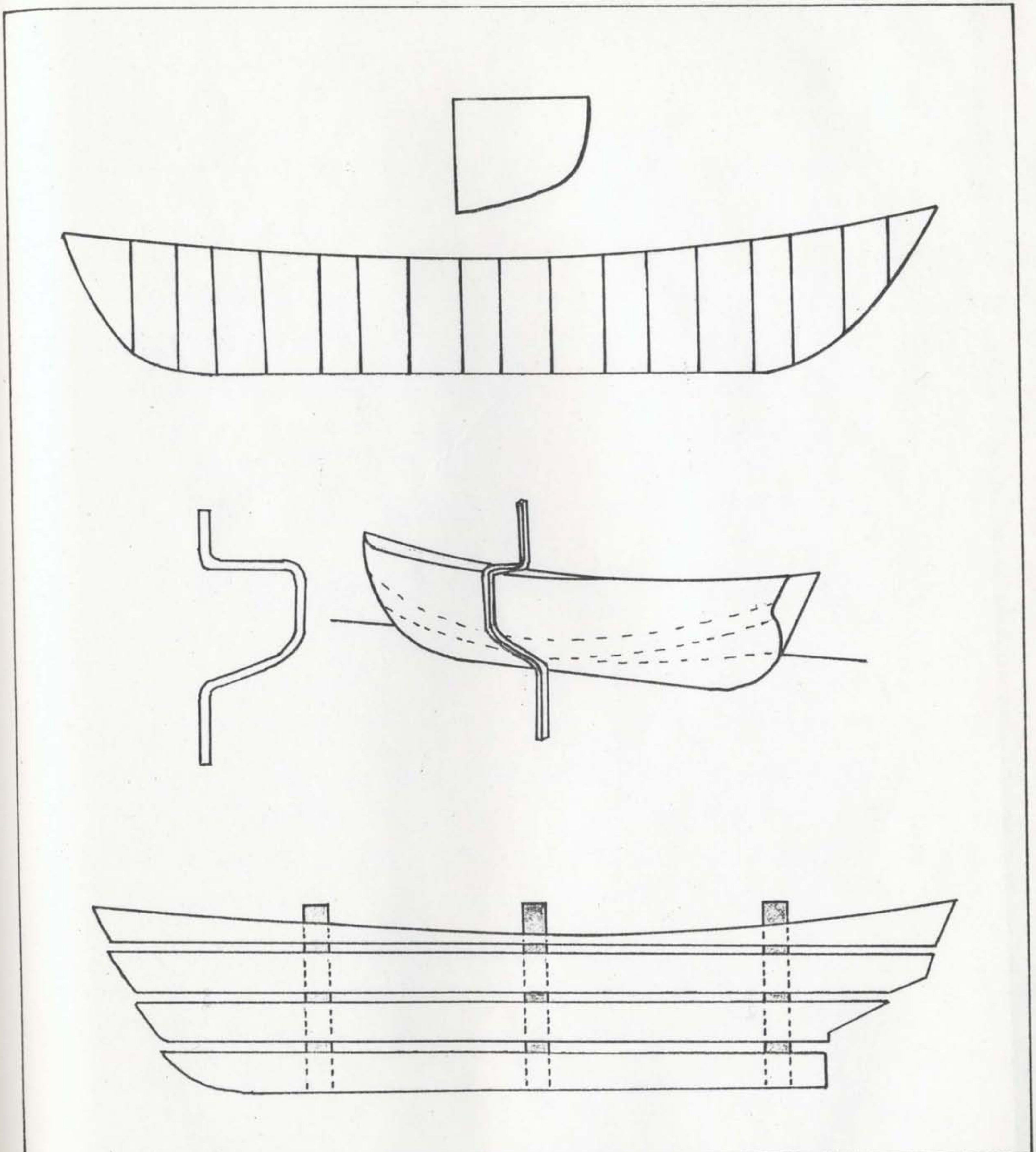

Fig. 43: Three types of half models. Top: solid block model cut into vertical slices (one for each timber). Centre: solid block model (timber shapes obtained with use of flexible lead rod). Bottom: layers of wood pinned together with dowells to form "lift" model (timber shapes obtained by measuring cross-sections of layers).

schooner builder by the name of Amos Piercey. However, they said that the use of half-models did not catch on with the majority of the builders of small, inshore fishing craft of Winterton. Fred P. Hiscock's responses to my questions about half-models were typical:

> Taylor: Did people ever use half-models?
>
> Hiscock: Well, there was an old schooner builder down here one time, he used to use them, he had the scale model; old man Amos Piercey.
>
> Taylor: Do you remember anyone using them for small boats?
>
> Hiscock: No, I don't know. I don't remember anyone using them for small boats, no. Now [there's a] little bit of figuring in that, you know, scale work, eh . . . you had to have a little bit of education for that.[117]

Another informant, Lionel Piercey, revealed that his father, William Piercey, had used half-models for the design of small boats. When asked why he hadn't learned how to work with half-models, Lionel replied that it was simply a technique that he hadn't mastered.

So, whatever the reason, Winterton builders did not elect to acquire knowledge of half-modeling, a design technique which may not have been particularly popular at any time during the history of the community. It is

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[117]From my March 29, 1979 interview with Fred P. Hiscock, MUNFLA accession number C4633.

interesting to note, however, that in the community of Bay de Verde, some thirty miles down the peninsula from Winterton, the technique of designing with half-models is still in use.[118]

Mental Templates

Another important aspect of the conceptual process involved in boat design is the use of non-physical patterns that exist only in the mind of the designer-builder: "mental templates."

In Winterton, once a builder has decided upon the type and size of the boat he will construct, one of his first activities is the selection of pieces of wood to be used for the major structural components of the craft. Since it is customary for builders to employ naturally curved pieces of wood for boat parts that require a curved shape (e.g. stem, sternpost, knees, timbers, and deadwoods), builders must become adept at "seeing" the shapes of these parts in standing trees. While mould shapes will guide them in the selection of timbers, builders have no such devices to assist them in choosing other boat parts; notably,

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[118]In May, 1979 I spoke with Wayne Noonan of Bay de Verde who was in the process of building a 30 foot trap skiff. He informed me that he had designed the craft with the use of a half-model which had been handed down to him from his grandfather. He confirmed this statement by showing me the model.

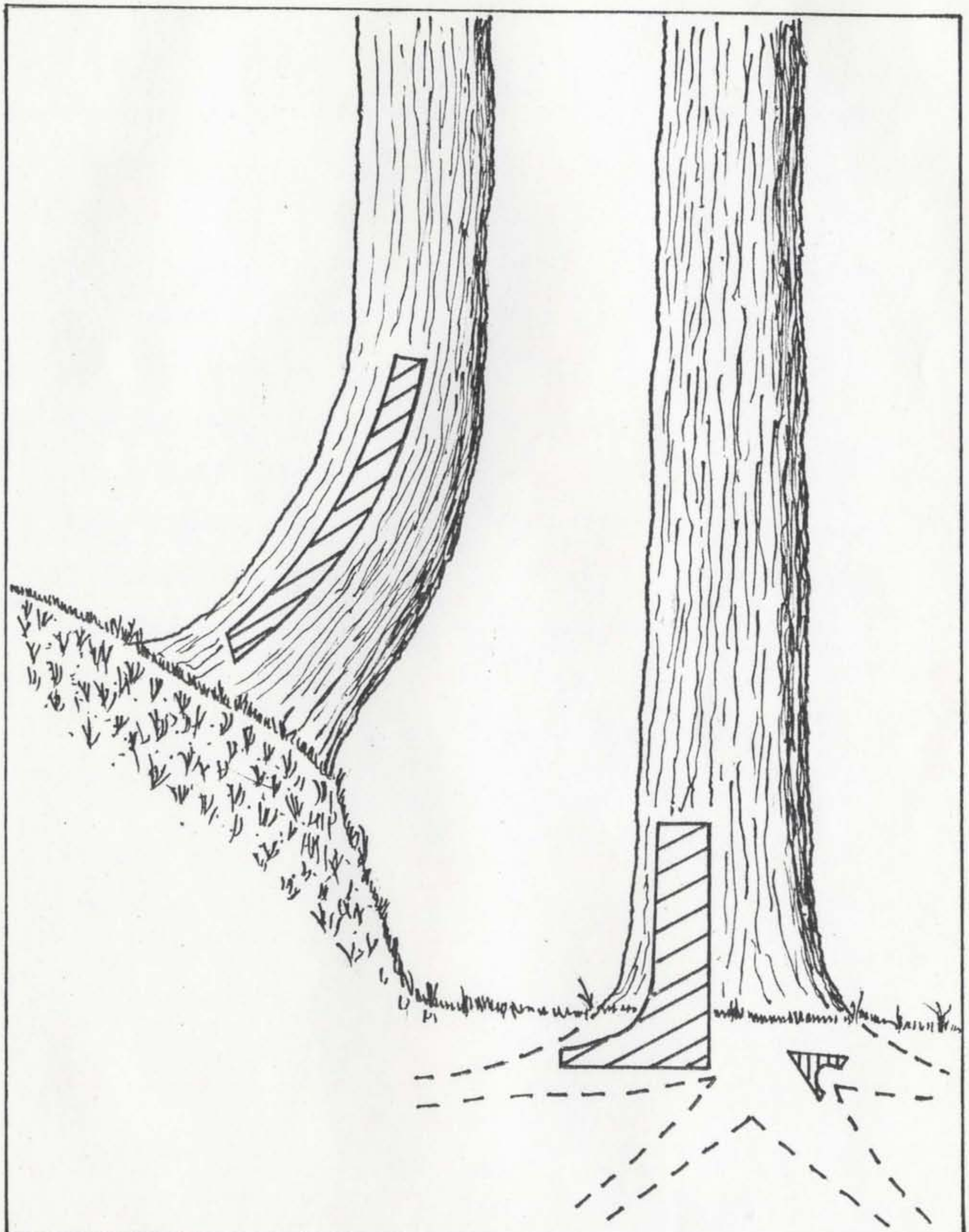

Fig. 44: The use of curved tree sections for boat parts. Left: stem. Centre: stern knee. Right: breasthook.

the stem and the sternpost. Consequently, it is not surprising to observe that the stems and sterns of boats -- unbound by the rigidity of a prescribed shape -- exhibit more variability, from boat to boat, than other component parts. However, while builders are not guided by physical patterns in the selection of stems and sternposts, it should be noted that they are guided by a general notion of what is correct, what looks right, what will "answer" to the shape of the planned vessel.

Here two of my informants discuss the selection of trees which contain the proper shapes for boat parts. First, Lionel Piercey:

> Taylor: Were there certain shapes you looked for in trees?
>
> Piercey: Oh yes, oh yes. It wasn't all, it wasn't only going into the woods and cutting a crooked stick, you know. It had to be right, you know, [it had to] come down with a little bit of hollow, you know.
>
> Taylor: How did you know what shape was correct?
>
> Piercey: Oh, you could see it. The old fellas, they knew when they looked at it. They could know, I suppose, by the tops of the trees. We was in [the woods] one time, I suppose there was four feet of snow or more. We was boiling a kettle and ah, I don't know if my father said, or my uncle, one of them, he said,

> "There's a fine knee under that juniper tree." You know, just [by] looking up at it.[119]

Eleazor Reid provides this description:

> Taylor: Do you ever use a pattern for your stem?
>
> Reid: No, whatever you thinks of making, that's all. You'll see a stick in the woods, go until you see, look around until you say, "Well, I know he'll make a stem." . . . Same way with all your timbers. You'll go into the woods and you looks around until you see the piece of timber . . . [and you'll say], "Well," you know, "he'll make a piece for aft, or a piece midships," and you'll cut it, that's all.[120]

It is not surprising that Piercey and Reid could not succinctly describe how they are able to "see" the shapes of boat parts in standing trees; what makes them select some curved trees and not others.[121] I would have the same difficulty in describing the thought processes involved in the selection of an item of apparel that fits

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[119]From my March 22, 1979 interview with Lionel Piercey, MUNFLA accession numbers C4441, C4442.

[120]From my February 4, 1978 interview with Eleazor Reid, MUNFLA accession numbers C4432, C4433.

[121]For a concise, well-illustrated description of how a veteran Maine woodsman procures ship's knees -- a procedure similar to the one employed by Winterton boat-builders -- see: Jane Day, "Harvesting Hackmatack Knees: A Conversation with Frank Morse," Woodenboat 30 (Sept.-Oct. 1979), 66-72.

my wardrobe, or the choosing of a painting that fits my aesthetic preferences.

As I have said, Winterton builders use no physical patterns in the selection of certain boat parts, but are guided by non-physical, mental patterns. But what form do these mental patterns take? I think the best way of answering this question is by taking a cultural perspective. The mental patterns that boatbuilders use are contained in their cultural information: that inherited body of knowledge that provides them with the rules, reasons, methods and plans for living within their culture. In terms of boatbuilding, over the years certain basic ideas concerning what is correct and what is incorrect have evolved in Winterton, just as similar, though perhaps distinctly different, ideas have developed in other communities. These localized cultural rules pertain to nearly all aspects of the design and construction of a vessel, and it can be said that most builders endeavour to select stems, sternposts, timbers and other boat parts that abide by the culturally prescribed ideals; that fit the cultural context.

During their life-times, builders obtain a sense of what is correct by observing the shapes of boats built in Winterton and by listening to the judgements as to their relative correctness which are handed down by other boatbuilders. Although it is very difficult to pin down precisely what shapes fit a particular cultural context, one way of studying what fits is, as Alexander suggests, by looking at what does not fit.[122] For example, by showing my informants drawings of stem profiles with varying degrees of rake, from extreme forward to plumb, and asking them if they would build a boat with this or that stem shape, I was able to determine the basic range of shapes that are deemed acceptable. I discovered that while perceptions of the ideal shapes varied somewhat from builder to builder, when considered <u>en masse</u> they represent a set of acceptable shapes which are distinct from shapes which are not acceptable. In mathematical terms, this could be written as follows:

> If C equals the set of acceptable stem shapes,
>
> And
>
> a, b, c, d, e, f . . . z represent the range of all possible stem shapes
>
> Then,
>
> $C = (k, l, m, n, o, p, q)$
>
> But,
>
> $C \neq (a, b, c, d, e, f, g, h, i, j, r, s, t, u, v, w, x, y, z)$.[123]

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[122] Alexander, <u>Notes on the Synthesis of Form</u>, pp. 23-24.

[123] Though beyond the scope of this study, a careful structural analysis of the stem profiles of all Winterton-built boats would reveal the precise range of acceptable shapes.

An incident which occurred in the field further illustrates how misfits can define what does fit. During one fieldtrip to Winterton, I was photographing various boats near the government wharf. One of my informants was assisting me by providing information about the individual boats, such as their age, who built them, who owned them, and his assessments of their design and construction. If he noticed something about a boat that was not to his liking, his criticisms were generally quite mild. However, his appraisal of one craft, a speedboat, was anything but mild. As we approached it, he pointed out the reverse curve in the stem profile and let me know that that shape was not typical and that he found it to be nothing short of disgraceful. His disdain for that particular stem shape demonstrated clearly that this shape was a gross misfit and a contravention of the prevailing cultural rule. (Fig. 45) Thus, we can see how it is sometimes easier to determine what fits a cultural context by focusing on what does not fit.

Timber Placement and Other Measurement Formulas

In order to look further into the grammar of the natural language[124] of boatbuilding in Winterton, one area

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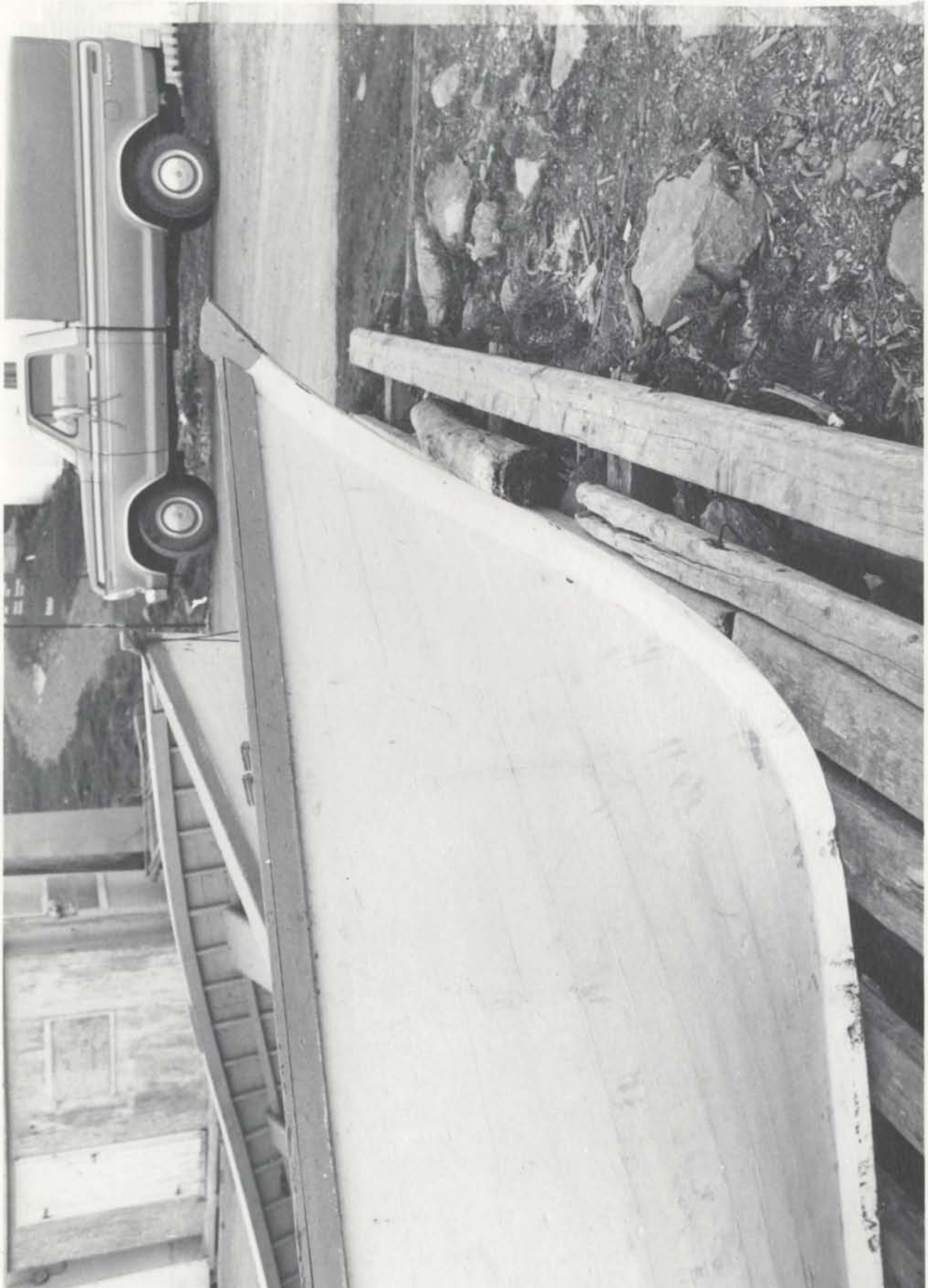
[124]The notion of the "grammar of the natural language" is developed by linguist Noam Chomsky in his work Syntactic Structures, Janua Linguarum, 4 (The Hague: Mouton, 1957), pp. 13, 50-51.

Fig. 45: The stem profile of this speedboat exhibits a reverse curve, a feature not in keeping with Winterton design conventions.



that must be examined is that of the various measurement formulas that boatbuilders use in their efforts to develop a well-formed boat. One set of measurement formulas concerns the placement of the three key timber pairs: fore hook, midship bend and after hook.

Regardless of the type of moulds used to derive the shapes of the three principal timbers, all builders interviewed use simple measurement formulas to determine their proper placement on the keel. While these formulas exhibit a high degree of similarity, subtle differences between them illustrate the sort of differentiation that can take place in design practices, differentiation which is mirrored by the variation of the hull forms of the completed boats. The following timber placement formulas, used by five Winterton builders, show the degree of variation that is possible:

(1) Marcus French's Timber Placement Formula

Fore Hook: located aft of the stem at a distance equal to the full breadth of the fore hook timber pair.

Midship Bend: located forward of the midpoint of the hull by a distance which equals the width of a timber.

After Hook: located forward of the sternpost at a distance equal to the full breadth of the after hook timber pair.

(2) Lionel Piercey's Timber Placement Formula

Fore Hook: located aft of the stem at a distance equal to the full breadth of the fore hook timber pair.

Midship Bend: located at the midpoint of the hull.

After Hook: located forward of the sternpost at a distance equal to the full breadth of the after hook timber pair.

(3) Eleazor Reid's Timber Placement Formula

Fore Hook: located aft of the stem at a distance equal to the full breadth of the fore hook timber pair.

Midship Bend: located approximately 4" forward of the hull midpoint.

After Hook: located forward of the sternpost at a distance equal to the full breadth of the after hook timber pair.

(4) Herbert Harnum's Timber Placement Formula

Fore Hook: located aft of the stem at a distance equal to the full breadth of the fore hook timber pair, then shifted around until fairness is achieved with the use of ribbands.

Midship Bend: located at the midpoint of the overall length of the hull.

After Hook: located forward of the sternpost at a distance equal to the full breadth of the after hook timber pair, then shifted around until fairness is achieved with the use or ribbands.

(5) Chesley Gregory's Timber Placement Formula

Fore Hook: located aft of the stem at a distance equal to one-fourth of the overall length of the hull.

Midship Bend: located at the midpoint of the overall length of the hull.

After Hook: located forward of the sternpost at a distance equal to one-fourth of the overall length of the hull.

From these five examples, we can see the emergence of several conventions in the placement of timbers. Four out of the five builders determine the placement of the fore hook and the after hook by the full breadth of these two timber pairs. All five place the midship bend at or near the midpoint of the overall length of the hull. Two of the five place the midship bend slightly forward of the midpoint of the overall length of the hull, a positioning which, they say, produces a better-balanced, more seaworthy craft.

Measurement formulas such as these are one means which builders use to facilitate the creation of well-formed hulls containing features which have proven to be successful in previously constructed vessels. Ideally, the use of these formulas, coupled with the use of such devices as moulds and patterns, should enable a builder to control variables to the extent that he can give every boat he constructs an identical hull form. In actual practice, however, this degree of design control is never attained in Winterton. Largely because of two uncontrolled variables, Winterton builders are not able to produce, with any degree of consistency, identical hull forms. These two variables are the rake of the stem and the rake of the stern. As mentioned earlier in this chapter, the stem and the sternpost are fashioned from naturally-curved pieces of wood without the aid of patterns of any sort. Because of this, the shapes of stems and sternposts may vary greatly, which will, in turn, cause variation in the overall hull form. This is true even in the case of an individual constructing two boats of equal length from the same set of moulds. In addition, due to the disparity in the shapes of stems and sternposts, measurement formulas which are intended to assist the builder in the creation of well-formed hulls tend, instead, to complicate the task. For example, if the placement of the fore hook is determined by measuring aft of the stem at a distance equal to the full breadth of the fore hook timber pair, then a boat with a stem which has a high degree of outward rake will have a long, narrow bow, while a boat with a more upright stem will have a bluffer bow. (Fig. 46) This sort of variation will, of course, produce concomitant variation in performance characteristics: the boat with the lean bow will react in the water differently than the boat with the bluff bow.

The relationship of stem and stern rake to overall boat performance is an aspect of design that is well known to Winterton builders. If this is true, why, then, do they persist in adhering to design procedures (i.e. measurement formulas) which result in craft that perform less well than could be expected? A number of possible explanations come to mind: (1) builders are reluctant to give up a traditional system of design; (2) rather than take the extra time and effort to shape stems and sternposts to specific shapes with the use of patterns or precise measurements, builders are content to use naturally-curved pieces of wood which contain shapes which fall within a range of acceptable configurations; or, (3) builders are more concerned with the rapid production of a craft which is simply adequate for the task it must perform than they are with the slower, more painstaking production of a boat which is an exact fulfillment of the initial design concept.

To some extent, all of these factors probably come into play. It would be a mistake, however, to say

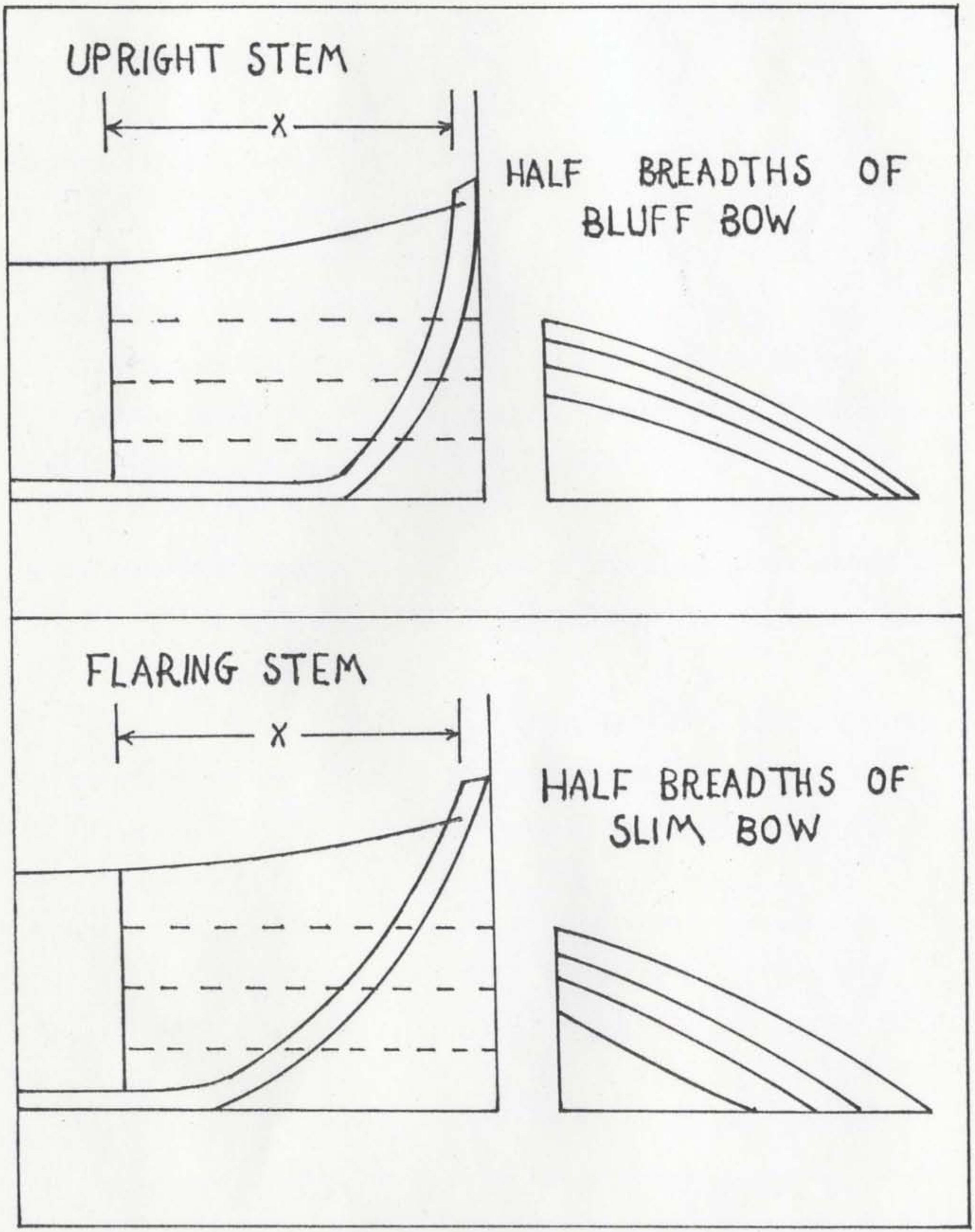


Fig. 46: How stem shapes and measurement formulas affect bow shapes.

that Winterton builders are not concerned with the performance of the boats they build, and that they do not tinker with their designs in order to produce better craft. Despite their awareness of the inherent shortcomings of craft possessing such features as too much or too little stem or stern rake, they seem resigned to the use of the uncontrolled shapes of naturally-curved pieces of wood, and will probably continue to use them, along with "rule-of-thumb" timber placement formulas, until some utility is seen in replicating precise hull forms.

In addition to the measurement formulas used to derive the placement of the three principal timber pairs, most Winterton builders also use formulas to determine the sheer height and the placement of the counter.

The establishment of the sheer (the top edge of the hull) is generally accomplished by a rather straightforward procedure: a sheer height is marked on the stem, the counter and the three main timbers, and then, a flexible batten is used to fair in these heights and mark the corrected sheer on all of the timber pairs. While the fore hook, midship bend and after hook sheer heights are usually marked on the moulds and can be easily transferred to the completed timber pair, for the sheer heights at the stem and the counter, the builder simply uses measurements that he keeps in his head. The reference point for the stem and counter sheer heights is frequently the top of the keel or a "timber line," a line marked on the keel 1/2" or so below the keel top. For example, Lionel Piercey informed me that if he were to build a 20 foot long (LOA) motor boat, he would place the stem sheer height 36 inches above the timberline, and the stern sheer height 39 inches above the timberline. (Fig. 47)

Another measurement formula concerns the placement of the counter. Since the counter sheer height also represents the top corners of the counter, the only other calculation that must be made concerns the position of the bottom of the counter, sometimes called the "tuck." As with the sheer height measurements, the top of the keel or a timberline is commonly used as a reference point. The formula that Marcus French uses for a 16 foot rodney is typical of those used for boats of this type: the bottom of the counter is located 8 inches above the timberline. (Fig. 48)

Performance Correlatives

In order to acquire some understanding of how boatbuilders perceive the process of design, and, specifically, the number and type of design options which they believe are available to them, one must look into the area of "performance correlatives." By "performance correlative,"

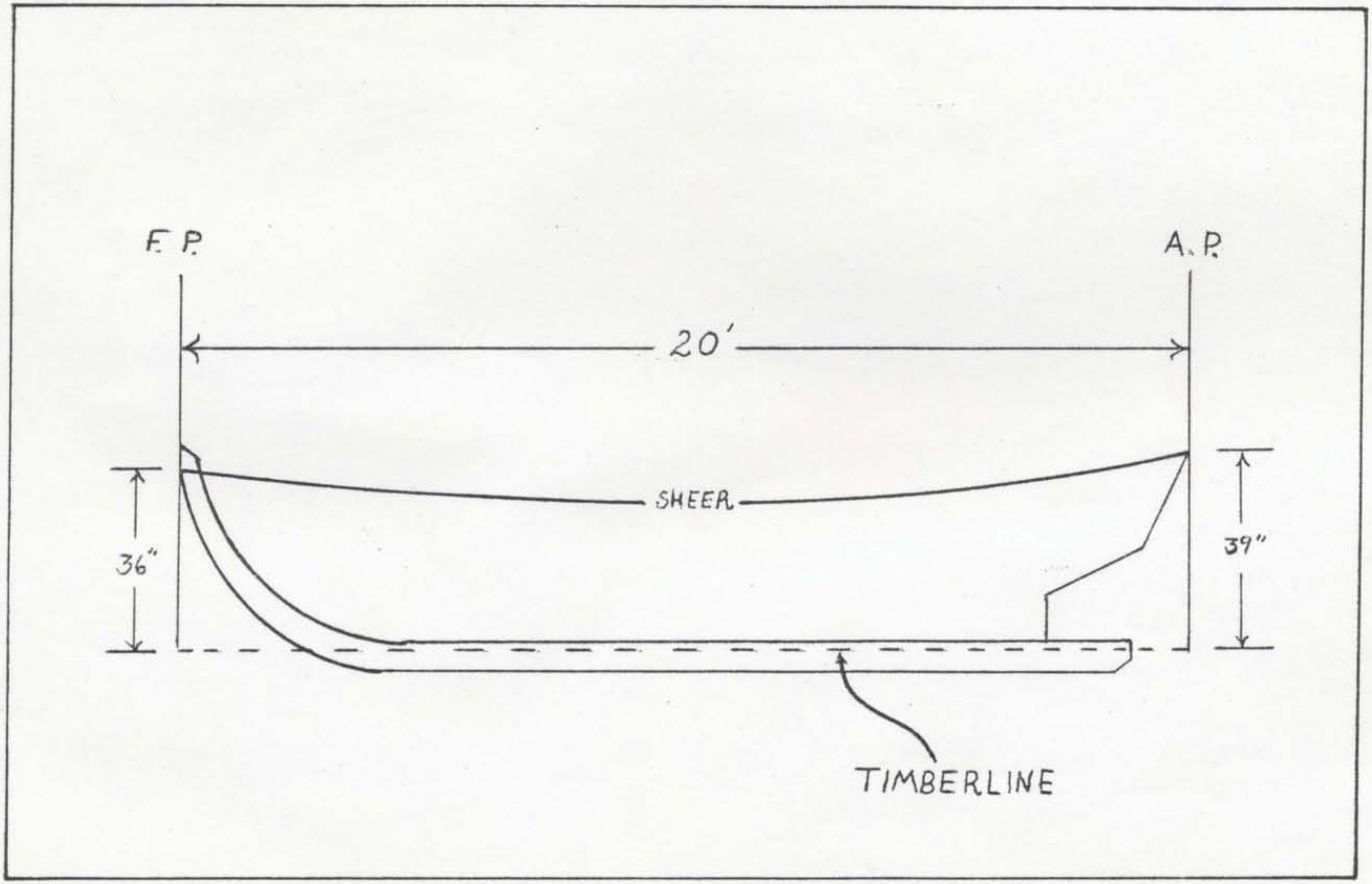


Fig. 47: Sheer heights for a 20' motor boat (after Lionel Piercy).

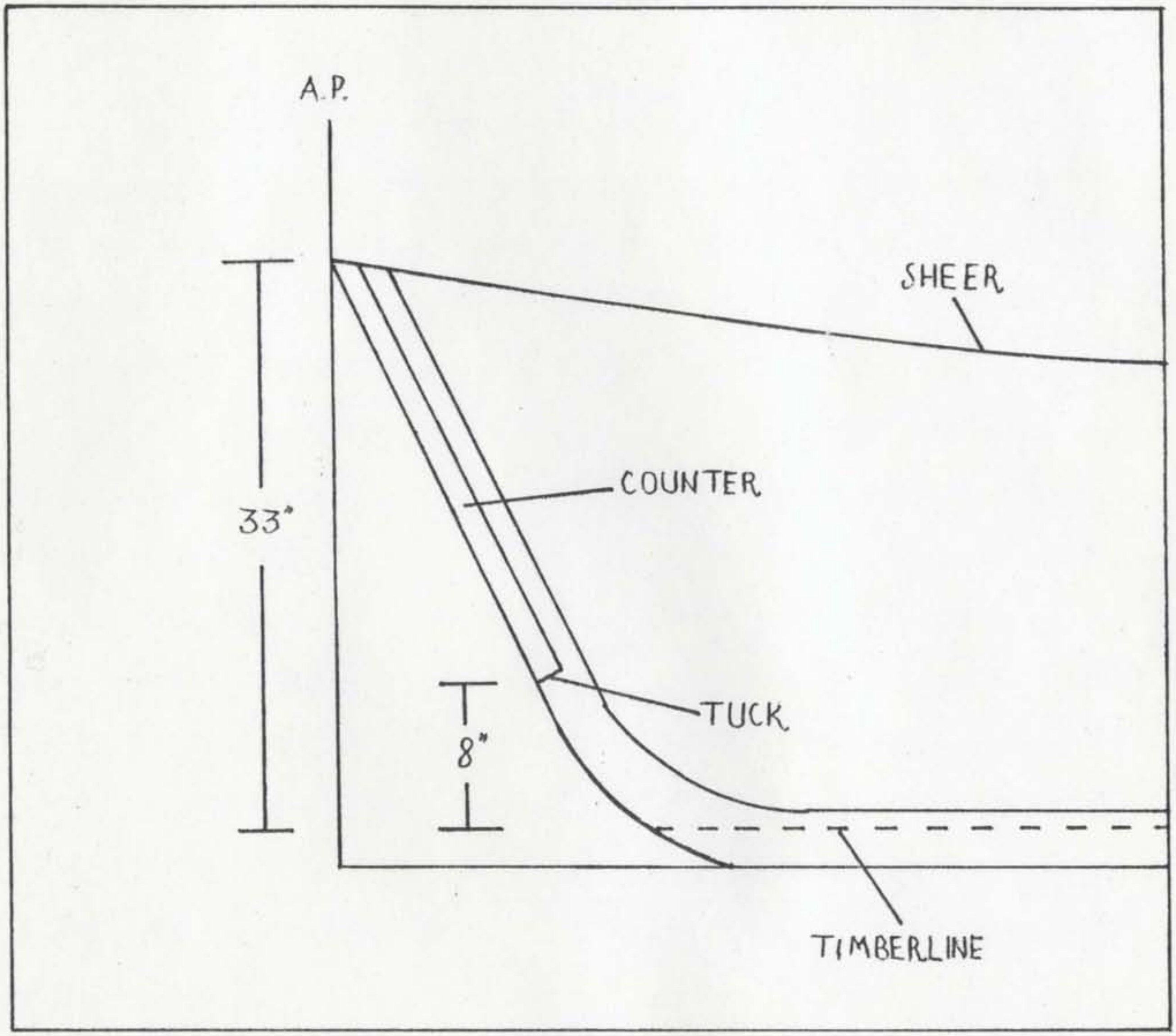


Fig. 48: Counter location for a 16' rodney (after Marcus French).

I mean any aspect of the form of a boat which significantly affects its overall functioning.

Getting at this sort of critical information, however, proved to be more complicated than I had anticipated. Initially, I attempted to elicit the emic view of performance correlatives by putting this question to my informants: "What parts of a boat would you change if you wanted it to perform differently in the water?" However, the confusion that this broad question generated quickly convinced me that I was being too obtuse. I discarded my original question and replaced it with: "What makes a good boat?" Apparently, there was little doubt about what I was driving at with this query, as my informants had no difficulty in relating the qualities which they considered to be the most crucial for the success of a boat. Citing seven basic characteristics,[125] they said a good boat is a boat that:

(1) performs well in high winds;

(2) throws water off its bows without wetting its occupants;

(3) has an easy motion and does not roll quickly from side to side when proceeding with weather coming from the side;

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[125]Other desirable qualities, such as strength, safety and longevity, were implicit and, therefore, rarely mentioned.

(4) has the ability to carry a large load without dangerously decreasing its seaworthiness;

(5) goes before the weather without burying its "head" (bow) in the waves;

(6) performs well in rough water; and

(7) has reasonable stability for fishing.

Having learned what builders considered to be desirable performance characteristics, I then addressed each characteristic individually with follow-up questions such as: "If you built a boat and it turned out that it had a tendency to bury its head, how would you correct this in the next boat you built?" By asking about the correction of negative characteristics in this way, I was able to learn how builders alter certain aspects of form in order to obtain positive characteristics. Then, by matching the desired performance characteristics of the ideal "good boat" with the aspect or aspects of form which correlate to each, I was able to arrive at the performance correlatives recognized by most Winterton builders. These general correlatives are as follows:

(1) Desired Performance: performs well in high winds. Performance Correlatives: long "suent" bow that holds the water; flaring bows for tossing off water.

(2) Desired Performance: occupants do not get unnecessarily wet.

Performance Correlative: flaring bows that push waves down and away from the hull.

(3) Desired Performance: has an easy motion and does not roll quickly from side to side when proceeding with weather coming at the side.

Performance Correlatives: amount of "hollowing"; amount of "rising"; length-width ratio.

(4) Desired Performance: the ability to carry a large load.

Performance Correlatives: length-width ratio; amount of "hollowing"; amount of "rising."

(5) Desired Performance: goes before the weather without burying its "head."

Performance Correlatives: proper stem-stern balance; flaring bows; adequate "bearing" under the bows.

(6) Desired Performance: performs well in rough water.

Performance Correlatives: flaring bow; proper amount of "hollowing"; proper amount of "rising"; proper stem-stern balance.

(7) Desired Performance: acts as stable fishing platform.

Performance Correlative: proper amount of "hollowing."

Of course to fully understand the performance correlatives, all of the terms used here, such as "bearing," "hollowing," and "rising" must be defined, as well as concepts such as those which I have labeled "length-width ratio" and "stem-stern balance." These definitions are as follows:

> BEARING: a term used in Winterton to describe the degree to which the bottom of a boat resists being pushed deeper into the water. The amount of this resistance is determined by the shape of the bottom and the amount of surface area it possesses. For example, a boat with a perfectly flat bottom is said to have a lot of "bearing," while a boat with a V-shaped hull has less.
>
> FLARE: a term used in Winterton to describe a shape which extends outward at an angle of approximately 45°. For example, the cross-section of a "flaring" bow, which would look like this:

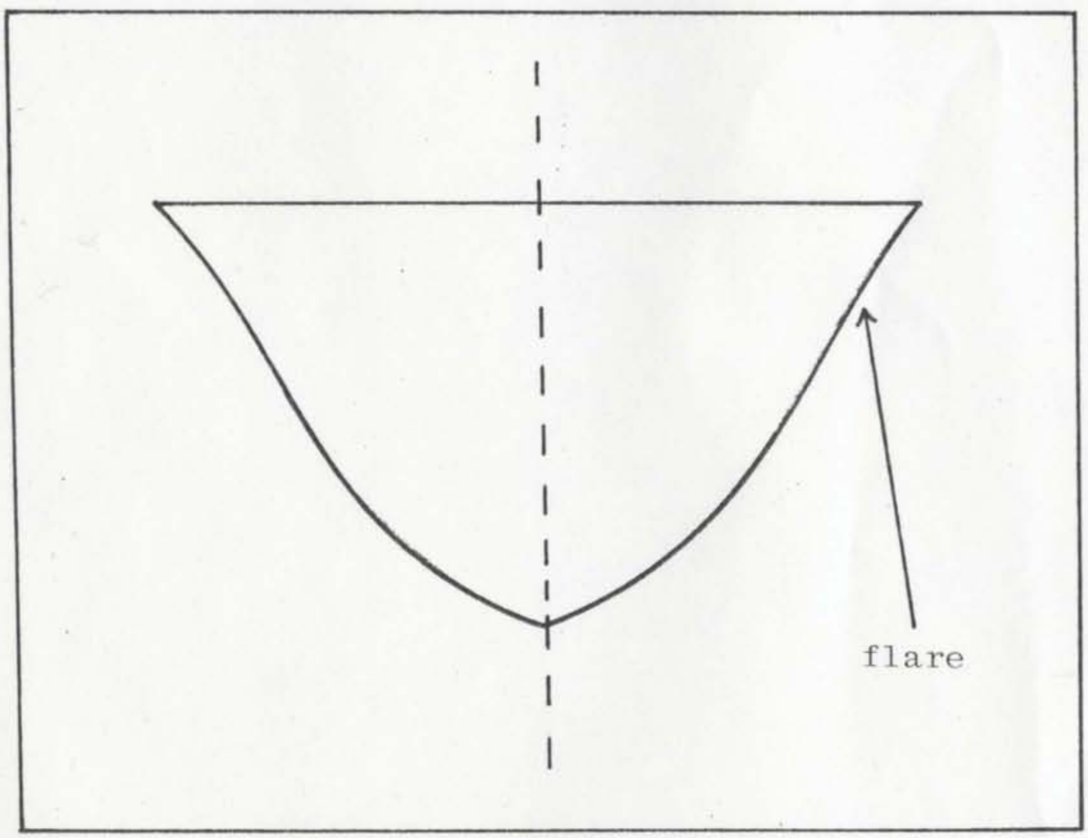

Fig. 49: Cross-section of a "flaring" bow.

HOLLOWING: a term used in Winterton to describe the amount of concave curvature present in the bottom of a boat, in the area between the crop of the bulge and the keel. For example, hull "A" has a lot of "hollowing," while hull "B" has very little:

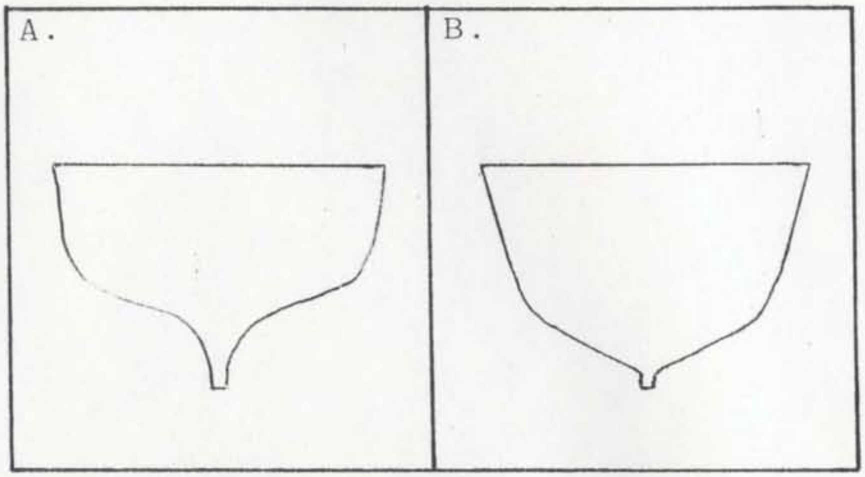

Fig. 50: "Hollowing."

RISING: a term used in Winterton to describe the height of the "crop of the bulge" (waterline). For example, hull "A" has a lot of "rising," while hull "B" has very little:

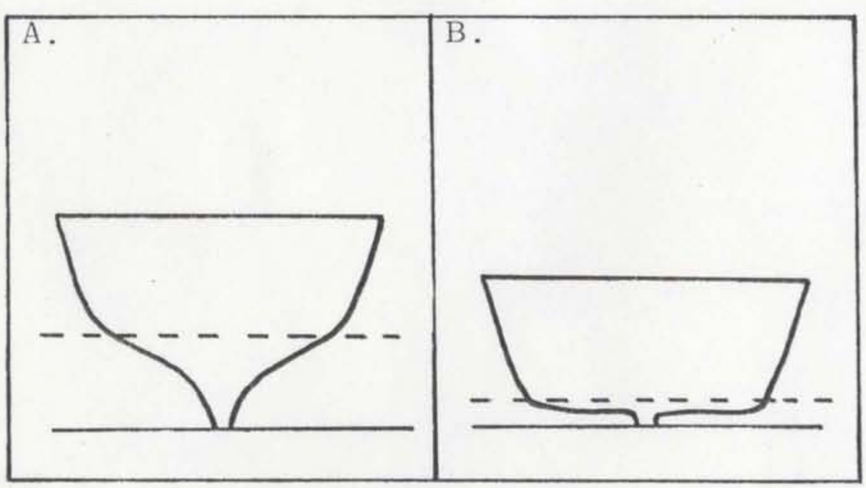

Fig. 51: "Rising."

SUENT: a term used in Winterton to describe any surface which has the proper amount of smooth, unbroken curvature. For example, a hull consisting of smooth, "fair" curves would be called a "suent" hull, while a hull exhibiting many humps and hollows, or other signs of unevenness would not.

LENGTH-WIDTH RATIO: a term I have adopted to describe a concept well known to Winterton builders. An elementary concept, the ratio of the length of a boat to its width will determine its speed vis à vis its stability. In other words, builders know that if length is increased and width remains constant, hull speed will be increased. Conversely, if width is increased and length remains constant, stability will increase and hull speed will decrease. The builder must select the length-width ratio for his boat that will allow it to meet the requirements it is intended to fulfill.

STEM-STERN BALANCE: a term I have adopted to describe the way Winterton builders view how the properties of the bow affect the stern and vice versa. Linkage is primarily noted in these areas:

(a) if the stern is too heavy, it will tend to pull the bow out of the water and, as a result, the bow will have less hold and it will be more difficult to keep the boat on course;

(b) if the bow is too heavy, it will tend to pull the stern out of the water and, as a result, the rudder and/or propeller will have less hold of the water;

(c) if a counter is too wide (and therefore has more "bearing"), when struck by following seas it will tend to plough the bows under the water;

(d) if the bow is too bluff, or has too much bearing, waves striking it will tend to submerge the stern.

In essense, this concept recognizes the importance of a harmonious relationship between the opposite ends of a boat.

The following exchange with Herbert Harnum illustrates the variety of factors that he takes into consideration when he designs a boat:

Taylor: What makes a good boat?

Harnum: Well, what makes a good boat is a good head, because most of the time we're coming home, we're coming to head wind. Winds are always western in this bay, you know. Well, you want a good flare[d], high head. Not too high now, but what I mean to say, a good flare[d] head for coming home down this bay down here. Especially [if] you got anything in your boat, and you always do when you're fishing. And a suent stern. No good to have a high stem if she's too heavy aft, like I said before, because it will shove her head down and the swell, if there's any swell on, she will heave her down that much more. A good flared head [is what] I likes to have on a boat, and you got to get the right stem for that. You can't go in [the woods] and cut any kind of a stem for a flaring bow on a boat because it won't suit. If you got sort of an upright stem, you'll have a blunt head and that's all you'll have. But, if you have a long, a long flaring bow, you see, [it will be much better].[126]

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[126]From my August 15, 1979 interview with Herbert Harnum, MUNFLA accession numbers C4636, C4643.

Another way of looking at the performance correlatives listed above is to view them as the range of significant design variables (inter-related to some extent), which the builders recognize as those which they must manipulate in such a way that the combined properties of these variables equals a hull form which successfully meets its use requirements.

The Homeostatic Structure: Correction and Improvement of Design

As stated previously, before a Winterton fisherman builds his first boat, he generally acquires a set of moulds. These moulds, usually obtained from his father or another male relative, represent his design heritage, and they illustrate the ways in which his predecessors have attempted to solve problems of design. Because of these moulds, the neophyte builder does not have to build a boat from scratch; he does not have to conceive a unique, original design. Instead, he can let the tested mould shapes of experienced builders -- patterns for a particular boat type as they have evolved up to that time, in that place -- guide him in his design decisions. At first, he may adhere firmly to the mould shapes and notions of design that he has acquired from others, but, gradually, as his experience in boatbuilding increases, he may attempt new solutions to design problems. Over the years, each boat that he builds will probably contain "incremental improvements"[127] over the design of his first boat, and when, as a mature builder, he passes on his mould shapes to younger builders, these shapes will be a representation of a design that has undergone some degree of modification.

When we consider the process just described, we are faced with the question: How can a localized tradition (such as boatbuilding in Winterton), with its seemingly rigid customs, facilitate the gradual evolution of design? Once again, the work of Alexander is relevant to this discussion. Alexander identifies the mechanism which makes for the successful evolution of well-fitting forms in unselfconscious cultures as a structure which is "homeostatic," or self-regulating. He argues that, because of this homeostatic structure, unselfconscious cultures consistently produce well-fitting forms, even in the face of social change. Furthermore, he asserts that this structure has broken down in selfconscious cultures to the extent that the likelihood is great that forms will fail to fit their contexts.[128]

But what is the nature of this homeostatic structure, and how does it relate to boatbuilding in Winterton?

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[127] Lunt, Lobsterboat Building on the Eastern Coast of Maine, p. 120.

[128] Alexander, Notes on the Synthesis of Form, pp. 55-70.

A key element in Alexander's thesis is the view that in unselfconscious cultures form makers are also, in many cases, the owners and users of the forms which they, themselves, produce. He posits that this sort of relationship leads to a certain closeness between the form and its user, an intimacy which, in turn, fosters constant rearrangement of unsatisfactory design details. Expanding on this notion, Alexander states that traditional designers in unselfconscious cultures are able to produce well-fitting forms because the force of tradition allows them to break design problems down into sub-systems. Having broken design problems down in this way, the designer is thus able to deal with each problem or sub-problem separately, rather than being forced to deal with all of the variables impacting on a design at one time. Or, as he puts it:

> We may . . . picture the process of form-making as the action of a series of sub-systems, all inter-linked, yet sufficiently free from one another to adjust independently in a feasible amount of time. It works, because the cycles of correction and re-correction, which occur during adaptation, are restricted to one sub-system at a time.[129]

Recalling the section of this chapter which dealt with performance correlatives, we can see that certain actions taken by the fishermen/boatbuilders of Winterton

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[129] Alexander, <u>Notes on the Synthesis of Form</u>, p. 43.

illustrate mechanisms of the homeostatic structure which, according to Alexander, are characteristic of an unself-conscious culture. As we have seen, Winterton boatbuilders endeavour to make improvements and corrections in the performance qualities of the boats they build through the use of a sub-systems approach. First, they identify the range of all of the form variables which may be present in a hull (e.g. hollowing, rising, flaring), and then match each form variable with the performance quality or qualities that it significantly affects. Finally, having obtained a general knowledge of performance correlatives in this way, builders may then proceed to make improvements in a design's performance by altering one form variable (sub-system), while leaving all other variables in check.

The essense of the homeostatic structure, however, lies in the sensitive interplay between the form -- in this case a boat -- and its builder/user. For improvements to be made in the performance qualities inherent in a design, a product of the unimproved design must first be tested. This point is forcefully made by boatbuilder Wilson Reid:

> . . . and the only way you can really know [how a boat performs] is to use the boat. Now, you [can] build a good boat, and she

> looks good, but you haven't got a clue if she's good, or [if] she's not, until you use it.[130]

Fishing in a boat for a whole fishing season enables most fishermen/boatbuilders to evaluate the performance qualities of their boats under a variety of conditions. This sort of testing through actual use also allows the builder to judge the efficacy of the design decisions that went into his boat, and to consider the need for further modifications.

During the winter of 1976-77, Eleazor Reid built a 21' 3 3/8" (LOA) motor boat. The following excerpt from an interview that I recorded with him in 1978 illustrates how builders base evaluations of their designs on a boat's performance in the fishery.

> Reid: That's what you do. You have a boat [for] the year [and] you see something you want changed, see. . . . for to make a boat, make it different from what it was last year. And that one I got down there now, if I was to build another, I'd change she forward.
>
> Taylor: Forward?
>
> Reid: At the stem. I wouldn't have the stem to come up like that, you know. I'd have it to come down here, to come up quicker [<u>indicating</u>]. See? She'd have more hold of the water

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[130] From my August 17, 1979 interview with Wilson Reid, MUNFLA accession number C4644.

forward; she wouldn't blow away. When the wind takes her now, with this bow, she's got no hold of the water where she wants it . . . .

Taylor: What else would you do differently?

Reid: I wouldn't see anything else I could do different from that, not with that boat.[131]

By closely observing his boat's performance over the course of a fishing season, Reid was able to rate the success of his design. In discussing this process, he noted only one aspect of the form of the boat that he would change: the shape of the stem. Because its shape prevented the boat from holding its course in high winds, Reid singled out the stem for criticism. To remedy this negative characteristic in a future craft, he proposed the installation of a stem whose profile was "quicker," that rose more sharply from the baseline. (Fig. 52) Thus, we can see how design evolution stems from the sensitive interplay between the boat and its builder/user and the incremental improvements that are fostered by this interplay.

While insight into the workings of the homeostatic structure may be gained by looking at the manner in which a builder introduces an incremental improvement to the basic design that he utilizes, the relationship of this process

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[131] From my February 4, 1978 interview with Eleazor Reid, MUNFLA accession numbers C4432, C4433.

BOATBUILDING IN WINTERTON: THE DESIGN, CONSTRUCTION AND USE OF INSHORE FISHING BOATS IN A NEWFOUNDLAND COMMUNITY

PART 2

DAVID ALAN TAYLOR

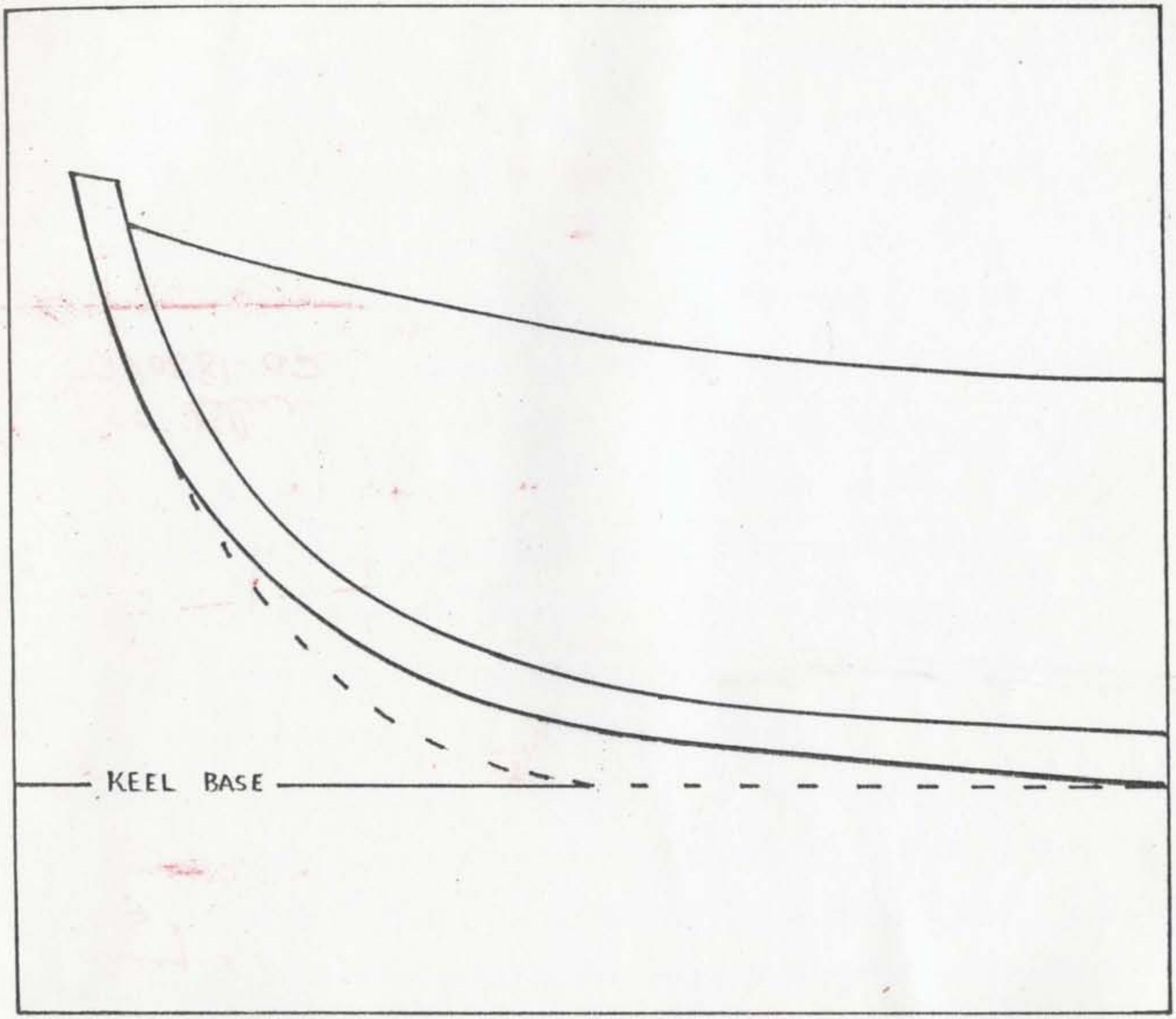

Fig. 52: Stem profile of motor boat by Eleazor Reid with possible correction. (Correction indicated by broken line.)

to design evolution becomes clearer when viewed over time. By analyzing all of the significant incremental improvements that a builder has made to his basic design during the course of his life-time (provided that he has built a sufficient number of boats), the culumative effects of the improvements will become apparent, and it will then be possible to begin to make observations about the evolution of design from one generation of boatbuilders, to the next.

Fortunately, through the recollections of Reuben and Eleazor Reid, I have been able to reconstruct the major incremental improvements adopted by their brother, John (now deceased). According to all accounts, John Reid was one of the most skilled, innovative, and prolific boatbuilders in the history of the town of Winterton. During his life-time he built over 30 boats (sometimes building two boats at the same time), and, in all probability, the frequency with which he built boats contributed to the number of design improvements that he introduced. John Reid passed on much of his boatbuilding knowledge to brothers Reuben and Eleazor, who, in turn, passed it on to John's son, Wilson, as well as other members of the community. Today, much of the informal design theory worked out by John Reid has been accepted by many Winterton boatbuilders.

A major influence on John Reid's boatbuilding practices was his experiences fishing off Baccalieu Island, a high, rocky island located some twenty-seven miles north-east of Winterton at the mouth of Trinity Bay. Up until the 1940's, Winterton fishermen carried on an active cod fishery there between the months of June and October. The men lived in camps on the leeward side of the island during the fishing season. Because the island is adjacent to the open ocean and does not offer a protected anchorage, when seas were rough, the fishermen at Baccalieu were forced to haul their boats out of the water. However, because the island's rim is made up of sheer cliffs rising over 50 feet above the water, this was not an easy task. Cables were attached to the boats, and then they were individually hoisted out of the water with a hand-powered winch and deposited on the island in a flat area above the cliff face.

Aside from the usual requirements placed on motor boats used further up the Bay (e.g. strength, safety and carrying capacity), additional specifications were imposed on the boats that were used at Baccalieu: to be easily hauled out of the water during times of rough weather, the weight of a boat had to be kept to a minimum; to easily fit into the Y-shaped cable sling used for hoisting, boat length was restricted to a certain size (approximately 19-20 feet); and, to perform well in the rough water that was common around Baccalieu, a boat's hull form had to be suited to these conditions.

In order to maintain lightness in the boats they used, Winterton men fishing at Baccalieu would frequently use a boat for only one or two years, and then sell it, before it soaked up water and got heavier, and build another. Eleazor Reid, who, himself, fished at Baccalieu for twenty summers, explains how boatbuilders gained knowledge about boat design by building boats for the Baccalieu fishery:

> Well, you was in rough water all the time, one thing, down there. Most all the time it was rough water. And you knowed by using so many boats. Now, every year, some years, every year you built a boat for yourself to fish in the next year; a small boat. In the fall of the year you'd sell her down there [at Baccalieu Island or Bay de Verde] before you come home. Or, probably they'd come up here [to Winterton] and buy her after. And the way, how that was, they [i.e. Winterton boatbuilders] found out what you want for a boat, what kind of a boat you want for rough water. Now, [my brother] John built one one year and went down there [to Baccalieu] and went out the first trip [and] he come in and said, "If I had another boat I'd sell this one right away." He didn't like her. He didn't like the way she handled herself in the water. And then, by that, by having a boat every year you learned what you want for a rough water boat, and on the last of it he got the right thing.[132]

But what was the essense of John Reid's design which constituted what his brother Eleazor describes as "the right thing"?

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[132]From my April 24, 1979 interview with Eleazor Reid, MUNFLA accession number C4435.

What changes did he make? Once again, Eleazor Reid:

Reid: He change, he changed his moulds. He took the hollow out of the bottom. They used to have hollow on them, and the sides were round, like that, see, first. [sketching]

Taylor: Around the crop of the bulge and

Reid: And up. You come around the crop of the bulge [and] you come up straight and come in, turn in so much.

Taylor: Turn inboard a bit?

Reid: [Yes], turn inboard a bit. Now, they found out that if they took this hollow off here, down here, [indicating] . . . .

Taylor: Between the crop of the bulge and the keel?

Reid: Right. Just a little bit, not too much. Then, when you come off here, it went off here. [sketching]

Taylor: Flare it out?

Reid: Yeah, see? This boat, when she got in the water with no hollow down there, she'd be quick on the water . . . . This is what they learned, learned those things.[133]

Another modification that Eleazor noticed that his brother made had to do with the portion of the hull above the waterline, or, as he calls it, the "side" of the boat.

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[133] From my April 24, 1979 interview with Eleazor Reid, MUNFLA accession number C4435.

Reid: Some [boats] are built with a wall side, you know, no flare on the side. Our boats [have] got a flared side, but some of the motor boats that come up comes out down here at the bottom flat and turn, comes out round mostly. A lot of them do. Now our boats don't do that. They used to years ago, but we learned the difference.[134]

Although it is not clear if his experiences at Baccalieu prompted it, another change that John Reid made in the basic design of his boats related to the stern. It is apparent from photographs taken in the 1950's[135] that his earlier boats were constructed with upright sterns. That is, sterns whose profiles did not deviate far from the after perpendicular of the craft, in the manner of the sterns of rodneys. (Fig. 19) In later years, probably to give his boats more "bearing"[136] aft, he began to construct his boats with over-hanging, transom sterns.

While they may not represent all of the major changes that John Reid made in the basic design that he acquired as a young man, these three changes, made at

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[134] From my February 4, 1978 interview with Eleazor Reid, MUNFLA accession numbers C4432, C4433.

[135] I am referring to photographs taken by his son, Ralph Reid, which are now in the possession of Charlie Reid of Winterton.

[136] This is the opinion of his son, Wilson Reid. See my August 17, 1979 interview with Wilson Reid, MUNFLA accession number C4644.

different times during his boatbuilding career, illustrate some of the significant ways that he introduced incremental improvements, and show how the work of one man can contribute to design evolution in his community. (Fig. 53)

But, if it is my intention to claim that, in terms of the activity of boat design, Winterton falls into the category of unselfconscious culture, in light of the innovations that I have attributed to John Reid, how can I support my earlier statement that, in unselfconscious cultures, ritual and taboo discourage innovation?

As we have seen, negative performance characteristics prompt boatbuilders/users, such as John Reid, to make corrections in their design as soon as possible in order to produce well-fitting forms; forms which fit the context of their use requirements. Theoretically, if a builder/user observed no negative characteristics in his latest boat no changes would be forthcoming and the design could be said to be in equilibrium. In short, it seems apparent that negative characteristics lead to change, while the absense of negative characteristics does not.

In unselfconscious cultures, we see two forces in opposition: (1) the force of tradition, in the form of rituals, taboos, and criticism, which discourages innovation and unnecessary change; and (2) the sensitive interplay between the form and its builder/user which leads to rapid

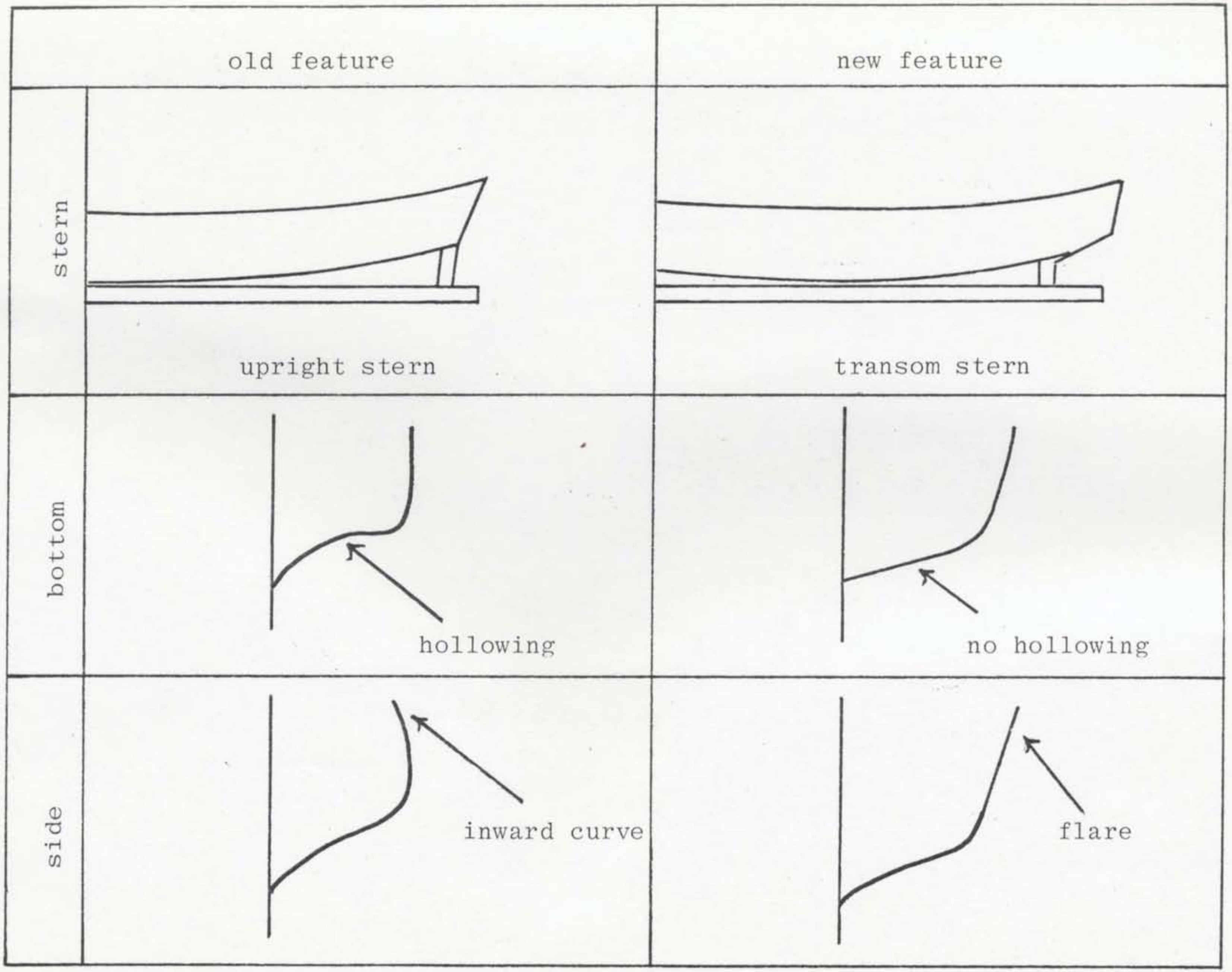

Fig. 53: John Reid's Incremental Improvements.

correction of negative design characteristics, one sub-system at a time. It is precisely this opposition -- resistance to change and the desire for immediate change -- which serves to make the process of design self-regulating, or homeostatic. Change does take place, but, due to the rigidity of tradition, it does not take the form of large-scale adjustments involving several sub-systems at the same time. Instead, change takes place in a slow, measured way. Minor adjustments made on a sub-system by sub-system basis allow forms to evolve carefully, and, because of this, they may attain a level of equilibrium and be viewed as well-fitting forms.

Experimentation and Creativity

Although I have stressed the fact that design decisions are often made in response to negative performance characteristics, it would be erroneous to assume that design decisions are made only under such circumstances. Occasionally, boatbuilders will alter their designs, not because they have detected flaws in the performance qualities of boats constructed from their current designs, but simply because they think further improvement in performance may be obtained by experimenting with the design. Such was the case with the rodney built in 1979 by Marcus French. (Figs. 54 & 55)

During 1978, Marcus built a rodney for his own use, the success of which stimulated him to build another

Fig. 54: 15' 10" rodney built in 1979 by Marcus French for Fred P. Hiscock.

Fig. 55: Counter of 15' 10" rodney built by Marcus French in 1979.

during the following year, which he subsequently sold to Fred P. Hiscock. He used the same moulds and the same construction techniques for both boats, but, even though he was quite pleased with the performance of the first rodney, he decided to make a few changes in the design of the second rodney. As he explains:

> Well, the only thing that I can tell you about the boat [I built in 1979] is that I didn't take so much hollow out of the counter, I made her 2 inches wider, and I pushed everything, all the frames are set practically the same, as near to the marks [as those] that I had on the other one. But in the fore hook, I leaned my fore hook forward on the top so that I would give her a bit more bow. And that's the only ah alterations that I made, except my plank is a bit heavier.[137]

Marcus made it clear to me that he was not dissatisfied with the performance of the first boat, which made me wonder why he had decided to change the design of the second boat, even slightly. When I asked him about this he said:

> . . . I did change the [design of the] boat. Not that it wasn't performing, but I just went a little further to see if it could perform better, you know, improvement . . . . I just wanted to see how far I could go and still have a good boat.[138]

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[137]From my April 24, 1979 interview with Marcus French, MUNFLA accession number C4440. (The plank thickness of the boat built in 1978 was 5/8", while the plank thickness of the one built in 1979 was 3/4".)

[138]From my April 24, 1979 interview with Marcus French, MUNFLA accession number C4440.

While the design modifications that Marcus made with the rodney that he built in 1979 were few, and fairly minor, a boat built during the same year by Herbert Harnum exhibits design experimentation of a vastly different order. An experienced builder with over 30 boats to his credit, including rodneys, trap skiffs and speedboats, Herbert departed from the usual procedure of making minor adjustments to a basic design on a sub-systems basis and formulated a design by making large-scale changes affecting several sub-systems. He decided to design a boat which combined the best qualities of two distinct boat types -- the displacement hull rodney (or punt) and the planning hull flat (or speedboat) -- and in making this synthesis he invented a hull form which was unique to the community.

> . . . I wanted one between a flat and an old-fashioned punt, you know. [We] used to have an old-fashioned punt one time, used to have it for rowing, see. She used to come up aft, she used to come right up [so] nothing dragged. [They] used to build her so the counter came out of the water. I wanted something, you wants your engines, your engine is aft. You build something and this counter is out of the water [and] she's going to be cocked right up in the head of her. Well, [during] the [past] year, I made a mould out there in the store [that was] between a flat and a punt . . . . It was the first one built in the harbour like it.[139]

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[139]From my August 15, 1979 interview with Herbert Harnum, MUNFLA accession numbers C4636, C4643.

With these thoughts in mind, Herbert came up with a design for a 16' 6" boat which featured a hull with somewhat less displacement than the typical rodney (but not as little as a flat) and a counter which was wider and lower than that of a typical rodney (but not as wide or as low as a flat). The incorporation of these basic features would, he reasoned, result in a craft which would retain much of the seaworthiness of a rodney (with its displacement hull), as well as much of the speed of a flat (with its low, wide counter which accords "bearing" to the stern and increased thrusting ability to the outboard motor). (Figs. 56 & 57)

Design activity of the scope employed by Herbert Harnum for the creation of his rodney/flat demonstrates a level of creativity, of independence from the controlling force of traditional practices, which is uncommon in Winterton. Basically, he was able to free himself from the rigidity of tradition because of two factors: (1) he was confident that his reputation as an accomplished designer/builder would remain secure (even in the face of possible criticism of an unorthodox design); and, (2) his extensive experience with boat design and construction and implicit understanding of localized design traditions gave him the ability to transcend the conventions of traditional design.

Fig. 56: 16' 6" speedboat/rodney built in 1979 by Herbert Harnum. Harnum used a design that was a compromise between the rodney and the speedboat, incorporating, in his opinion, the best features of both.

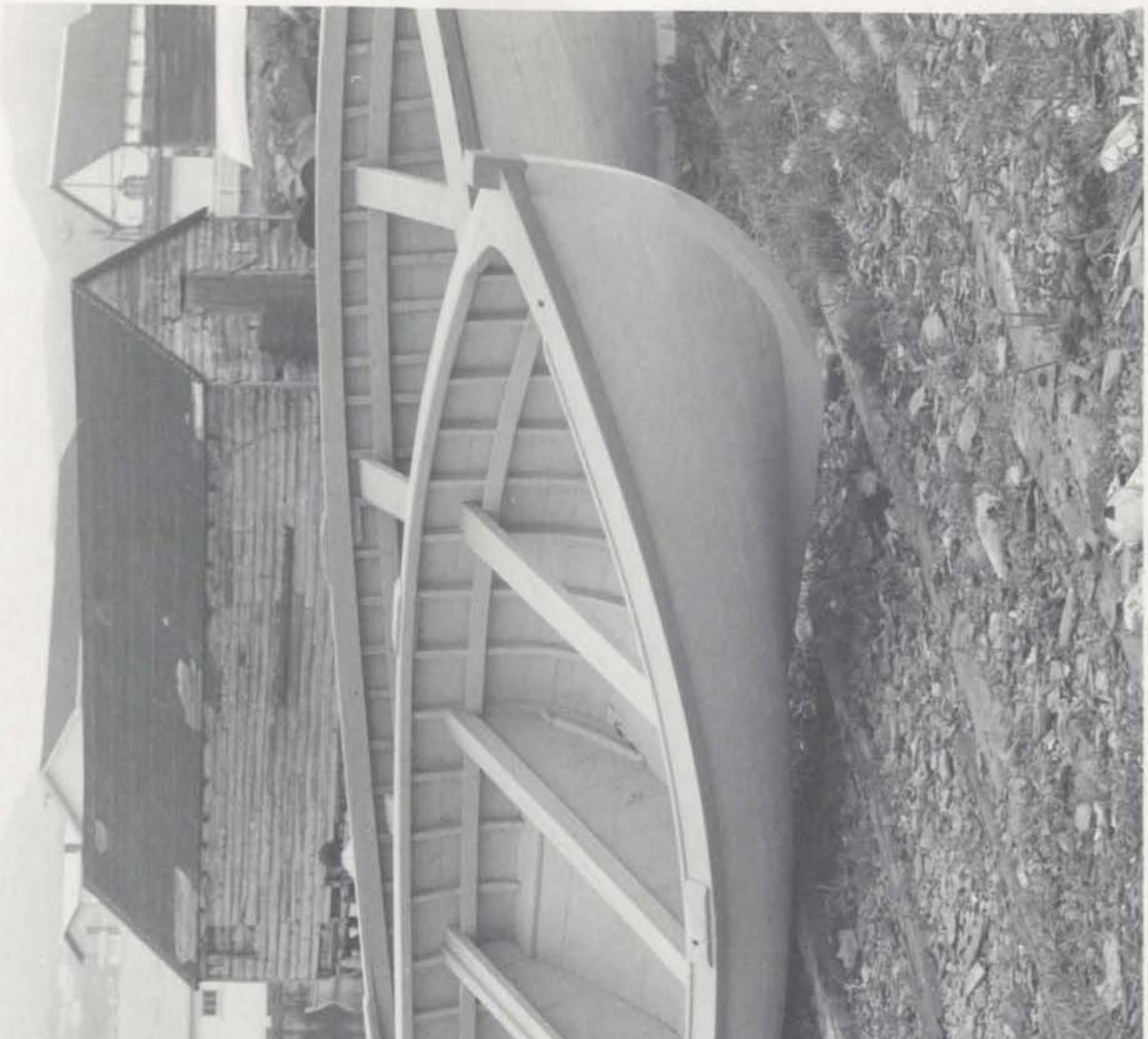

Fig. 57: Counter of 16' 6" rodney/speedboat by Herbert Harnum, 1979. Note that it is fuller and has less deadrise than French's rodney.

Summary

In this chapter I have tried to do two things: present an accurate description of all of the major procedures that Winterton boatbuilders use to design boats and the factors that impinge on these procedures; and, using these design procedures as evidence, show that the community clearly falls into one of the two arbitrary categories which, after Alexander, I have labelled self-conscious and unselfconscious culture.

It is my contention that the community of Winterton falls neatly within the category of unself-conscious culture, as the following points illustrate:

(a) There is little thought about design or architecture, as such. Although Winterton builders discuss matters that the researcher may classify under the rubric of "design," there appears to be little recognition, on the part of the builders themselves, of a formal process known as design.

(b) There are right ways and wrong ways of building and designing boats, but no general governing principles. Winterton builders acquire their knowledge of design and construction informally; through observation and imitation. They are shown the right ways and the wrong ways of doing things, but are not given principles which abstractly explain the rightness or wrongness of certain actions.

(c) Occupational specialization is rare. Mirroring the lines of the popular Newfoundland folksong "I's the B'y" ("I's the b'y that builds the boat/I's the b'y that sails 'er"),[140] in Winterton, nearly all of the boats built there are built by the fishermen who use them. Only one man, Wilson Reid, can be classed a "professional" builder, but even he does not devote all of his working time to the construction of boats.[141]

(d) The lack of written records or architectural drawings nearly precludes the possibility of perceiving variety of experience. Winterton boatbuilders have very limited access to printed matter which might present alternatives to traditional methods of design and construction.

(e) Design decisions are made according to custom, generally, and originality in decision making is not particularly encouraged. In Winterton, design decisions are based

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[140]For the full text of this folksong see Kenneth Peacock, Songs of the Newfoundland Outports, National Museum of Canada, Bulletin No. 197, Anthropological Series No. 65 (Ottawa: National Museum of Canada, 1965), I, p. 64.

[141]Wilson Reid also operates a saw mill with his brothers, Charlie and Hubert, and works as a building contractor as well.

largely on traditional rules and formulas. Design changes, when they are made, usually take the form of minor adjustments made in response to observed negative performance characteristics. Sweeping design decisions involving the alteration of several sub-systems (performance correlatives) are rare. Winterton-built boats -- exhibiting nearly identical structural and decorative features -- offer mute testimony to the rigidity of custom.

VI

CONSTRUCTION

In the last chapter I discussed, at length, the ways in which Winterton boatbuilders design their craft, paying particular attention to the conceptual processes involved. However, I did not fully delineate how design conceptualizations achieve physical reality. In this chapter I will examine the ways in which boat designs become physical entities through the process of construction.

How can the construction process of the object or objects in question best be studied? Perhaps the answer to this question is obvious, but I will elaborate. With many objects, it is often possible to infer what methods of construction were used to fashion them, and also to draw some conclusions about the builders' relative skills, and other factors. However, inference is not a satisfactory method of precisely documenting how an object was constructed, although in some cases -- archaeological investigations, for example -- it may be the only available course.[142]

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[142] Artifactual evidence is of utmost significance to folklorist Henry Glassie in his work Folk Housing in Middle Virginia: A Structural Analysis of Historical Artifacts (Knoxville: University of Tennessee Press, 1975),

When dealing with a living tradition it is essential that the researcher directly observe actual construction activity.

In Part 1 of this chapter I will illustrate the fruits of my observational labours by presenting a sequential description of the building of one boat by one Winterton builder. Also, on the assumption that biographical information about a builder constitutes valid contextual data, I have included a short biography of the builder. The information contained in this section was gathered mainly through direct observation, but photographs, field notes and drawings, as well as tape recorded interviews with the builder were also valuable means of recording data.

The description of the process of construction detailed in Part 1 is not meant to be a statement of how all boatbuilders build all boats in Winterton. It should be interpreted as a description of how one man built a certain boat at a particular time in a particular place using methods that were fairly representative of those used by most of the builders in his community.

In order to place the construction of boats in Winterton in a wider focus, in Part 2 of this chapter I will discuss variations in the key factors influencing the

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and also to archaeologist James Deetz in his work In Small Things Forgotten: The Archaeology of Early American Life (New York: Anchor Press/Doubleday, 1977).

construction of boats by looking at the practices of other boatbuilders.

Although launching ceremonies and naming practices have no bearing on the construction of boats, since they are forms of expressive behaviour which, in many cultures, celebrate the completion of construction, I will devote attention to them in both sections of this chapter.

PART 1: Marcus French Builds a Rodney

Over a Cup of Tea

It was on a cold, drizzly day in March of 1978 that I drove to Winterton to talk with Marcus French. I had learned that he was building a rodney, one of the few boats under construction in Winterton at that time, and I wanted to observe the process and ask questions.

After a two hour drive from St. John's, I arrived at Marcus' home, a large, two story clapboard house overlooking Winterton's harbour and Trinity Bay. I found Marcus and his wife, Margaret, in the kitchen -- the center of activity in most Newfoundland homes -- and they welcomed me and gave me a cup of tea almost before I could hang up my coat. As I had come to expect from visits to other Winterton homes, the French kitchen was snug, warm and spotless. Especially spotless. The linoleum sparkled, the chrome and enamel woodstove glistened with a shine that belied its age, and a fresh tablecloth was laid out. Marcus and I talked awhile over our tea and then he took me outside to his workshop, or "store," as this type of building is called, and showed me the 16' 4" rodney that he was building. We stayed there for an hour or so and he explained construction steps, identified the various parts of the boat, and showed me his tools and moulds.

We returned to the warmth of the kitchen, where the smell of burning spruce mingled with the aroma of freshly-baked bread, and after a meal of "jowls and britches" (cods heads and roe), Marcus told me more about the boat that he was building and about himself, as well.

Marcus French: A Brief Biography

Marcus French was born in Winterton on September 24, 1917 to Francis and Eliza French, making him the first child of the fourth generation of the Winterton-branch of the French family.[143] Marcus' father worked as a fisherman six months of the year, as did most Winterton men at the time, and it was not surprising that, when he was old enough, Marcus began to go fishing with him. When he had finished his schooling, he decided to become a full-fledged

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[143] Detailed genealogical data on the French family of Winterton can be found in Frank French, "Frenches' Land in the Community of Winterton," MS on deposit at the Department of Geography, MUN, n.d.

fisherman. Forming a partnership with his father, Marcus fished in the inshore waters of Trinity Bay, where, using handlines and trawls, he fished principally for cod and turbot.

When he was 23, World War II erupted and he joined in the Allied cause by volunteering to go to Scotland as a member of the Overseas Forestry Unit, a non-combat outfit that contributed to the war effort by harvesting lumber. As a member of the Unit he held a variety of jobs, including log scaler, camp carpenter, and time keeper.

In 1946, Marcus returned to Winterton and soon married Margaret Warren of nearby New Perlican. He also returned to the fishery and resumed his partnership with his father.

In 1951, with his father's assistance, he built his first boat, a 21' motor boat that the two Frenches would use in the fishery. During the following year, a son -- Frank -- was born to Marcus and Margaret. In the same year Marcus purchased a small general store. Since, with the acquisition of this business, he could no longer devote a considerable portion of his energies to the fishery, he and his father sold their motor boat and built two smaller outboard-powered craft. The two men then fished separately until 1959, when Francis retired and Marcus gave up both his general store and his involvement in the fishery by accepting a full-time position with Winterton fish merchant E.J. Green & Co., Ltd. Marcus worked as a jack-of-all-trades for E.J. Green, however, his main responsibilities were bookkeeping and accounting. He retired from the firm in 1977.

In order to replace an aging rodney that he used for occasional fishing, during the winter and spring of 1978 Marcus built a new one. Launched in May of 1978 and equipped with a small outboard motor, the rodney was subsequently used by Marcus for the handlining of cod, and also for sealing. The following is a description of the construction of that boat.

The Construction of a 16' 4" Rodney

After deciding to build a rodney, Marcus' first task was to procure the materials that he would need to construct it. The principal construction material would be wood and, during the fall and winter of 1976-77 and 1977-78, whenever he went into the forest to harvest trees for home heating he also selected trees which would be suitable for boat construction. He was particularly intent on finding trees, "sticks," that contained shapes which mirrored the contours of boat parts such as the stem, sternpost, apron, stern knee, breasthook, deadwoods, and timbers. During this selection process, instead of using physical patterns or measurement devices, he relied on non-physical mental templates.

Marcus used spruce and balsam fir for all of the parts of the boat. The planks were of fir and nearly all of the other parts were of spruce. Aside from some of the planking stock, which was purchased from Reid's Mill in Winterton, he selected and cut his lumber by himself.

Although some of his lumber had been aging in his store for a year or more and was fairly dry, Marcus, along with the majority of Winterton boatbuilders, would have preferred to use undried, "green," lumber.

> They say that dry lumber, when it absorbs water, it never comes out of it anymore. It gets heavy. But with a green stick, when the water comes out, there's a tendency for it to be more buoy-some and then it evaporates and gets light. [Of] course it will get heavier after the years, but they say a new boat built out of green lumber will be the lightest boat you can have. But if she's built out of dry lumber, the water gets into it and it won't come out . . . . The water gets in there and it kind of hangs on, you know. This is what they tell me.[144]

Having collected the necessary materials, he was ready to begin construction activities on the first floor of the store, a low rectangular room lit only by sunlight entering through the open doorway and a small window. A waist-high work bench ran along one wall of the work room,

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[144]From my April 7, 1978 interview with Marcus French, MUNFLA accession number C4438-9.

Fig. 58: Marcus French's store, which he uses for boatbuilding, is the building on the left.

above which an array of hand tools -- planes, chisels, hammers, saws, wrenches, a caulking iron and caulking mallet, a brace and bit -- were stored in racks. Suspended from the center of the ceiling by ropes were battens, masts, oars, moulds and odd bits of wood. A grindstone, a trawl tub, and an outboard motor took up various parts of the room. The store was not furnished with electricity.

Marcus' first activity in the store was to get out the three principal timbers of the boat, called, respectively, the fore hook, the midship bend, and the after hook. (Fig. 38) In order to determine the shapes of these timber pairs Marcus used an adjustable device, handed down in his family, made of three pieces of wood. Referred to collectively as "moulds," the three-part device was made up of a small rectangular piece called the "rising board," a thin piece in the shape of a sharp curve called the "half bend," and a third, unnamed thin piece in the shape of a gradual curve. Upon each piece "sir" marks had been inscribed which, when properly alligned with marks on the other mould pieces, allowed Marcus to draw the shapes of the fore hook, the midship bend and the after hook. (Fig. 37) He also used the moulds to draw out the transom, or "counter," of the boat.

Originally, Marcus' three-piece device was used to derive the shapes of every timber pair in a rodney (approximately 19 pair), however, due to the fact that not all of the sir marks were identified as to location on the boat, and because, over the years, some of them had been obliterated, Marcus was unable to make full use of the device. As he explained:

> Now anybody who understands that mould, which I don't, could take that mould and before they scarfed their boat they would take the mould and mould out all their timbers and throw them to one side. That's the idea of it, you see.[145]

Unable to "mould out" all of the boat's timber pairs before the keel assembly was constructed, Marcus had to settle for the three that he could clearly identify: the fore hook, the midship bend and the after hook. Although not technically a timber pair, the counter was also shaped with the use of the three-pieced mould. Having traced the shapes of these three timber pairs onto his lumber, Marcus cut out the timbers roughly with a hand saw. He then refined their shapes with an axe and a spoke shave. The shape of the counter was also traced on building stock and cut out. Temporarily, the counter and the three timber

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[145] From my March 15, 1978 interview with Marcus French, MUNFLA accession number C4436.

pairs were set aside as Marcus shifted his attention to the backbone assembly.

The stem, the sternpost and the keel when joined together form the strongest and most important structural member of a boat, a component which is analogous to the mammalian backbone. Taking two of the naturally curved tree sections that he had collected, Marcus cut out a stem and a sternpost. From a piece of spruce selected not for its curvature, but for its straightness, he cut out a keel. These three pieces were then planed to a thickness of 2" and had scarf joints cut into them in preparation for assembly. Next, after it was determined that the joints fit together properly, the stem was fitted into the joint at the forward end of the keel, the sternpost was fitted into the after joint, small blocks of wood, called "deadwoods," were placed above the inboard seams of the two joints and, finally, the stem, sternpost, keel and deadwoods were fastened together with 4" galvanized spikes and 4" galvanized bolts.[146] (Fig. 59)

Then, a stout member of naturally-curved spruce, called the "apron," which runs from the forward edge of the stem deadwood to the underside of the breasthook (installed later), was bolted to the inboard face of the

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[146] This whole procedure is referred to as "scarfing the boat."

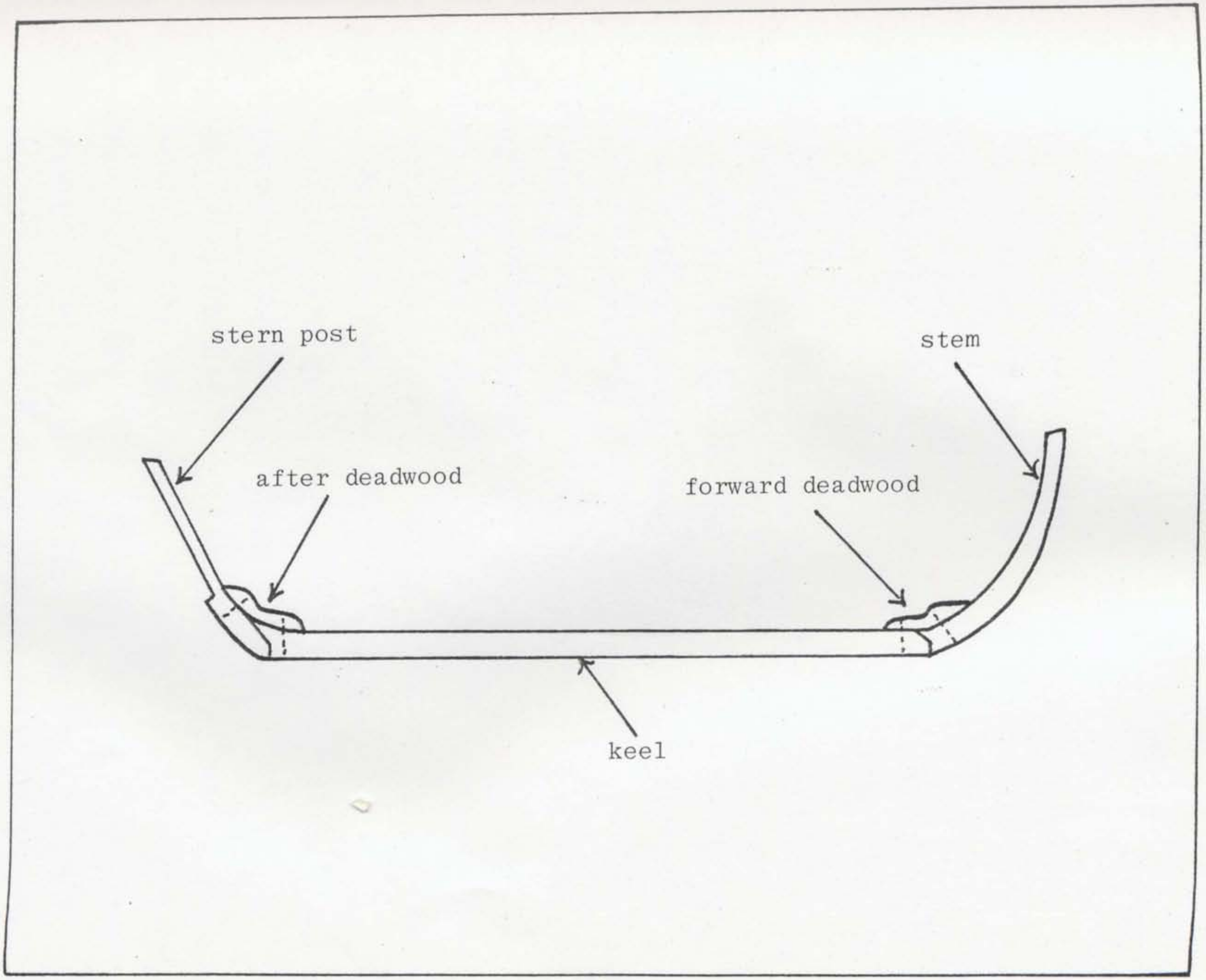

Fig. 59: Backbone assembly for 16' 4" rodney.

stem. The apron would serve as a reinforcement for the stem and also provide added support for the ends of the planks.

At this juncture, with the use of a chalk line, an important line was marked on the outboard face of the keel. Called the "timber line," it would later serve as a key reference point for measurements relating to sheer heights. Marcus placed the timber line 5/8" below the top of the keel.

After the timber line had been marked on the keel, the keel was brought into an upright position and set into blocks which had been nailed to the floor. Wedges were inserted between the keel and the blocks to ensure that the keel would not move. Next, the entire backbone assembly was leveled with the aid of a stout string and a plumb bob, and then locked into position by means of wooden braces, called "spur shores," which secured the stem, sternpost and timbers to the floor.

Once the backbone assembly had been placed in an upright position, leveled and braced, Marcus' next chore was to determine the placement of the previously shaped timber pairs and the counter. To do this, he used a general measurement formula consisting of the following elements:

(a) Fore Hook: The position of the fore hook is determined by measuring along a line, parallel to the top of the keel, which begins at the inboard face of the stem at the sheer and runs aft a distance which equals the full width of the fore hook timber pair at its sheer height. The fore hook is placed at the point on the keel where the perpendicular of this line intersects with the keel.

(b) Midship Bend: After locating the midpoint of the overall length of the hull (in the case of Marcus' rodney, the midpoint of the 16' 4" hull was 8' 2" from either end), the midship bend timber pair is placed forward of this point by the width of an individual timber, or approximately 1 1/2".

(c) After Hook: Following the same procedure used for locating the fore hook, measure along a line, parallel to the top of the keel, which begins at the inboard face of the sternpost at the sheer and runs forward by a distance which equals the full width of the after hook timber pair at its sheer height. The after hook is placed at the point where the perpendicular of this line intersects with the keel.

(d) Counter: The location of the counter is determined by finding the point on the outboard face of the sternpost which intersects with a perpendicular line 8" above an extension of the timber line. This point represents the position of the bottom of the counter, called the "tuck."

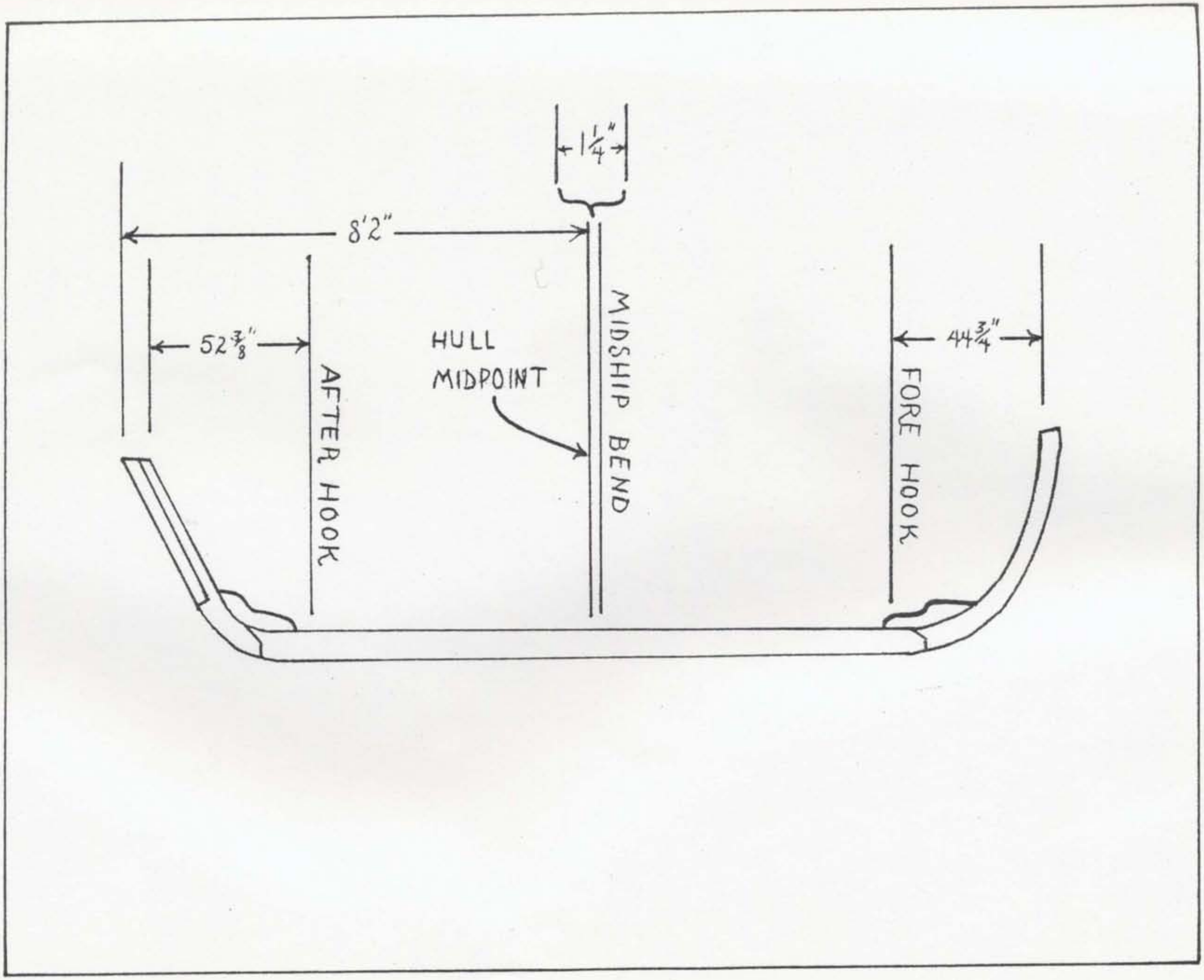

Fig. 60: Measurement formulas for 16' 4" rodney.

After ascertaining the proper sites for the fore hook, midship bend, and after hook, Marcus then cut notches into the keel to the depth of the timber line (5/8"), and set the three timber pairs into their respective notches. Next, the timber pairs were fitted with cross spalls, leveled, and secured to the floor with spur shores. The sternpost was shaped to receive the counter, and the counter was bolted onto it.

With these pieces in place, he then turned to the placement, shaping and installation of the remaining timber pairs. The spacing of these timbers was done on a sectional basis. That is, instead of attempting to calculate a uniform spacing of all of the timbers in the hull, Marcus spaced them evenly within each of the four divisions of the hull made by the three initial timbers. Four timbers were placed within each division, making a total of 19 timbers.[147] In regard to the shaping of this second set of timbers, since his inability to decipher all of the marks on his moulds prevented him from moulding out all of the timber pairs ahead of time, he was forced to use an alternate method. After the three initial timber pairs and the counter had been secured, he used long, thin, flexible pieces of wood, called "ribbands," to describe the approximate shape of the

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[147] On the average, however, timbers were spaced approximately 10" apart (centre-centre).

hull. He then used this approximation to deduce the dimensions of the remaining timbers. He did this by tacking the ribbands to the stem, counter and the three timbers, in horizontal tiers on both sides of the boat, and then measuring outboard to the ribbands from the centre of the keel at the points where timbers were to be placed. Using these measurements, the timber shapes were traced onto stock, cut out, and shaped as before. In order to be certain that the bottom of the hull would describe a smooth, "suent" curve when the garboard was laid, Marcus bent a batten around the fore hook, midship bend and after hook, near the keel. The bases of the remaining timbers were then lowered into notches in the keel which had been cut to this line, then leveled and braced.

After all of the timbers had been installed on the keel, the next operation was the locating of the sheer height -- the fair curve described by the top edge of the hull. In order to determine the sheer height, Marcus used another measurement formula:

(a) Sheer height at stem: The sheer height at the stem is located at the point on the stem which intersects with a line, 30 1/2" in length, which originates at, and is perpendicular to, an extension of the timber line.

(b) Sheer height at counter: The sheer height at the counter is located at the point on the counter which intersects with a line, 33" in length, which originates at, and is perpendicular to, an extension of the timber line. When these two points had been established, he tacked one end of a batten to the stem at its sheer height, and the other end to the counter at its sheer height. He then pulled the batten downward until it touched the sheer heights previously marked on the fore hook, midship bend and after hook, and, provided that the line that it described was a fair curve, tacked the batten to these timbers. Using the batten as a guide, the sheer heights of the remaining timbers were established. This procedure was conducted on both sides of the hull.

Following the establishment of the sheer heights, the "risings" -- internal, horizontal battens attached to the timbers on both sides of the hull -- were installed. The positions of the risings was determined by marking a line 6" below the top of the sheer on the inboard face of all of the timbers from the stem to the after hook, and then tapering it upward, gradually, to a point 5" below the sheer at the counter. These measurements having been made, the risings were put into position and nailed to the timbers.

Planking then commenced. Using a flexible batten as a guide once again, a fir sheer, or "binding," strake was shaped and attached to the hull, with its top edge running along the sheer line. When port and starboard

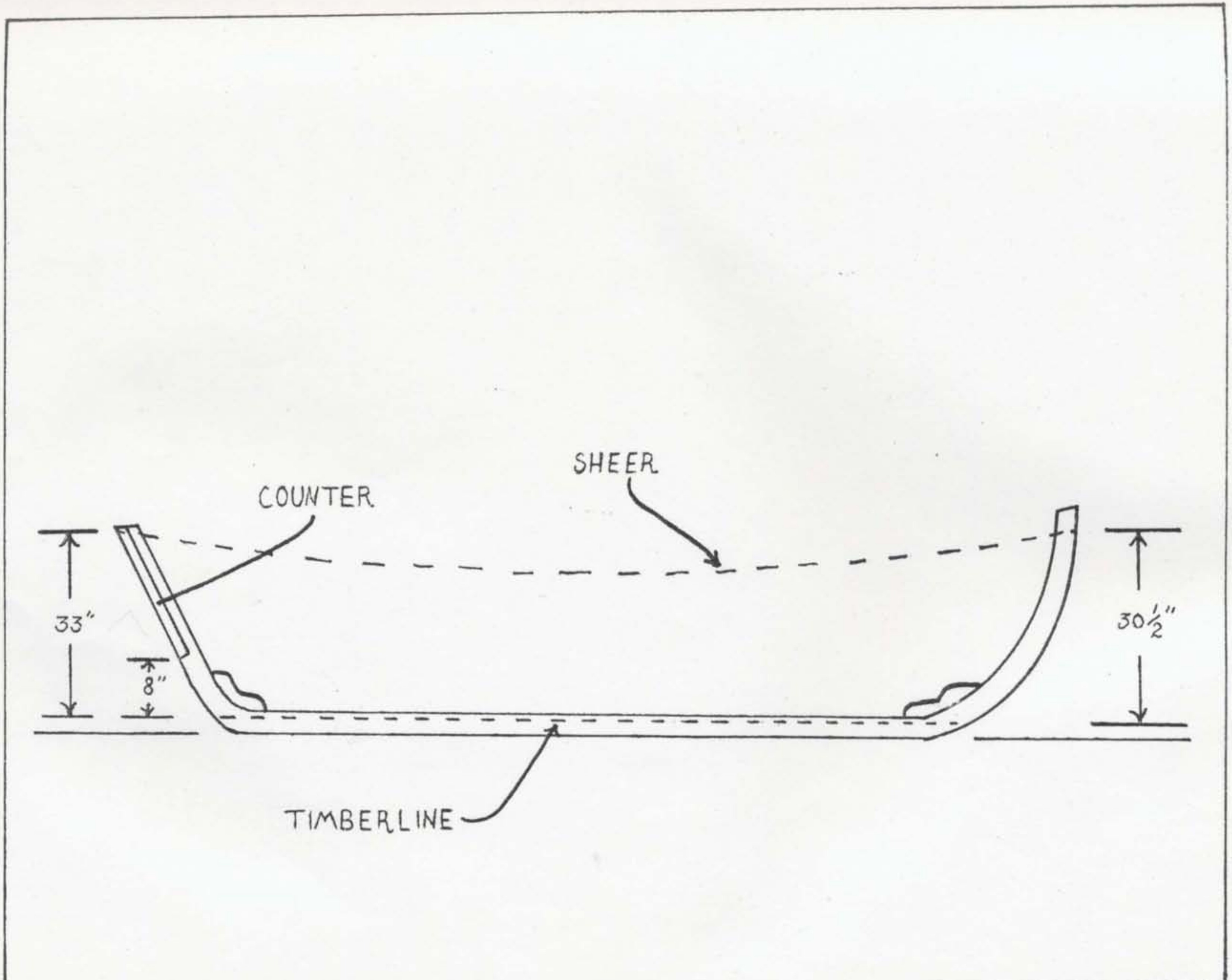

Fig. 61: Locations of sheer heights and counter for 16' 4" rodney.

binding strakes had been installed -- thus binding together stem, timbers and counter -- the hull was released from the floor blocks and the spur shores.

Next, a rabbet line was marked out on the stem and the keel with the use of a batten. Then, with the use of a chisel, port and starboard rabbet grooves were cut into the stem at an angle slightly greater than 45^{o}, and to a depth equal to the thickness of the planking (in this case, 11/16" dressed). Shallower grooves were cut into the keel. The stem rabbets would receive the forward ends of the planks, and the keel rabbets would receive the lower edges of the garboards.

After the rabbets had been cut, the binding strakes were removed, trimmed to fit into the stem rabbets, and then permanently fastened with 1 1/2" galvanized wire nails. Next, using a process that is known as spiling (although it is not known by any particular term in Winterton), the shapes of the remaining planks were determined. Easier to demonstrate than to describe,[148] this process consisted of placing a wide batten, called, in Winterton, a "rule staff,"

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[148] For more detailed descriptions of this procedure, see: Howard I. Chapelle, Boatbuilding: A Complete Handbook of Wooden Boat Construction (New York: W.W. Norton, 1941), pp. 300-302; and Walter J. Simmons, Lapstrake Boatbuilding (Camden, Me.: International Marine Publishing Co., 1978), pp. 69-74.

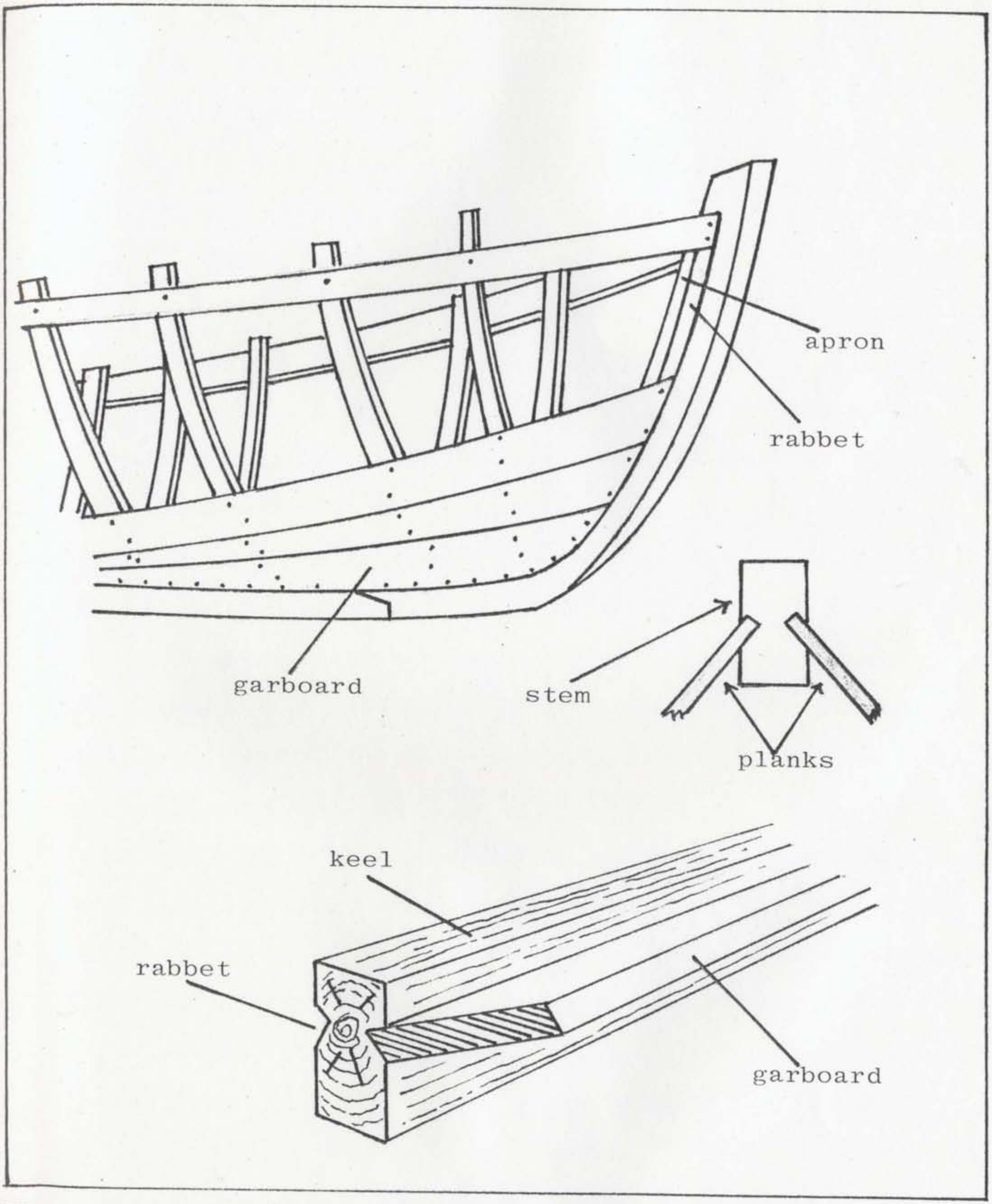

Fig. 62: Stem and keel rabbets.

against the outboard face of the timbers with its upper edge resting along the lower edge of the last plank installed. Then, with one point of a pair of compasses (set to a specific opening), points were plotted on the rule staff at regular intervals down the length of the plank and marked with chalk. Then, the rule staff was removed from the hull and placed on top of the stock for the next plank, and, with the compasses still set to the same opening, the shape of the lower edge of the last plank installed on the hull was transferred to the stock in the form of the top edge of the new plank. The points that were transferred to the stock were then connected with the use of a batten, and excess wood was removed with a draw knife and a 30" wooden plane. This procedure was used only once for each pair of planks, since the first was used as a direct pattern for its opposite number. In this manner, Marcus laid down nine strakes of planking on each side of the hull. The only deviation from the routine involved the use of a rounded-sole hollowing plane which was used to scoop out the bellies of planks which would lie snugly against areas, such as the "crop of the bulge," where tight curves were present.

Before the garboard planks were installed, holes, 1/2" in diameter, were drilled through the stem and stern keel scarfs at the middle of the rabbet. Then, pine dowells were driven into the holes and caulked. Called "stopwaters,"

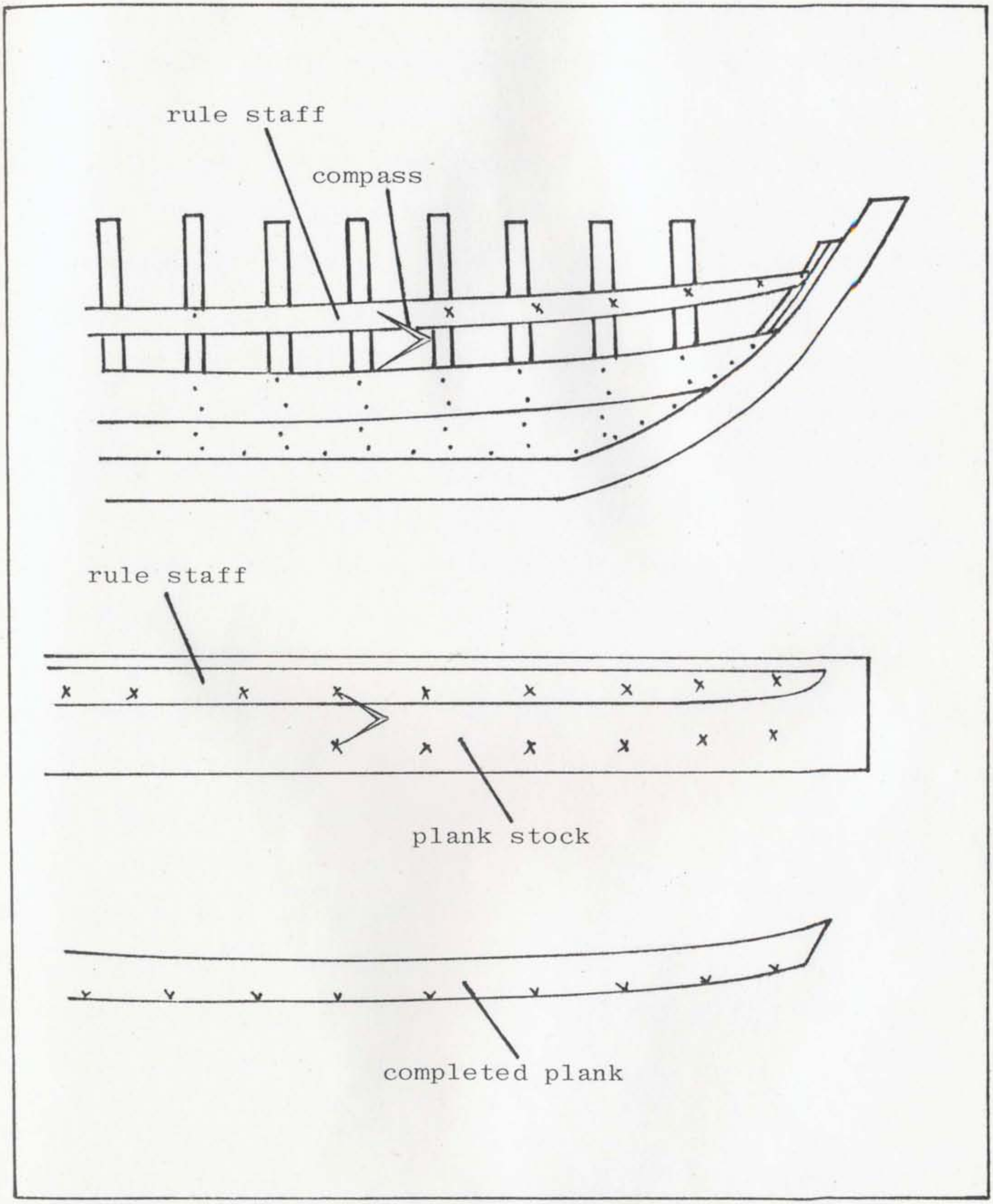

Fig. 63: Use of the rule staff.

the name for the dowells succinctly reveals their function: they prevent water from leaking into the boat along the scarf joints.

In regard to the sequence of planking, after the binding strake, Marcus planked downward as far as the crop of the bulge, alternately laying planks on the port and starboard sides. Then, turning the hull over, he planked upward (i.e. toward the sheer), from the garboard to the crop of the bulge. At this point, a narrow gap remained between the upper and lower strakes of planking at the portion of the hull where the greatest degree of curvature was present. This gap was filled, and the planking process completed, by the laying of the plank known, appropriately, as the "fuller."

Following the completion of planking, the plank nails were driven slightly beneath the plank surfaces in order to permit the fairing off of the hull with a small block plane and a hollowing plane.

To make the skin of planks water-tight, Marcus caulked the hull by driving oakum between the planks with a caulking iron and caulking mallet. For additional protection against leaks, he applied a petroleum-based sealing compound inboard, to the planks nearest the keel.[149]

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[149] I have been told that in previous years a mixture of tar and stove oil was used for this purpose.

Construction activity then moved inboard. Short sections of wood called "ceilings" were laid over the timbers, near the keel, for added stiffness. The working areas, or "standing rooms," were fitted with platforms called "shoots." Bulkheads were installed, dividing the hull into three main sections: forward standing room, midship room, after standing room. The midship room, which would serve as a fish well, was lined with a sheathing of planks and topped with removable "covering boards." As interior work progressed, thwarts, gunwales, "sparkins" and a breasthook were installed. To guard against wear and tear on the keel, a replaceable strip of wood, called a "shoe," was screwed to its bottom surface. A hole, or "score," was cut through the counter to accommodate a 15 foot sculling oar, and wooden thole pins (used singly with circular rope "whiffs') were prepared for two 7-8 foot long "paddles."

Finally, two coats of common house paint were applied to all surfaces -- grey inboard and white outboard -- and the boat was finished and ready for the water.

When Marcus finally launched the boat, in May, he did so without fuss or ceremony. And, in keeping with the local custom, he did not bestow it with a name.

Fig. 64: Marcus French with 16' 4" rodney under construction (March, 1978)

Fig. 65: Bow of Marcus' rodney with all planks installed. Note: the short pieces of wood nailed to the stem act as temporary clamps for the ends of the planks, preventing them from popping away from the stem when pressure is applied at the after end of the plank.

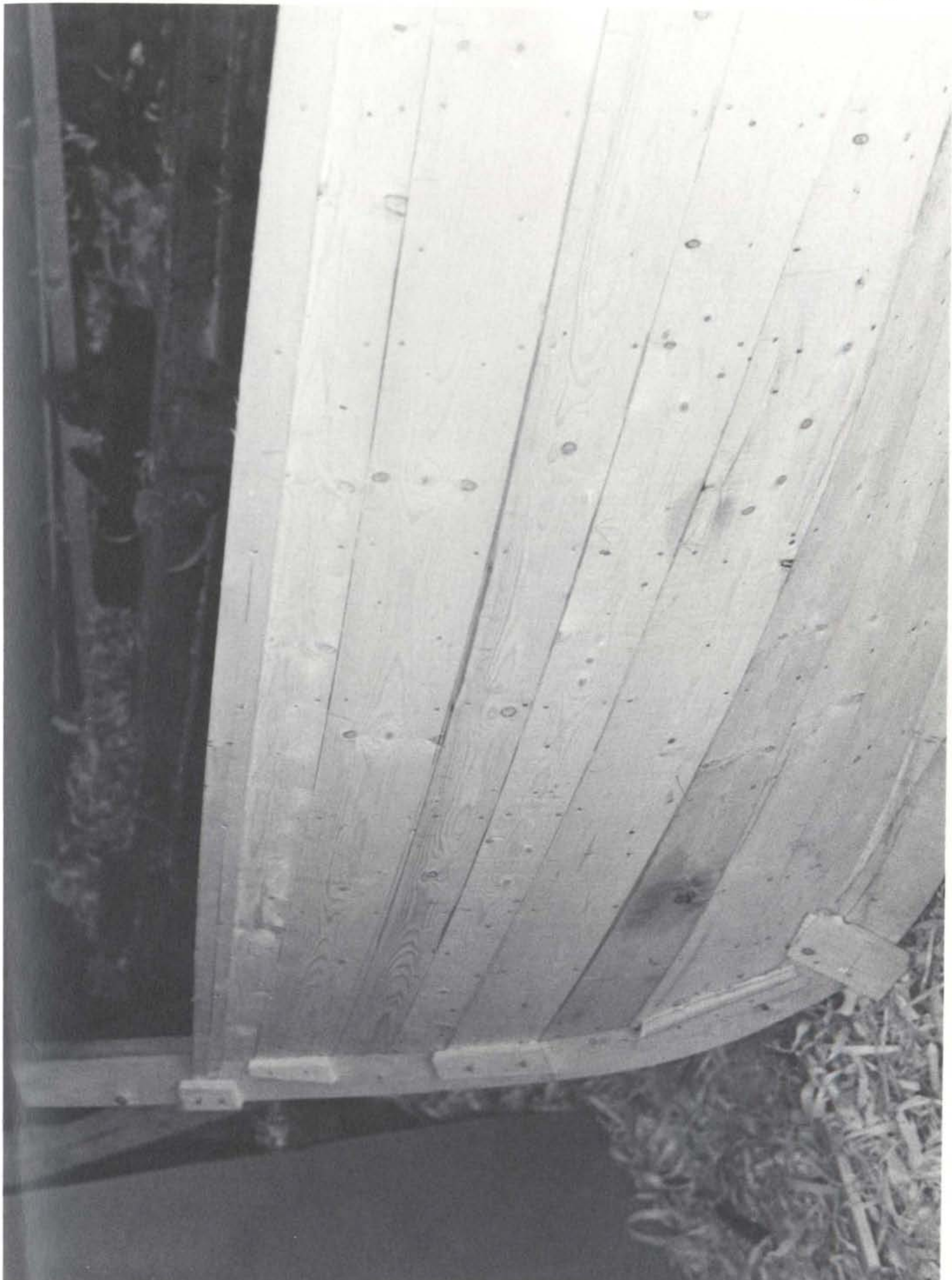


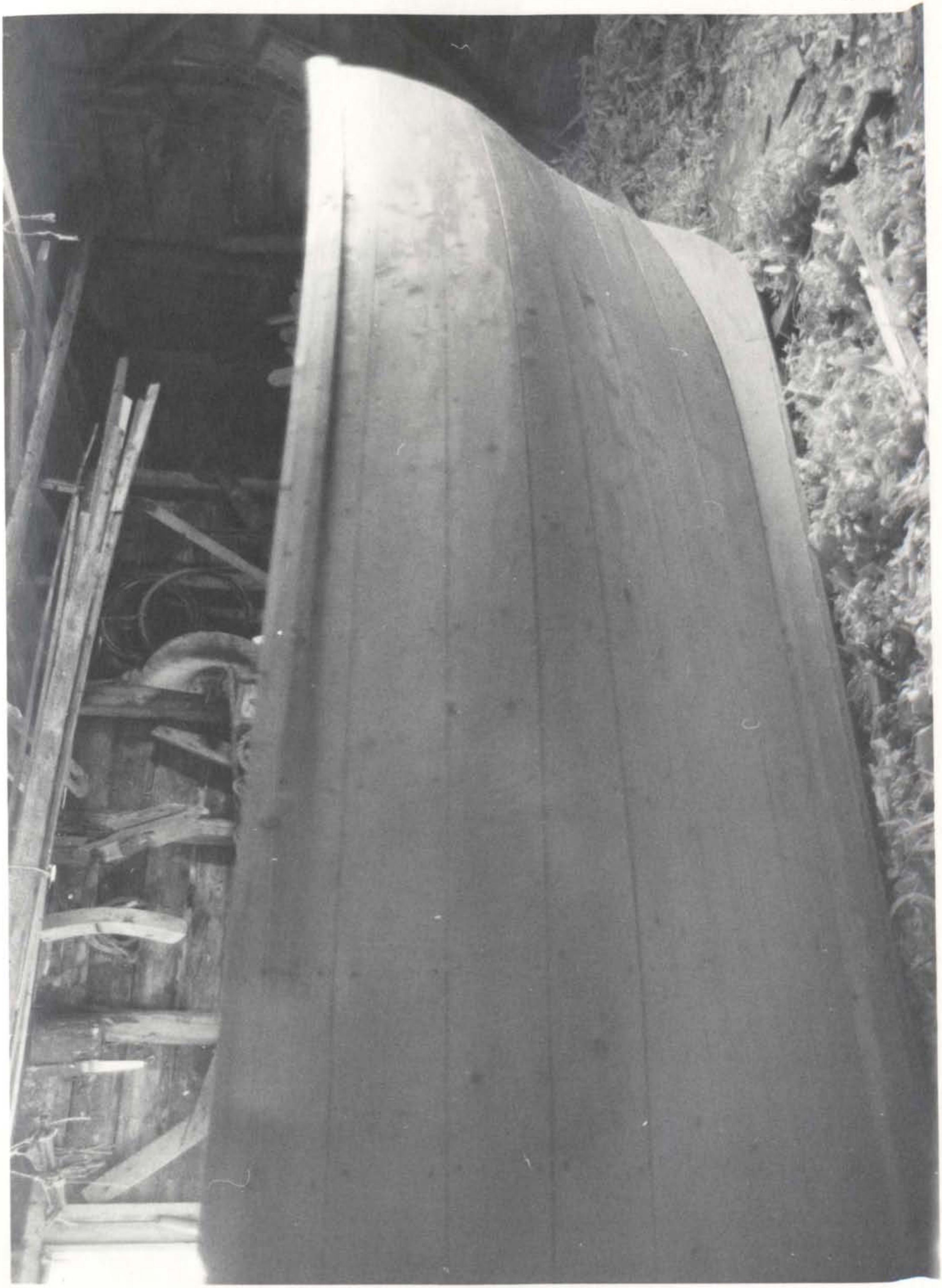
Fig. 66: Inboard view, amidships.

Fig. 67: Inboard view of the stern.

Fig. 68: Close-up of stern, inboard.

Fig. 69: Outboard view of stern before plank ends have been cut off.

Fig. 70: The hull after the plank ends have been cut off and the hull has been planed to make it "suent."



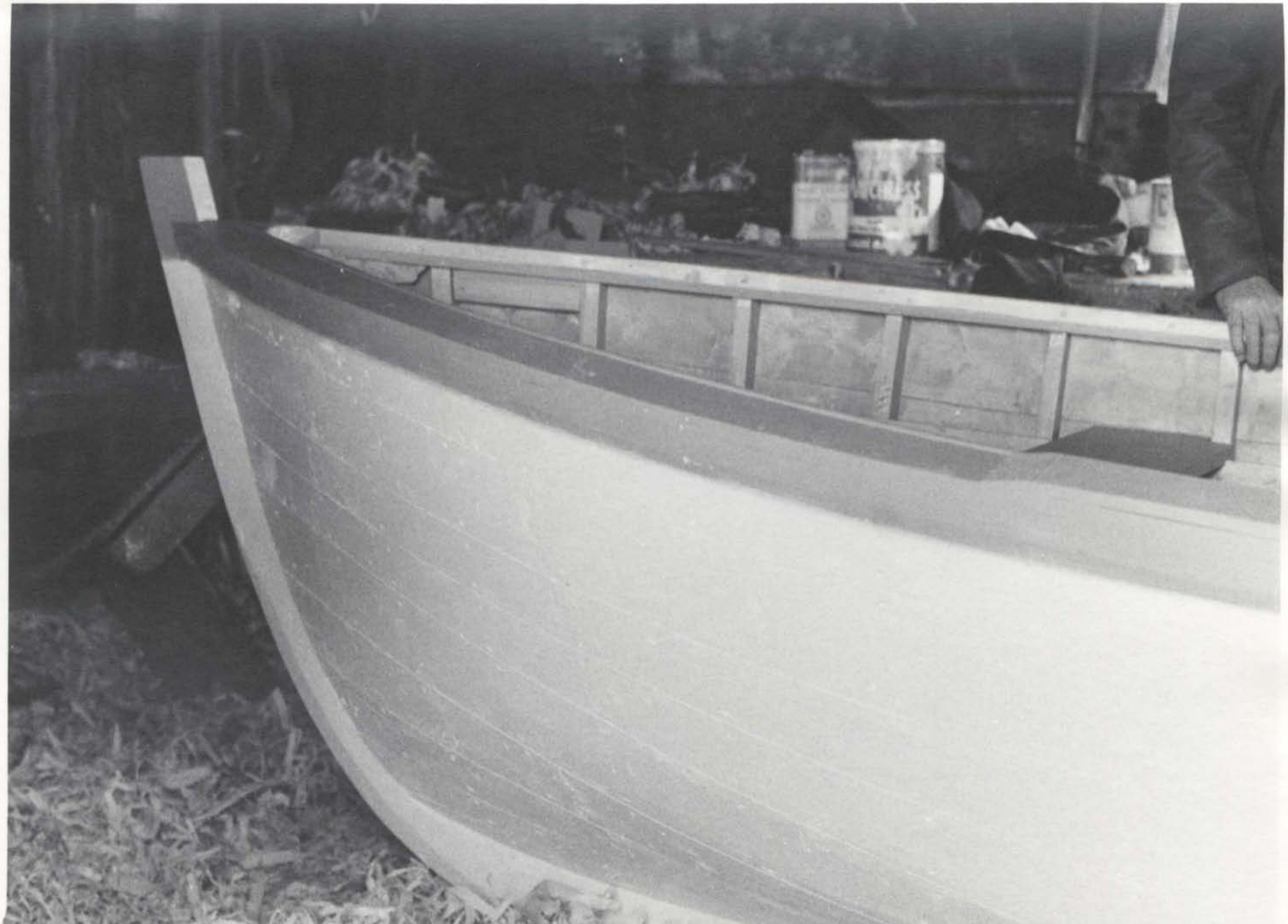


Fig. 71: Bow of rodney just after painting.

Fig. 72: Inboard view looking forward. Note: hole in thwart is for mast.

Fig. 73: Inboard looking aft. Note: sculling hole cut in the counter.

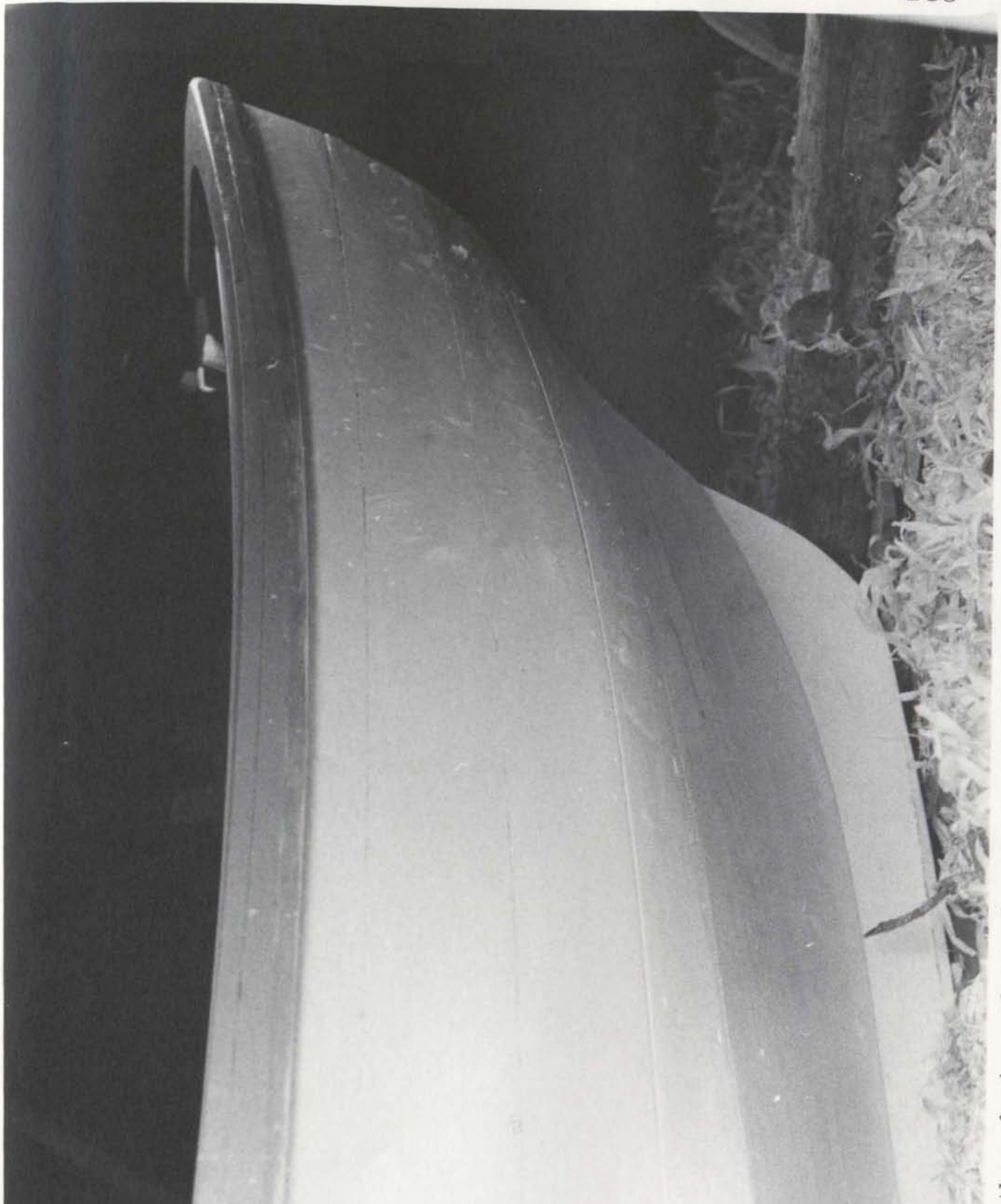


Fig. 74: Outboard view of completed stern.

Fig. 75: Completed rodney in Winterton Harbour. It is equipped with a 6 h.p. outboard motor, a sail, a sculling oar, and two "paddles."

PART 2: Variation in the Factors Influencing Construction

Proficiency of the Builder

As we have seen from the foregoing description of how Marcus French built a rodney, the skillful completion of many operations is required if a boatbuilder is to produce an adequate craft. If we want to make statements about one builder's ability to accomplish these operations, his level of proficiency vis-à-vis those of other builders, how should we proceed?

Instead of formulating criteria for the evaluation of the relative expertise of a builder based on his mastery of the many operations performed during the construction of a craft (a highly subjective procedure, at best), I believe a more objective course is to analyze the major factors which tend to increase a builder's over-all proficiency. Based on my interviews with Winterton builders, the following factors have emerged as those which have the most influence on a builder's level of expertise:

(a) Basic intelligence.

(b) Woodworking experience. Nearly all of the men interviewed for this study who are generally considered to be "good boatbuilders" by their peers have had a great deal of experience as carpenters and woodsmen. As residents of a small, coastal community where occupational specialization is rare, these men have had to acquire the ability to build and/or repair their homes, their fences, their fishing premises, and, through the annual chore of cutting wood for home heating and for various construction materials, they have gained experience in the selection of trees. Nearly all of my informants have been employed as professional carpenters, woodsmen, or both.

(c) Number of boats built. Generally, the men who have gained reputations as good builders have built several boats, and it seems reasonable to assume that, in most cases, a builder's expertise will tend to increase in direct proportion to the number of boats he has constructed. Frequent involvement with the activity of boatbuilding allows an individual more time to perfect the necessary skills, and, as we have seen by the example of John Reid, a high level of building activity can promote rapid improvement in design.

(d) Proficiency of teacher(s). While, as I stated above, it is generally true that a builder's level of skill tends to increase with the number of boats he has built, the expertise of a builder is not always directly related to the number of boats he has built. The competency of his teachers -- the persons from whom the bulk of one's boatbuilding knowledge is obtained --

has much bearing on the quality of the boats produced by the inexperienced builder. For example, Eleazor Reid has built only two boats by himself, yet he is considered to be one of Winterton's most knowledgeable boatbuilders. Why? Over the years he helped his older brother, John, with the construction of many boats and, in this way, acquired much of the large body of boatbuilding knowledge his brother had accumulated. Another example is Eleazor's nephew, Wilson Reid. Although, as of the summer of 1979, he has built only four boats, through the guidance of his uncle and Herbert Harnum (who has built over 30 boats), he has learned many of the finer points of design and construction.

Work Place

Most boats built in Winterton are not constructed in buildings specifically designed for boatbuilding. Men build boats wherever they can find the space. Frequently, this means that they build out-of-doors. However, if suitable buildings are available, builders do not hesitate to make use of them, as the protection that a building affords will allow them to complete construction sooner, since they will be able to work during periods of inclement weather. The size of the craft under construction will, of course,

Fig. 76: Boats are frequently built outside. This 17' 10" speedboat was built in 1979 by Clarence Brown, with the assistance of Herbert Harnum.

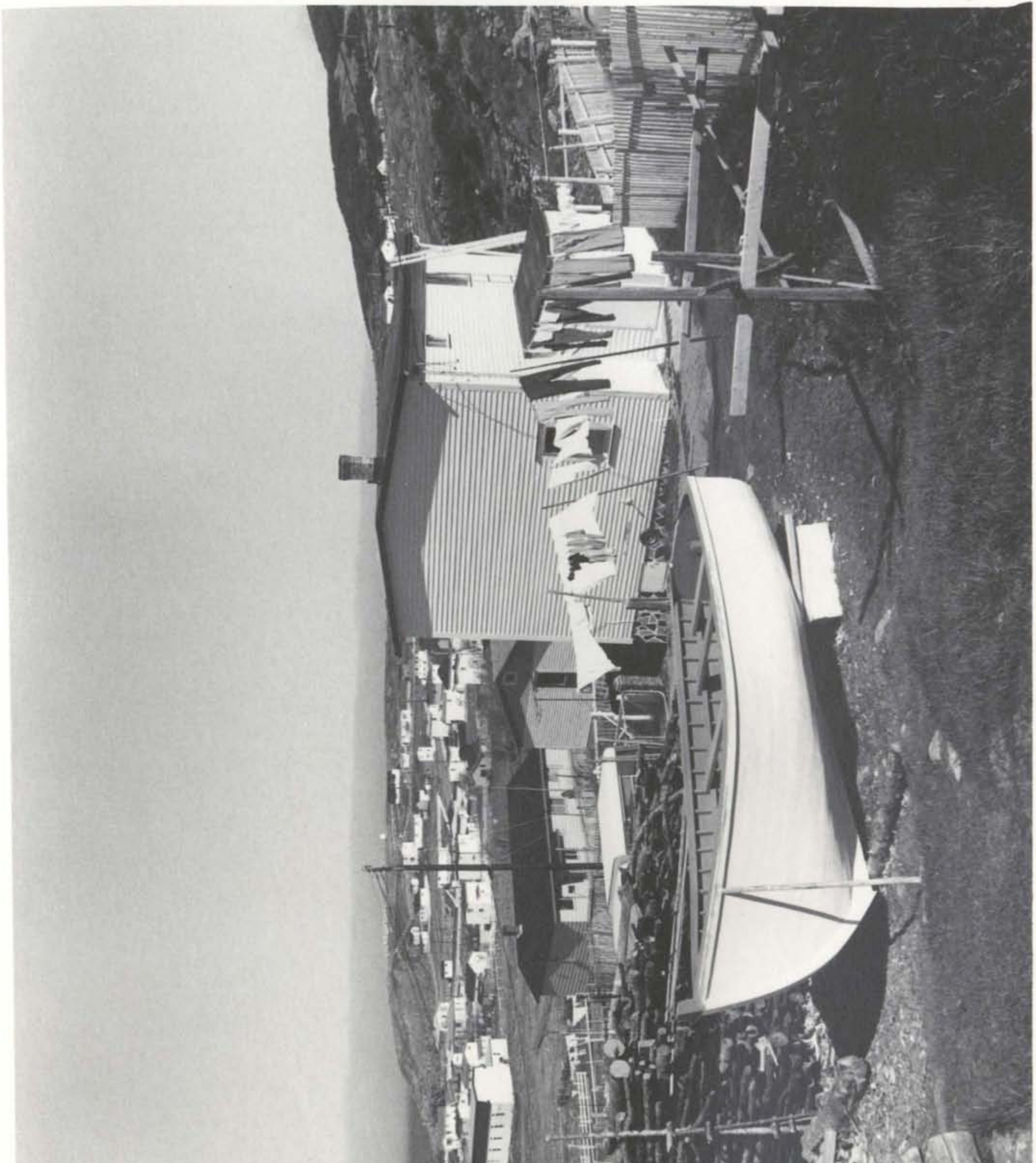


Fig. 77: 21' motor boat under construction in Wilson Downey's garage.

be the final arbiter of where the builder can work. Most builders can find enclosed working space for a small craft, such as a 16' rodney, but a 34' trap skiff is another matter entirely. Presently, most Winterton builders work either out-of-doors, in stores, or in garages. Only one builder -- Wilson Reid -- has a structure which is used solely for boatbuilding.[150]

Working Conditions

Working conditions are governed largely by three factors: work place; weather; and, the time of year during which construction activity takes place. Obviously, for a man who builds outside during the late winter and early spring, working conditions will be fairly harsh, and the elements (in the form of low temperature, rain, snow and ice) will prevent him from working on many days. For the man who works in an enclosed space during the same time of year, working conditions will be less severe. In addition, comfort and productivity may be increased through the availability of a source of heat (such as a wood stove) and a source of electricity (for lights and power tools). However, individuals who are able to build during the warmer months of the year will have generally good

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[150] This structure is a large (approximately 20' x 40'), open building that was built onto his sawmill.

working conditions, whether they work indoors or out-of-doors.

Time of Construction Activity

Historically, Winterton boatbuilders have built their boats during the times of the year when fishing and fishery-related activities were at a standstill -- usually between October and May -- and for the majority of contemporary fishermen/boatbuilders this is still the case.

Boatbuilding lumber is usually selected and cut by the builder during the late fall as he collects a supply of firewood for the winter. Actual construction activities generally take place during late winter and early spring, roughly from the beginning of March to the beginning of May. Boatbuilders attempt to finish their boats in time for the start of the fishing season, which commences when "drift" ice has left Trinity Bay, normally sometime in May. Once again, Wilson Reid's building activities deviate from the norm. Since he is engaged in boatbuilding on a more-or-less full-time basis, he works year-'round (provided that he has sufficient orders for boats).

Tools

"You can build a boat with a hammer, a saw and an axe," one builder told me. Under questioning he went on to name several more tools that he did, in fact, use, but his initial statement drove home the point that, in Winterton, boatbuilders make use of a minimum number of tools. Divided into three categories -- hand tools, power tools, and specialized boatbuilding tools -- the following is a listing of tools used by Winterton boatbuilders:

(a) Hand tools: hammer, rip saw, lock or keyhole saw, axe, hatchet, spoke shave, block plane, joiner plane, chisels, draw knife, bevel gauge, wrenches, "jack screws" or C-clamps, compasses, plumb bob, chalk line, bit and brace, hand drill. (Nearly all of these tools are used by all builders.)

(b) Power tools: mill saw, table saw, "Skil" saw, band saw, chain saw, thickness planer, electric drill. (More expensive than the hand tools listed above, the use of these tools is less common. The mill saw and the thickness planer are used by only one builder -- Wilson Reid.)

(c) Specialized boatbuilding tools: caulking iron, caulking mallet, "rule staff," dubbing adz, hollowing plane, and steam tank. (Of these specialized tools, only the caulking iron and the caulking mallet are used by most builders. The hollowing plane, an extremely useful tool for adding curvature to planks, is no longer readily available. Consequently, builders who have not inherited hollowing planes must either borrow them from those who have, or make their own. The adz, a tool generally used in the construction of fairly sizeable craft, is similarly scarce, but, unlike the hollowing plane, demand for it is small. Use of the "rule staff," generally considered an "old-fashioned" tool for taking the shape of planks, appears to be declining. The steaming tank is, of course, employed only by those builders who construct boats with steam-bent timbers. Steaming tanks are unsophisticated devices fashioned from discarded water heaters, metal drums, or other adaptable objects.)

Materials

Basically, five types of materials are used in the construction of boats in Winterton: woods; fastenings; caulking materials; protective coatings; and, engines and engine gear.

(a) Woods. Locally cut spruce and balsam fir ("var") are the species of wood most commonly used, and are often the only types used in the construction of a boat. However, if a suitable piece of hardwood, such as birch, can be procured for a keel, builders prefer to use it. Among builders who employ the steamed timber technique, another hardwood -- "juniper" -- is used for timber stock. Regardless of the woods used, most builders use undried, "green" wood, and adhere to the maxim: a boat built with green wood is the lightest boat you can have.

(b) Fastenings. All builders contacted use galvanized fastenings: common galvanized wire nails, galvanized spikes, and galvanized bolts. Specialized, costly, and difficult to obtain fastenings, such as brass or bronze screws and bolts, copper rivets, and galvanized boat nails, are practically unknown.

(c) Caulking materials. All builders surveyed caulk their boats with oakum. After caulking, some builders apply a putty-like steam filler over the oakum or brush on copious amounts of paint.

(d) Protective coatings. All of my informants indicated that they paint their boats with common exterior house paint. In most cases, white paint is used for all outboard surfaces except the rail, and grey is used for all inboard surfaces plus the rail. Prior to painting, many builders apply a coat of tar or some commercial sealant to the lower planks, inboard, as a preservative measure.

(e) Engines and engine gear. Basically, there are three types of engines which are installed in Winterton-built boats: gasoline-fueled outboards; gasoline-fueled inboards; and, diesel-fueled inboards. Without exception,

Fig. 78: Wilson Reid (left) and his brother, Hubert, looking for a log suitable for plank stock.

outboards are used to power small boats (e.g. rodneys and speedboats), and inboards are used for the larger craft (e.g. motor boats). Outboard motors range in size from 5 to 25 h.p., inboard gasoline engines (old one and two cylinder make-and-break models, for the most part) are 3 to 7 1/2 h.p., and inboard diesel engines are in the 15 to 30 h.p. range. Unlike outboard motors, which are, essentially, self-contained units, inboards require additional gear, in the form of a solid brass shaft and a brass or bronze propeller.

Work Technique

There are dozens of separate operations involved in the construction of a boat, all of which, from the way a nail is driven to the manner in which a paint brush is held, could be described as individual work techniques. However, because the performance of most of these operations exhibits a high degree of uniformity from builder to builder, I have elected to discuss only the two work techniques which show the greatest amount of differentiation: planking and timbering.

All Winterton builders construct their craft using the carvel planking technique, a tradition long known to boatbuilding cultures all over the world. In essence, carvel planks are those which abutt each other edge-to-edge and are fastened, not to each other, but to the stem, stern and timbers.

However, while all builders plank their boats carvel-fashion, there are variations in the general technique. Variation occurs in two key areas: the manner in which the shapes of planks are obtained; and, the order in which individual planks, or strakes, are fastened to the hull.

One method for determining plank shapes involves the use of a flexible spiling batten called a "rule staff." With this simple tool and a set of compasses, builders establish the line of the top edge of the new strake of planking by transferring the shape of the bottom edge of the last plank installed to the plank stock. (This method is fully described in Part 1 of this chapter.)

The other method for determining plank shape does not require the use of a rule staff. For want of a better term, I will refer to this method as direct tracing. Instead of using a rule staff and compasses to transfer the desired shape to the plank stock, builders who use this method determine the shape of the top edge of the new strake of planking in a direct manner that eliminates the intermediate steps of marking a spiling batten and then transferring these marks to the plank stock. The practioners of the direct tracing method begin by clamping the plank stock to the last plank installed on the hull. Then, by drawing a pencil along the bottom edge of the last plank installed, a line is marked on the inboard face of the stock. Next, the stock is removed from the hull, the pencil marks are faired with a batten, and a saw cut is made down that fair line. In this way the top edge of the new plank is made.[151] (Figs. 85-89)

The sequence in which planks are laid is another significant variable in the planking process. Historically, builders have laid down the binding strake first, followed by the next two or three planks below.[152] Then, the garboard, the plank adjacent to the keel, is laid and planking proceeds upward. The last plank installed on the hull usually is located at the crop of the bulge. This plank fills the gap between the upper strakes of planking and the lower strakes, and is called the "fuller."

The other planking sequence used by builders in Winterton also begins with the laying of the binding strake, followed by the installation of the top-most strakes and then the garboard. However, this sequence differs from the

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[151]After the saw cut is made, in order to ensure that a good fit is achieved with the last plank, it is usually necessary to remove wood from the edge of the new plank, here and there, with a plane.

[152]Planks are installed in pairs, since a plank on one side of the hull can be used as a pattern for its mate on the other.

one formerly described in that it eliminates the use of the "fuller." Obviously, builders who follow this system of planking must be more careful in planning plank widths. As a result, those skilled in this method are capable of producing hulls which display strakes of planking which present the appearance of uniform width and overall symmetry.

Regardless of the planking sequence used, Winterton builders generally consider the planking process to be one of the most exacting aspects of boat construction, and, from the viewpoint of safety afloat, certainly one of the most critical. Planks must fit against each other tightly and be securely fastened to the timbers and the stem and the stern in order to form a reliable barrier against the sea.

In addition to functional considerations, aesthetics play a big part in the evaluation of a planking job. High marks for planking skill go to the builder who can fashion a smooth, "suent" hull of symmetrically appearing planks identical on both sides of the hull. Low marks go to the builder who commits such errors as failing to plane off humps and hollows from his hull, and who relies on seam fillers, caulking compounds and other substances to cover up ill-fitting plank-to-plank joints.

There are two basic methods of timbering used in Winterton: the use of sawn, naturally-curved timbers; and, the use of steam-bent timbers. As was extensively discussed in the last chapter, the use of sawn, naturally-curved timbers involves the selection of trees which possess curvatures that approximate the shapes of a boat's timbers. The efficacy of this method lies in the inherent strength of the grain of the wood. A timber formed from a piece of wood which has a grain pattern that follows the shape of the timber will be far stronger than a timber formed from a piece of wood whose grain does not follow its shape.

After they have procured curved "sticks" for their sawn timbers, builders side them and use templates, usually called "moulds," to mark out the shapes of the three initial timber pairs on the stock. The timbers are then cut out, trimmed, leveled, fastened to the keel and braced. Measurements for the remaining timber pairs are determined with the use of ribbands, fastened to the stem and stern, which pass over the three initial timbers.

Those builders who employ steam-bent timbers make use of straight-grained, knot-free bolts of "juniper," ranging in size from 1" x 1" laths (for speedboats) to 2" x 3" timbers (for trap skiffs). Obviously, because they are not naturally curved, an artificial means must be used to give these straight pieces of wood the ability to assume a curved shape. This is done through the application of steam. The pieces of juniper are inserted in a metal container partially filled with boiling water, and allowed to soak up steam for several hours. When they have been steamed for a sufficient period of time, they are removed from the tank and, before they lose their flexibility, are quickly wrapped over the ribbands (which have been fastened to stem, stern and temporary moulds), fastened to the keel, and then braced at the top with cross spalls to inhibit twisting.

The use of sawn, naturally-curved timbers is a very old method, and it has probably been used in Winterton ever since boats were first built there. The steam-bent timber method, however, is a fairly recent innovation, having been introduced in Winterton sometime during the 1960's. Presently both methods are employed in Winterton, but, in general, builders are committed to one, not both, of the methods. Between the proponents of the two techniques the issue of which method is superior is a contentious one.

The debate between the advocates of the older, established method and the advocates of the newer method presents a classic example of paradigmatic confrontation. The older paradigm is claimed by most, but not all, of the older builders in the community, while the newer paradigm is claimed by most, but not all, of the younger builders. Even though the use of boiling water and other liquids has long been an accepted means of rendering plank stock more pliable, those who use the sawn timber method are generally quite skeptical about using hot liquids or steam to bend timbers. Specifically, they express considerable doubt about the strength and longevity of steam-bent timbers. Many appear to be convinced that sawn, naturally-curved timbers are absolutely and unquestionably superior. The following excerpt from an interview with Herbert Harnum, 60, an experienced "older" builder trained in the sawn timber method who now favors steam-bent timbers, illustrates the resistance that many fishermen and boatbuilders have to steam-bent timbers:

> Taylor: Did fishermen trust steamed laths when they were first introduced?
>
> Harnum: Oh no, no, no. That was useless, anything new is useless, anyhow, you know. Same thing with the boats we're building in there [at Reid's Mill]. Fellas come in there now and they want the old-fashioned timbered boat, you know, that's what they want. They don't go for that [steaming]. No good telling them it's a stronger boat because they're not going to believe it, see.[153]

Steamed timber proponents, despite the criticism they sometimes encounter, make a good case for the feasibility of their method. Among other merits, they cite the following as the advantages of steamed timbers:

(1) they eliminate the need to search for curved trees for timbers;

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[153]From my August 15, 1979 interview with Herbert Harnum, MUNFLA accession numbers C4636, C4643.

(2) they are quicker and easier to install than sawn timbers;

(3) they are stronger than sawn timbers;

(4) they take up less room inside a boat than sawn timbers;

(5) if steamed timber cracks or becomes otherwise defective, it is far easier to replace than a sawn timber.

Recalling his experiences with both sawn and steamed timbers, Wilson Reid, 33, notes the advantages of steamed timbers, as he sees them:

> I think it's a lot faster, and a lot better, personally. Now some people only thinks the other way, but you take a 32-33 foot boat, and you've got to have a hell of a big timber in order not to have to join [them]. And, even if you got them joined, up on the top by her gun'ales she's [going to be] cross-grained. You've probably seen that happen a dozen times. That one, the first one we built with timbers, [we] broke off, must have broke off a half a dozen [timbers] that way. Then you have to clamp a piece of plywood on each side and screw-bolt it on, which, definitely, is not as strong as a piece that is not broken. And to have to go and take that out after breaking it, that's, that will break your heart. And no one does that, [no one] takes it out. It's covered up. But the steamed timbers, now the size of timbers we're using, we're using 2 x 3. Now all the other people around this area, and everywhere else that I've seen, are only using 1 x 3. Now we've had hundreds of people come to the mill and look at the timber we got put in the boats and say, "How the hell you get them in there so big as that? We've never seen timbers as big as that steamed in." So when they dry, there's no way in the world you'll ever break them.[154]

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[154]From my August 17, 1979 interview with Wilson Reid, MUNFLA accession number C4644.

The use of steamed timbers has long been an accepted practice with boatbuilders in many parts of the world, and boats with properly installed steam-bent timbers have proven themselves to be very strong. Because of this, it is reasonable to assume that eventually, as more and more boats are built with steamed timbers, and as these boats demonstrate that their strength equals or exceeds that of boats built with sawn timbers, the steamed timber method will gradually replace the older sawn timber method.

Sequence of Construction Activities

On the whole, although most all boatbuilders utilize similar construction techniques, the actual sequence of construction activities may vary widely from builder to builder. Moreover, builders may use slightly different sequences with every boat that they build. Amid this sort of variation, however, it is possible to discern, at least on the most basic levels, two general sequences: the sequence used by builders who use sawn, naturally-curved timbers; and, the sequence used by builders who employ steam-bent timbers. Examples of these sequences are as follows:

Sawn Timber Sequence[155]

1. Collect building materials.

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[155] This basic sequence is used by Marcus French.

2. Use moulds to prepare fore hook, midship bend and after hook.
3. Use mould or pattern to shape counter.
4. Shape stem, keel, sternpost, deadwoods, apron and stern knee to proper dimensions.
5. Fasten together stem, keel, sternpost, deadwoods, apron and stern knee.
6. Mark timberline on side of keel.
7. Set backbone assembly (parts listed in #5) upright, in blocks, then level and brace with spur shores.
8. Attach counter to sternpost.
9. Determine positions for fore hook, midship bend, and after hook and cut notches for them in the keel.
10. Fasten fore hook, midship bend, and after hook in place on the keel and brace with cross spalls and spur shores.
11. Determine placement for counter and cut down sternpost to receive it.
12. Fasten counter to sternpost.
13. Determine placement of all remaining timbers and cut notches for them in the keel.
14. Attach ribbands.
15. Determine shapes of remaining timbers.
16. Cut out timbers, mount on the keel, level, and brace with cross spalls.
17. Locate sheer heights and mark on stem, counter and midship bend.

18. Shape and install risings.
19. Shape and install binding strake.
20. Cut stem and keel rabbets.
21. Shape and install planks below the binding strake, as far downward as the crop of the bulge.
22. Install stopwaters in keel scarf joints.
23. Shape and install garboard plank.
24. Shape and install all planks above garboard, as far as the crop of the bulge.
25. Shape and install fuller plank.
26. Drive plank nails below plank surface.
27. Fair hull by planing.
28. Caulk plank seams with oakum.
29. Apply tar or other preservative to lower planks, inboard.
30. Shape and install interior members (e.g. thwarts, breasthook, bulkheads, ceiling, sparkins, cuddy, shoots, thwart knees).
31. Paint entire hull.
32. Install engine.
33. If inboard engine used, construct engine house.

Steamed Timber Sequence[156]

1. Collect building materials.

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[156] This basic sequence is used by Herbert Harnum.

2. Prepare construction moulds.
3. Shape counter.
4. Shape stem, keel, sternpost, deadwoods, apron, and stern knee.
5. Fasten together stem, keel, sternpost, deadwoods, apron and stern knee.
6. Set backbone assembly (#5) upright, in blocks, then level and brace with spur shores.
7. Install counter.
8. Position midship bend construction mould on keel, level and brace.
9. Install ribbands.
10. Position fore hook and after hook construction moulds on keel, using ribbands as a guide, level and brace.
11. Determine positions for timbers.
12. Cut notches for timbers in keel.
13. Install more ribbands.
14. Steam and install juniper timbers, bracing with cross spalls.
15. Shape and install keelson.
16. Take hull out of blocks and turn onto one side.
17. Shape and install garboard plank.
18. Shape and install planks above garboard, as far as the crop of the bulge.
19. Turn hull right-side-up and shape and install binding strake.

20. Measure gap between upper and lower strakes of planking to determine widths of remaining planks.
21. Shape and install remaining planks.
22. Drive plank nails below plank surface.
23. Fair hull by planing and sanding.
24. Shape and install thwarts, thwart knees, gunwales, breasthook and quarter knees.
25. Install stopwaters in scarf joints.
26. Caulk plank seams with oakum.
27. Paint hull, outboard.
28. Paint hull, inboard.
29. Install remaining interior members (e.g. bulkheads, shoots, sparkins, cuddy).
30. Paint inboard surfaces.
31. Install engine.
32. If inboard engine used, construct engine house.

Launching Ceremonies and Naming Practices

As far as I have been able to determine, there are no special launching ceremonies or naming practices associated with the inshore fishing craft built and used in Winterton. Boats are regarded as tools, and a Winterton fisherman would no more think of giving his boat a formal name than he would think of naming his chainsaw or his wheelbarrow. The same attitude prevails when it comes to launching a boat. The boat is simply put into the water, with none of the attendant hoopla which is often associated with the launching of boats elsewhere. It appears, however, that attitudes concerning launching ceremonies and naming practices change in accordance with increased boat cost and size. While speedboats, rodneys and motor boats are not named or launched ceremoniously, the opposite is the case for larger, more expensive fishing vessels, such as longliners. Invariably, a longliner is named and launched at a public ceremony during which a bottle of liqour or champagne is smashed against the stem, usually by a female relative of the owner.

Summary

Construction can be defined, simply, as the act of building a physical object. In regard to the goals of this study, however, this definition is far too narrow. Since it has been my aim to accurately record the contextual framework of boatbuilding in Winterton, the preceding discussion of the construction process was not restricted to an analysis of the ways in which various materials are manipulated in order to produce boats. Instead, I endeavoured to examine not only materials and construction techniques utilized in Winterton, but also several other factors which, in my view, exert significant influence on the outcome of the construction process. These factors were: the proficiency of the builder; the work place; the working conditions; the time of construction activity; the tools used; and, the sequence of construction activities. In addition, although I do not consider them to be phenomena which affect boat construction in any appreciable manner, in order to provide data on customs associated with the conclusion of construction activities, I addressed some comments to launching ceremonies and naming practices.

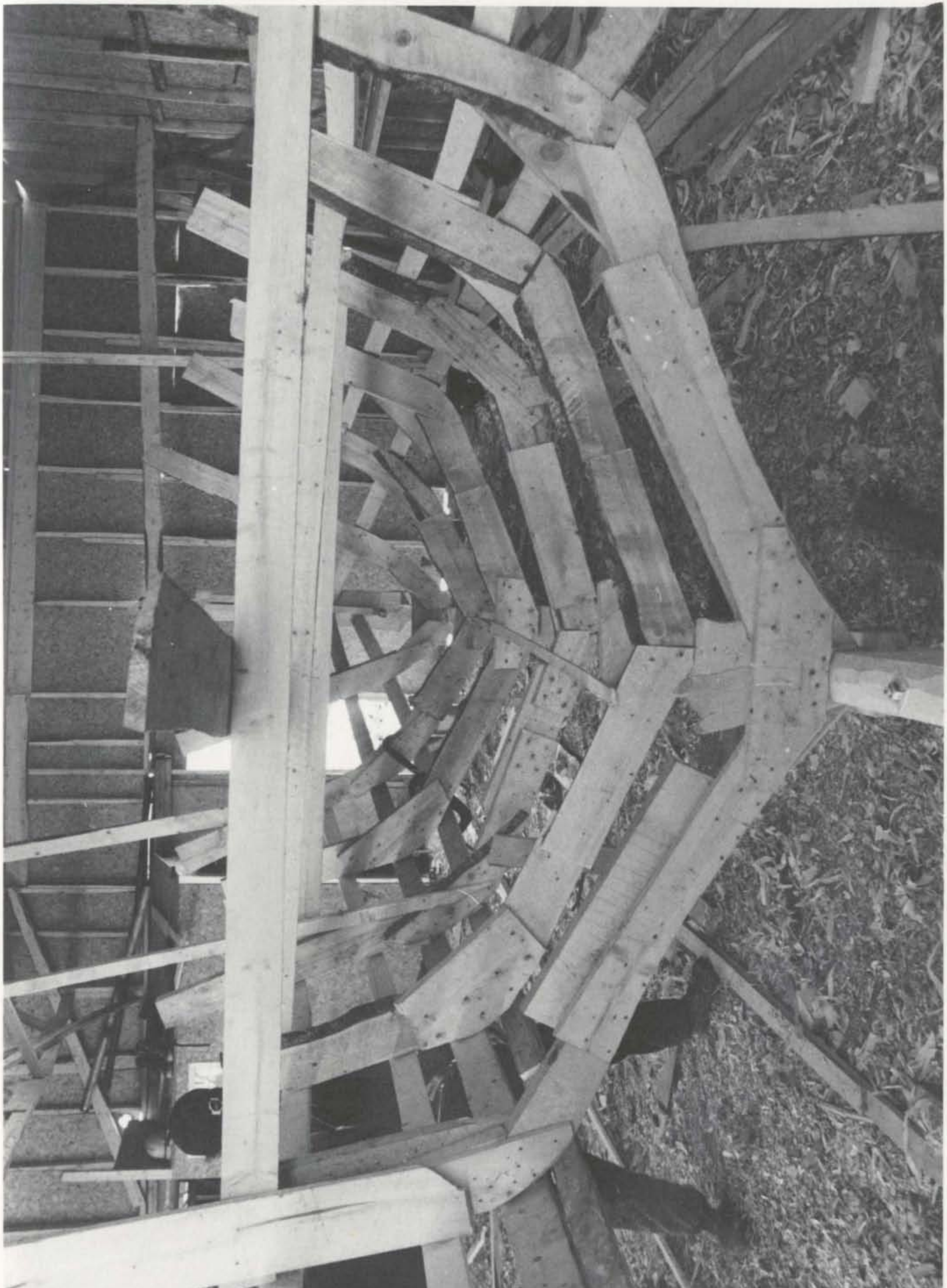
PHOTOGRAPHS OF THE CONSTRUCTION
OF A 32' TRAP SKIFF AT
REID'S MILL

(1979)

Fig. 79: Ribbands being installed on 32' trap skiff under construction at Reid's Mill. l-r: Eleazor Reid, Wilson Reid, Herbert Harnum. (May, 1979)

Fig. 80: Bow of 32' trap skiff.

Fig. 81: Moulds in place on the keel of the 32' trap skiff. When all of the ribbands have been installed steamed timbers will be bent over them.



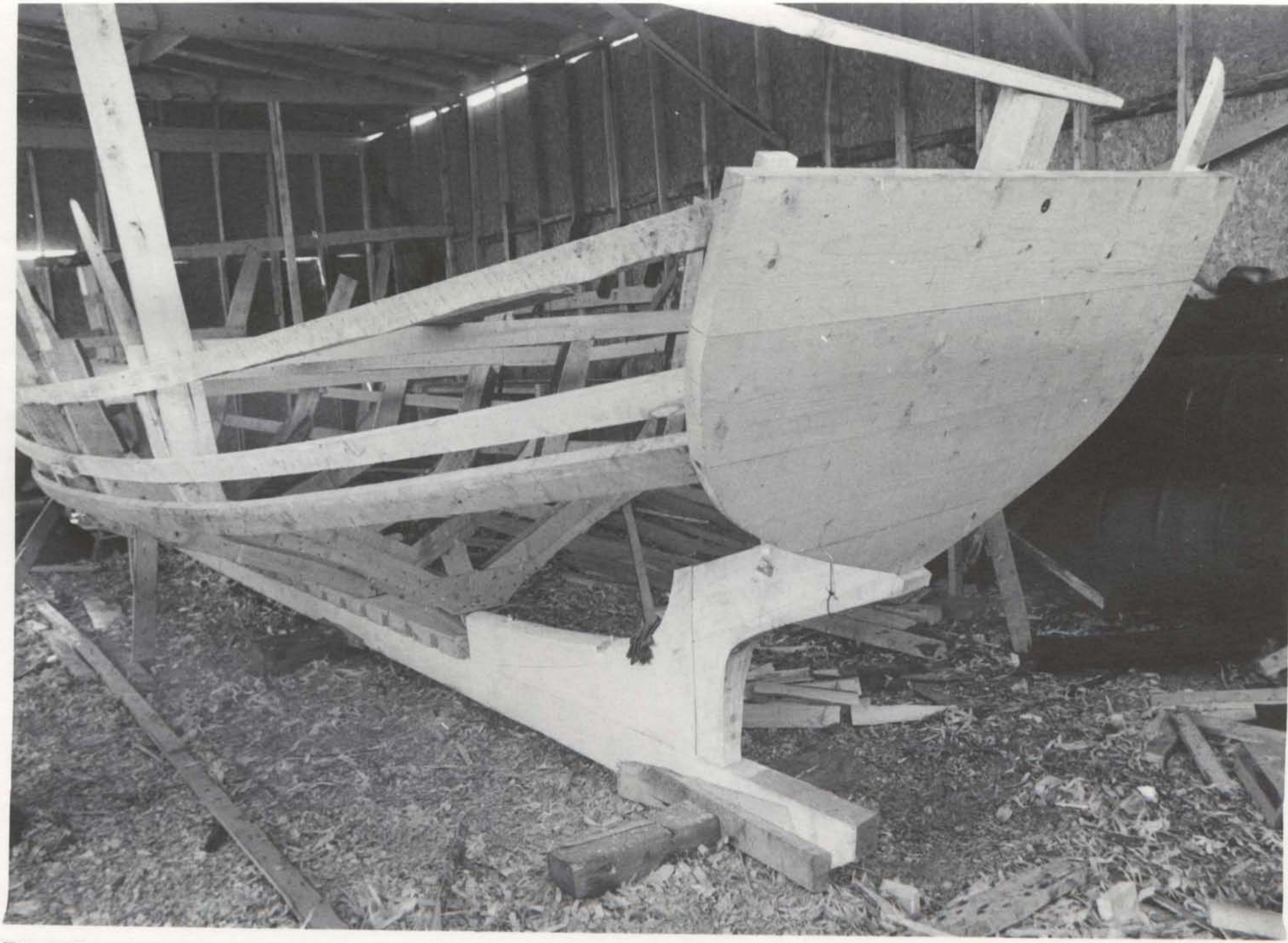


Fig. 82: Stern of trap skiff.

Fig. 83: Stern of trap skiff, inboard view.

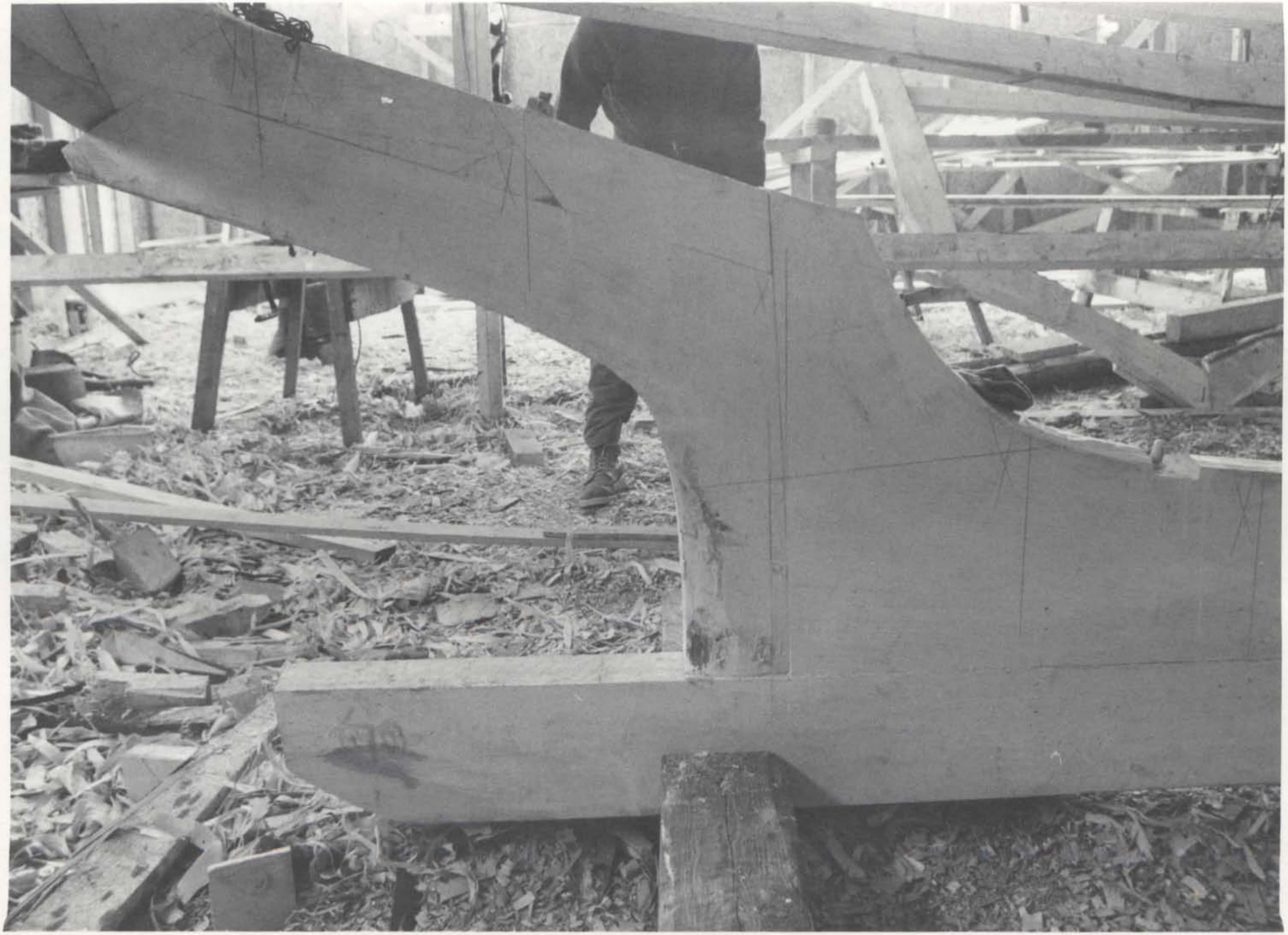


Fig. 84: Two "knees" employed in the stern assembly.

Fig. 85: Planking procedure used by Wilson Reid.
(1) Rough plank stock is clamped to hull and the shape of the lower edge of adjacent plank is drawn onto the inboard face of stock.

Fig. 86: (2) The rough plank is removed from the hull and, using a flexible batten, a fair line is traced using the previously made marks as a guide. l-r: Herbert Harnum, Wilson Reid, Eleazor Reid, unidentified, Charlie Reid.

Fig. 87: (3) After using a table saw to make a cut close to the mark, Wilson Reid uses a plane to fair the plank edge down to the pencil mark.

Fig. 88: (4) Herbert Harnum uses a hollowing plane to scoop out the belly of the plank so that it will lay properly against the curvature of the hull.

Fig. 89: (5) After checking and rechecking the fit of the plank, Wilson Reid finally nails it to the hull.

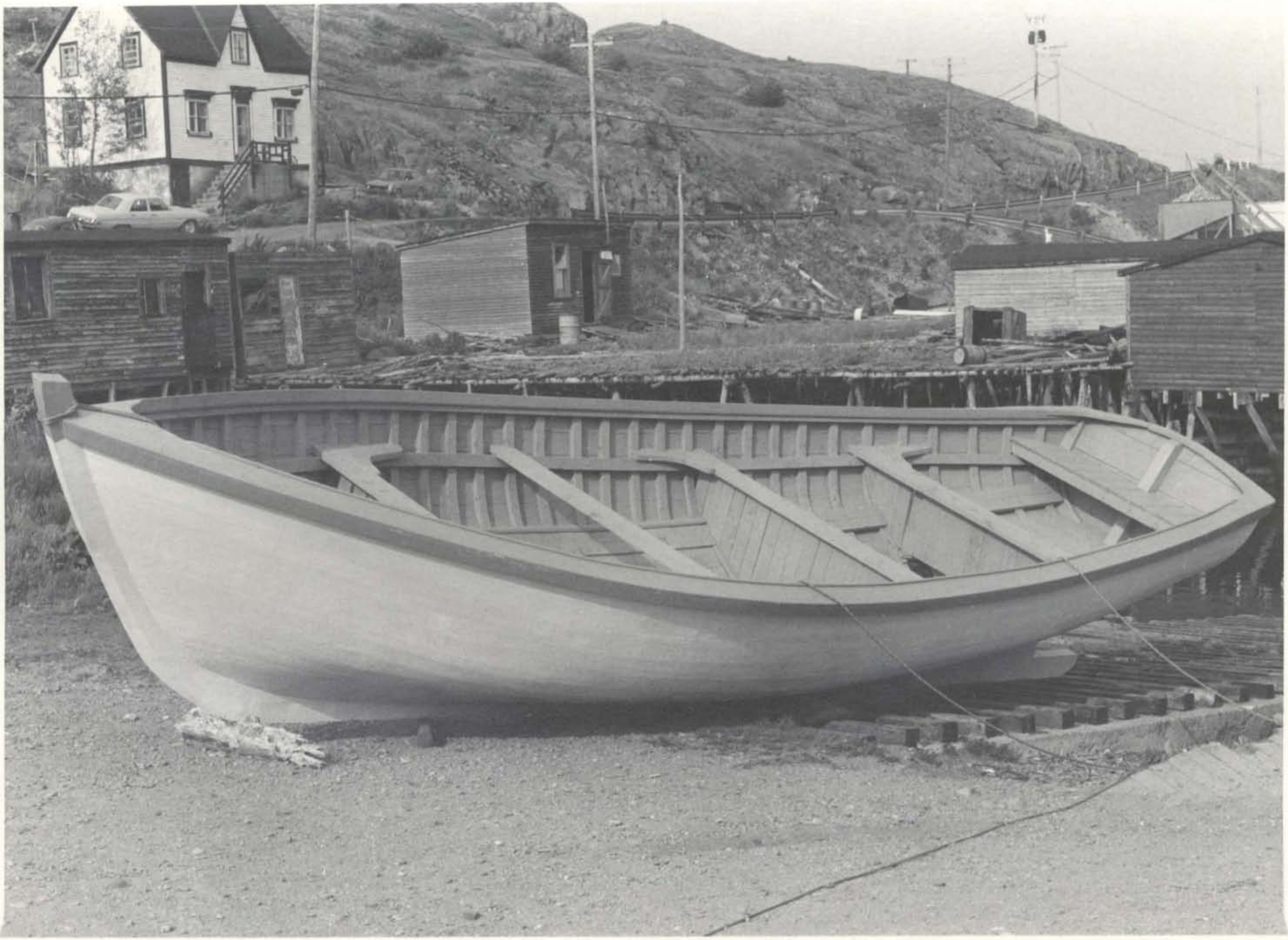
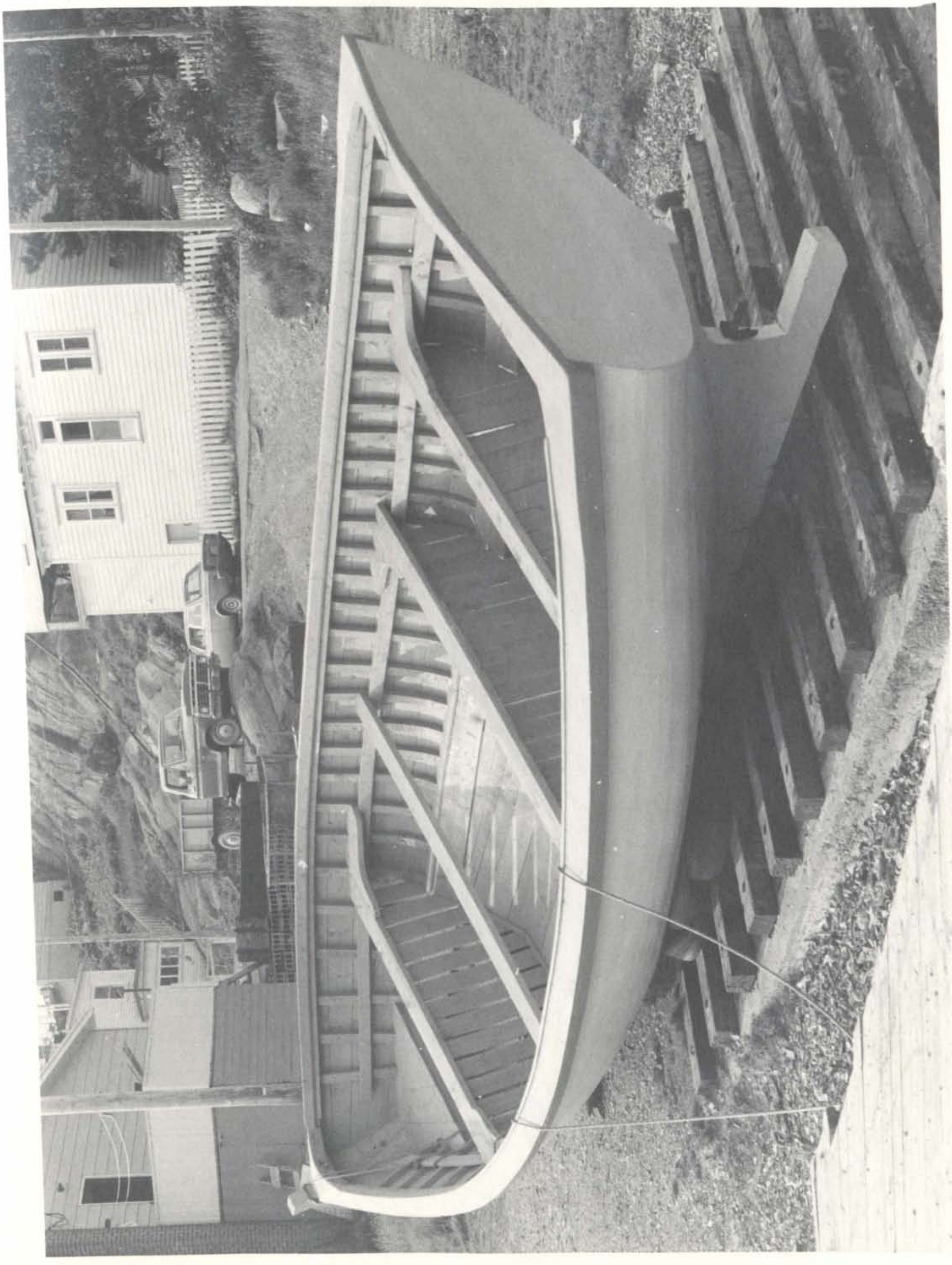


Fig. 90: The completed trap skiff at Petty Harbour, the home of its owner.

Fig. 91: Another view of the completed trap skiff. Note: at this point the engine has not been installed.



A COLLECTION OF PHOTOGRAPHS (c. 1956-c. 1960)
WHICH ILLUSTRATE THE BOATBUILDING
ACTIVITIES OF JOHN REID

(Photos by Ralph Reid)

Fig. 92: John Reid dressing a keel with his brother, Eleazor, looking on, c. 1956. (Photo by Ralph Reid)

Fig. 93: John Reid installing ribbands, c. 1956. The three "spur shores" to his right are fastened to the after hook, the midship bend and the fore hook, respectively. (Photo by Ralph Reid)

Fig. 94: Motor boat hull timbered out and ribbanded off. (Photo by Ralph Reid)

Fig. 95: John Reid installing the garboard plank. Note that the upper two or three strakes of planking have already been laid. (Photo by Ralph Reid)

Fig. 96: Since this plank is not long enough to go the full length of the hull, John Reid is sawing it off so that its end will lay on a timber. (Photo by Ralph Reid)

Fig. 97: John Reid planking up. Strakes are laid down from the sheer as far as the "crop of the bulge," then, from the garboard up. (Photo by Ralph Reid)

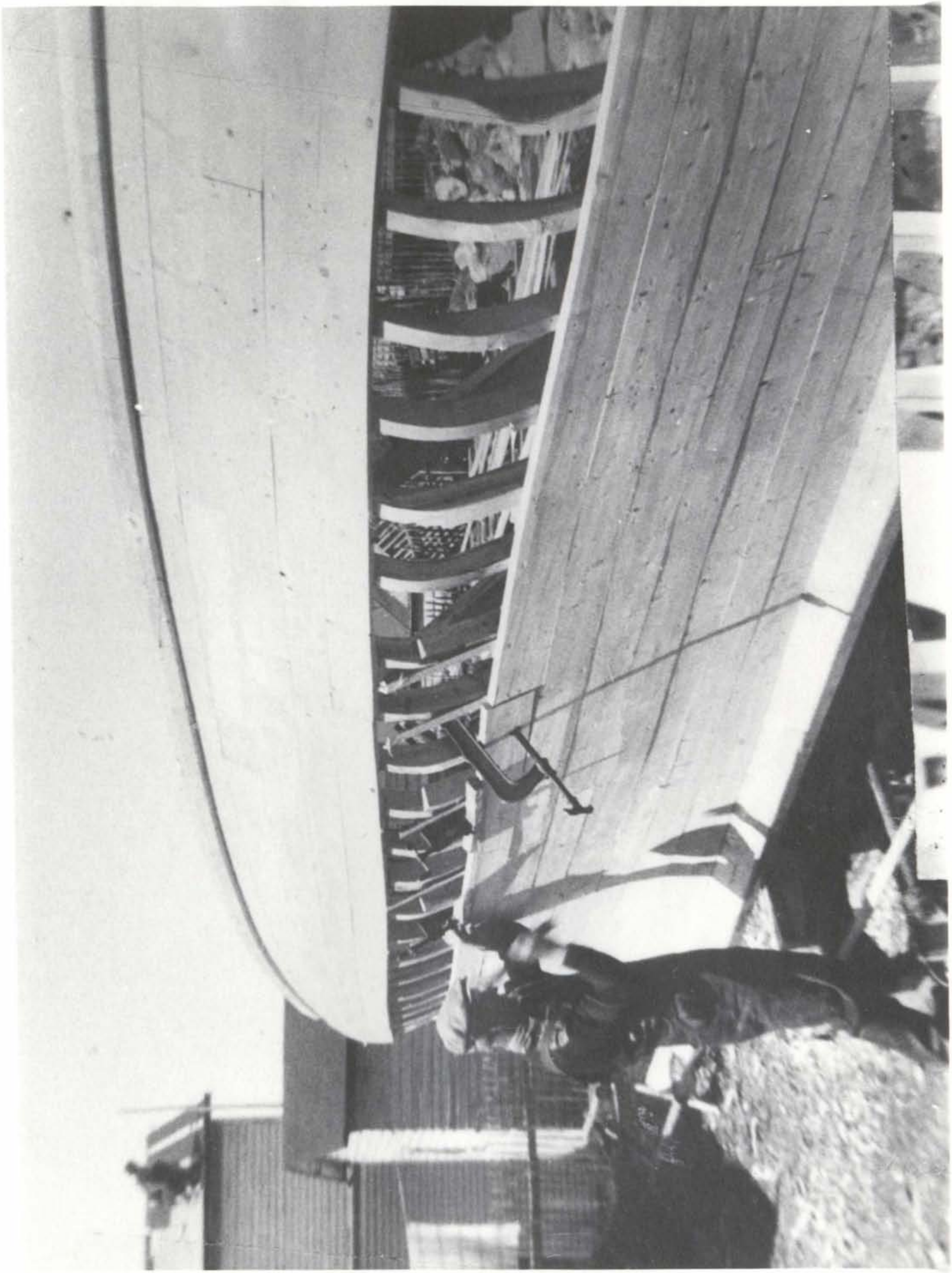


Fig. 98: Laying the next-to-last plank. Note that it has been notched to receive the fuller. (Photo by Ralph Reid)

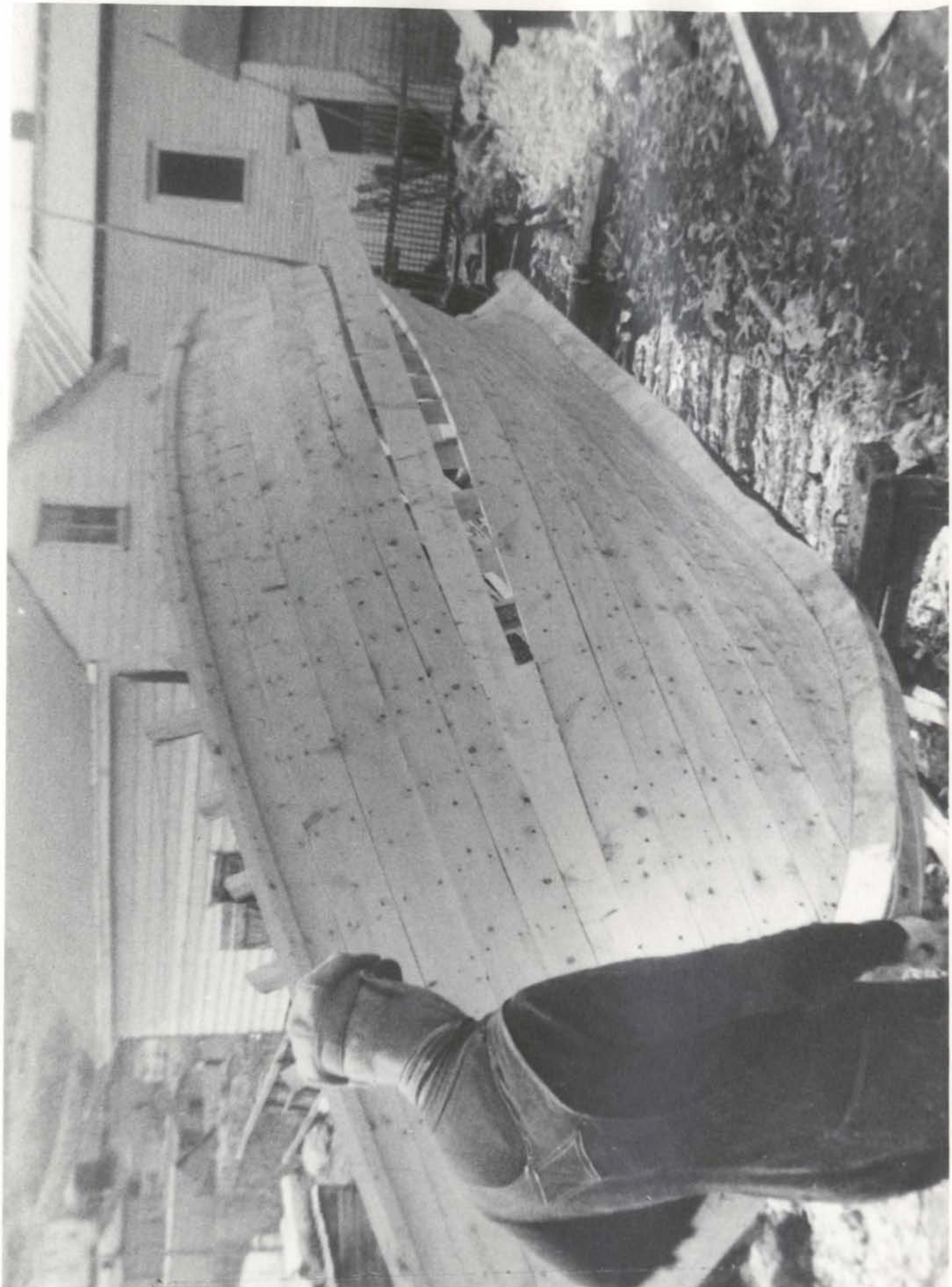
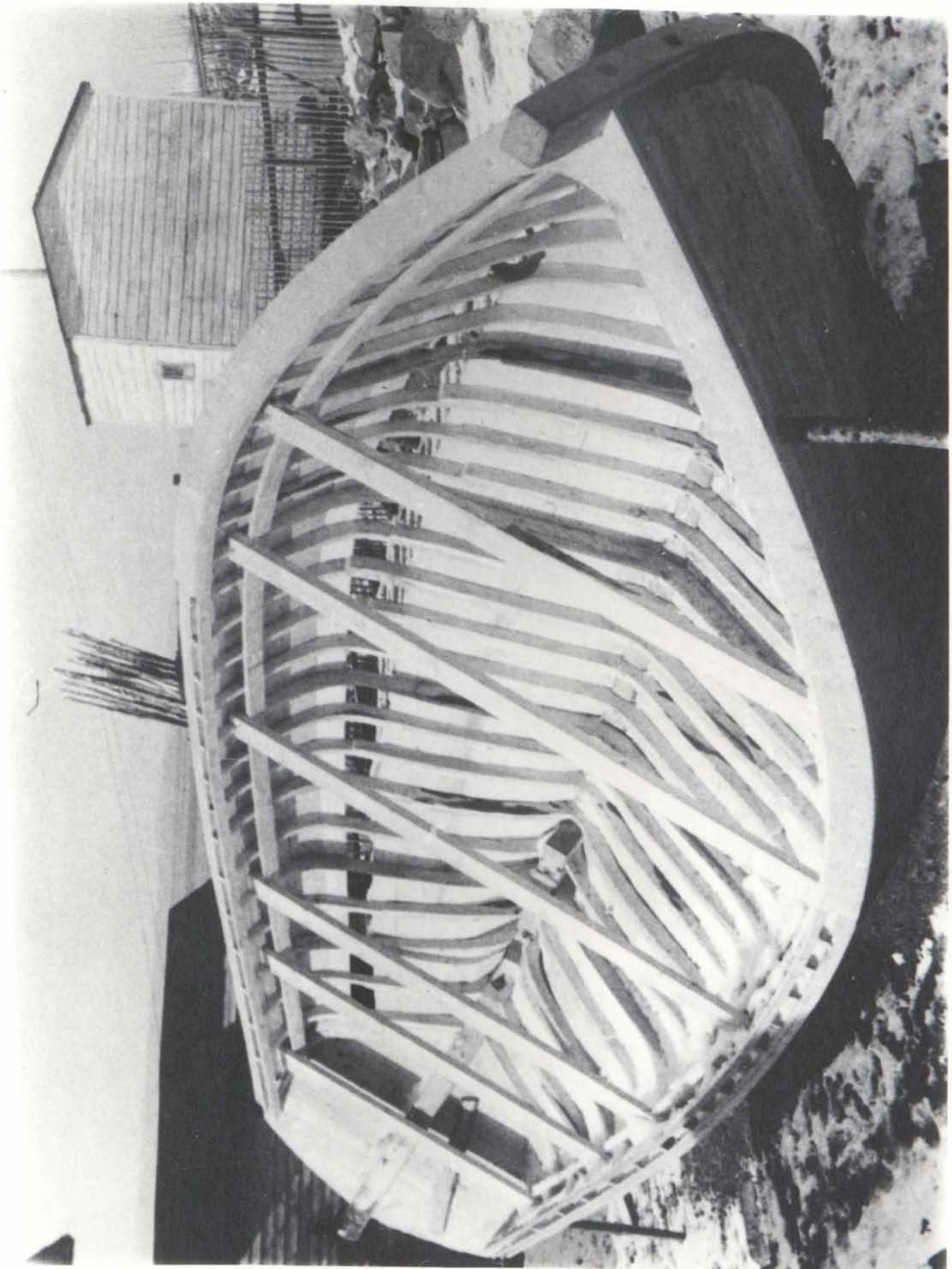


Fig. 99: Inboard view of hull with a couple of strakes of planking left to be installed. (Photo by Ralph Reid)



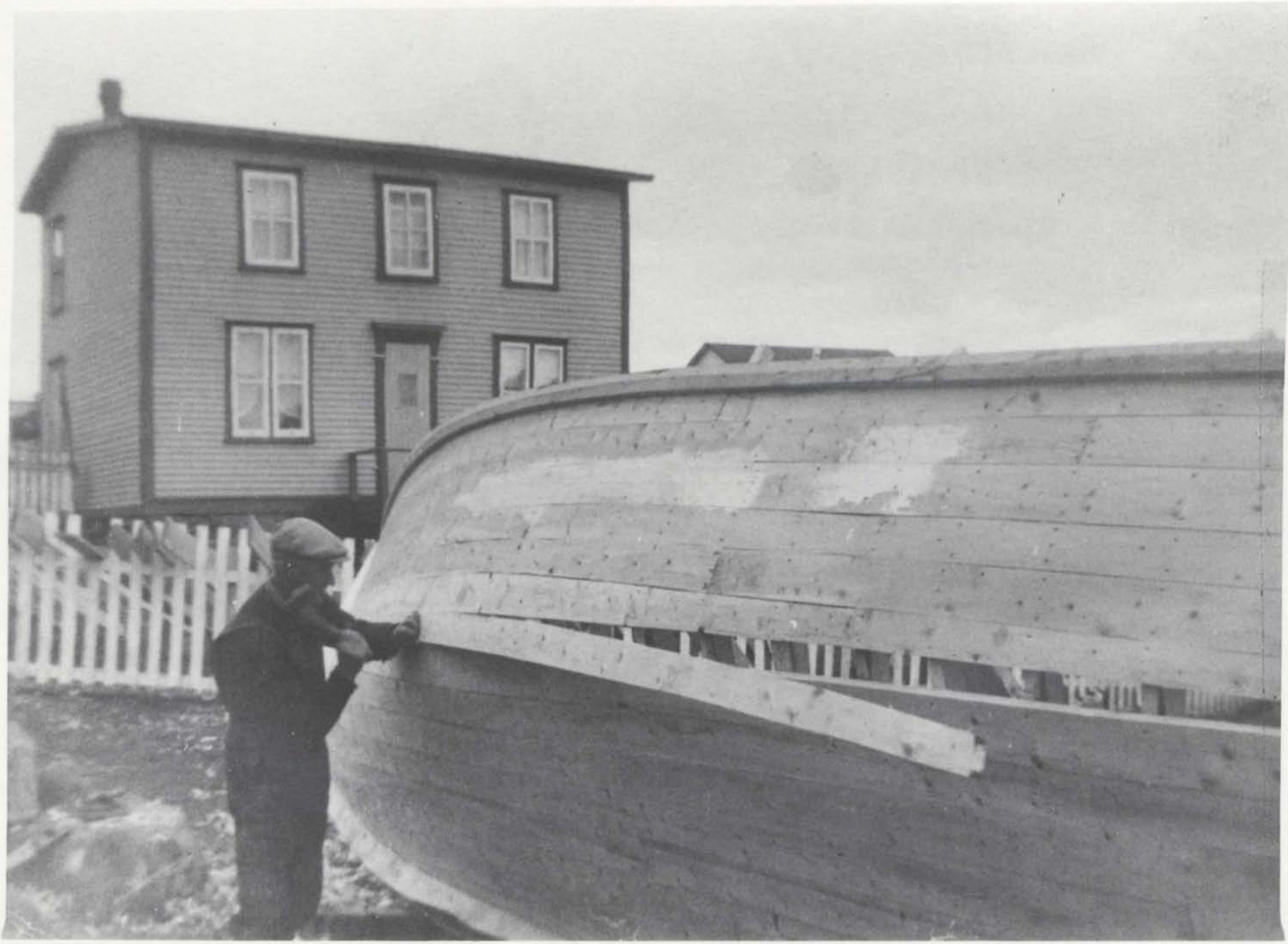


Fig. 100: Fastening on the fuller. (Photo by Ralph Reid)

Fig. 101: Caulking the hull with oakum. Note the light-coloured areas of the hull where humps have been planed off. (Photo by Ralph Reid)

Fig. 102: John Reid installing thwart knees as son Charlie looks on. (Photo by Ralph Reid)

Fig. 103: John Reid and son Charlie with completed motor boat. (Photo by Ralph Reid)

Fig. 104: Occasionally, John Reid built two boats at the same time. Here are two completed motor boats. (Photo by Ralph Reid)

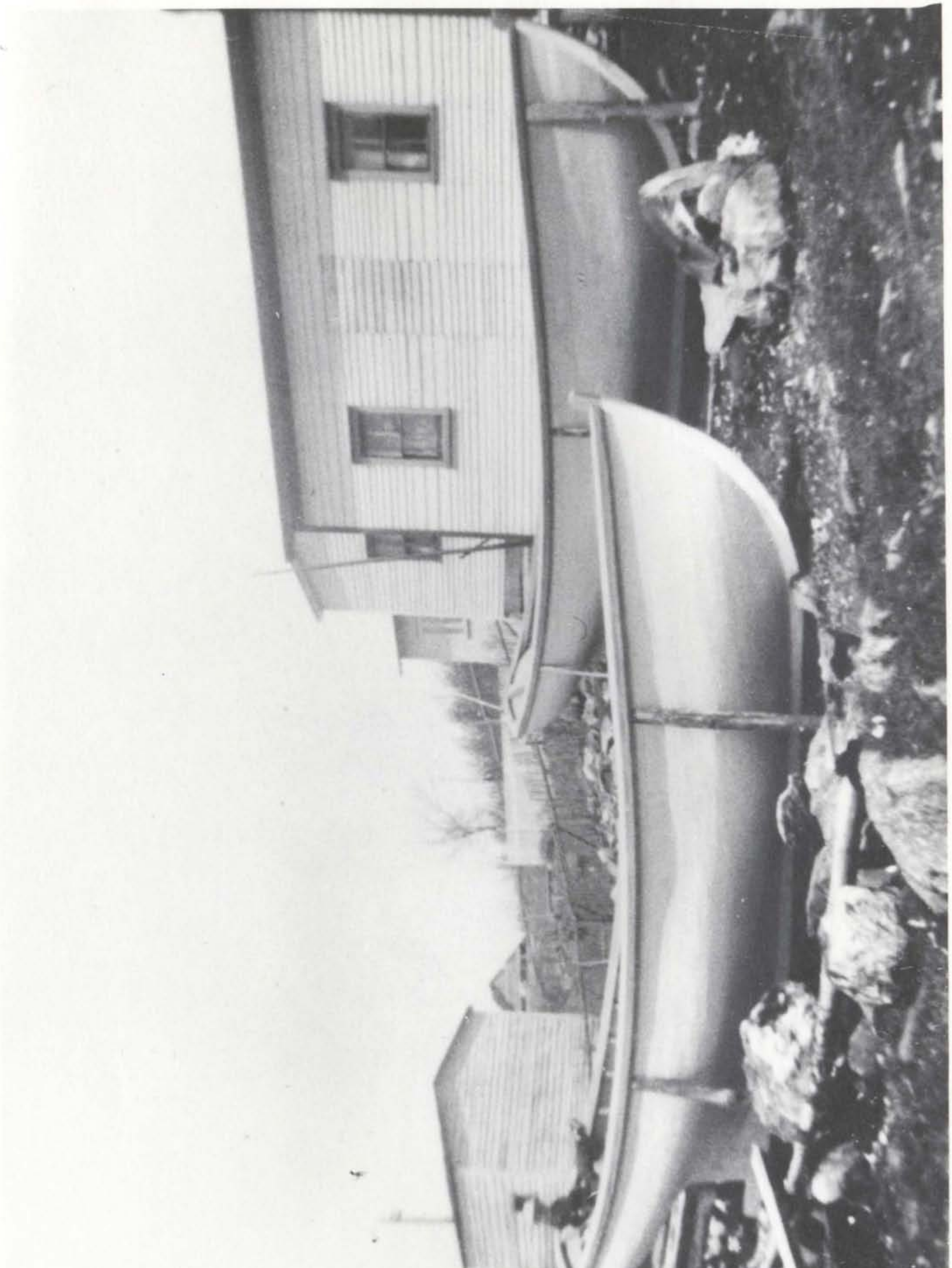
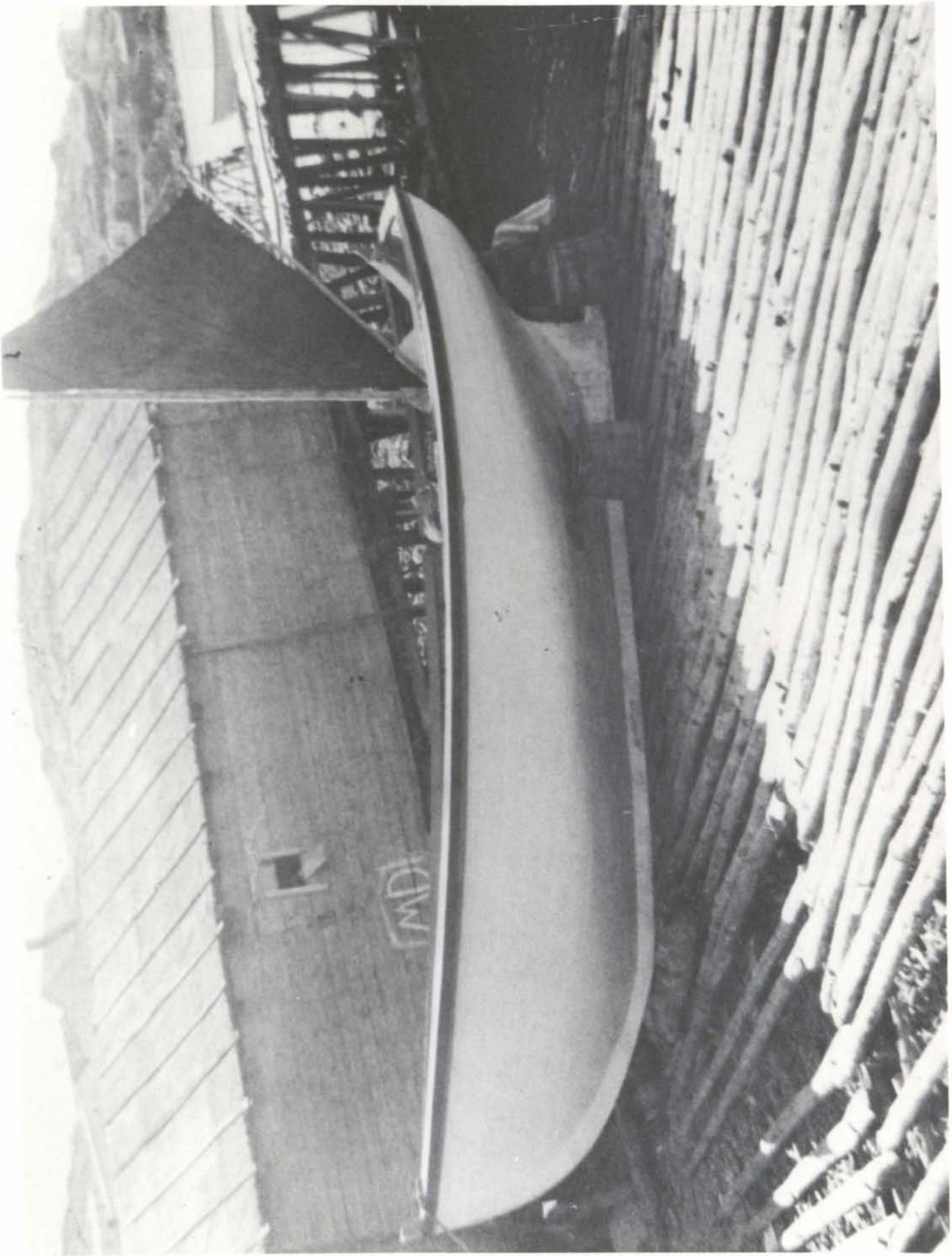


Fig. 105: One of the last boats built by John Reid (c. 1960). It was about 23' long and was powered by a 5 h.p. Atlantic engine. Note the "jigger" sail set aft. (Photo by Ralph Reid)



VII

SUMMARY AND CONCLUSION

In the preceding study I have endeavoured to be explicit about the methods and theories that I have employed and the conclusions that I have reached. This final section will, therefore, not be an exhaustive discussion of conclusions, but will instead consist of a consolidation and review of key points already expressed, as well as an explanation of the principal underlying themes contained in the thesis.

One of the major underlying themes of this study concerns the value of a contextual approach to the study of objects of material culture. Often, persons involved in the study of items of material culture restrict their analyses to the objects under study, paying no attention whatsoever to the cultural context within which the objects are found. In my view, however, the practice of ignoring accessible contextual data is, in most cases, a sign of shallow scholarship, and is an approach which severely limits the value of item-specific data (especially in regard to cross-cultural comparisons), no matter how superbly analyzed those data may be. In an effort to illustrate how boatbuilding fits into Winterton's cultural context, I have included descriptions of the history, economy and natural environment of the study area. Through consideration of this contextual information, we can clearly see that boatbuilding in Winterton is not in any way independent from the cultural matrix, but may, in fact, be viewed as a tangible expression of the ways in which humans adapt to and exercise control over their social, economic and natural environment.

Another underlying theme pertains to emic and etic viewpoints. That is, the perspective of the cultural insider (emic view) and the perspective of the cultural outsider (etic view). Recognizing the fact that every researcher embarks on fieldwork in a different culture accompanied by his own cultural biases, I have stressed that it is highly advisable that the fieldworker be aware of them and attempt to control the tendency to impose his own definitions, judgements, and theoretical orientations. Although it should be clear to the reader that I have applied a large number of definitions, judgements and theories to boatbuilding in Winterton which are not used by the boatbuilders themselves, it should be equally apparent that I have attempted to present the meanings and categorizations used by them, as well. In short, then, this work is a mixture of both emic and etic viewpoints, with the former being comprised of accurately recorded internal, subjective views, and the latter consisting of verifiable, objective facts.

In regard to methodologies, I have detailed a number of specialized research techniques, including photography, interviewing strategies, and the accurate measurement of boat hulls. I should, however, emphasize the fact that the most valuable tools in the field are the researcher's own sensitivities and communicative abilities. Successful fieldwork is enhanced by the researcher's ability to: listen; recognize culturally-appropriate behaviour; demonstrate enthusiasm for his work; and, show his informants that he is appreciative of their assistance. Without these skills it would be extremely difficult for the researcher to collect the sort of critical ethnographic data that are essential for a study of this kind.

An essential premise of the present study is that the major areas of concern in the analysis of any object of material culture are the fundamental components of design, construction and use. I have primarily focused my attention on these topics. The results of my investigations into the nature of boat design, construction and use in Winterton (as well as allied topics) form the three central chapters of this study.

In Chapter IV, "Winterton Boat Types and Their Uses," I discussed the genesis, morphology and use of the four primary boat types presently constructed and used in Winterton: motor boat, rodney, bay punt, and speedboat. In addition, I presented brief depictions of two extinct boat types: Baccalieu skiff, and bully. Of primary concern in this chapter was temporal variation throughout the twentieth century and the impact that innovations -- in the form of the internal combustion engine and the planing hull form -- have had on the community's boatbuilding traditions. Also, I discussed the juxtaposition and syncretism of innovations and traditional practices, and concluded that traditional practices play an important role in determining the extent to which innovations will be utilized.

Using Christopher Alexander's construct of self-conscious and unselfconscious culture as a model, in Chapter V, "Design," I analyzed the complexities of the process of design. A wide variety of factors, many of them conceptual, were considered, including: the transmission of boatbuilding knowledge; the use of several types of moulds (including the historically significant three-piece adjustable mould based on the sixteenth century English system of design known as whole-moulding); the use of non-physical mental templates; measurement formulas; performance correlatives; correction and improvement of design; experimentation; and, creativity. Following a careful examination of these factors, I reached the conclusion that, in regard to boatbuilding, Winterton falls within Alexander's category of unselfconscious culture. The following points support this conclusion: (a) little thought is given to a formal process of design; (b) there are right ways and wrong ways of designing and building boats, but no general governing principles; (c) occupational specialization is rare; (d) the lack of written records, drawings and plans almost precludes the possibility of perceiving design and construction alternatives; (e) design decisions are made according to custom, generally, and originality in decision making is not particularly encouraged.

In Chapter VI, I discussed construction, perhaps the most difficult of the three central issues of this study to accurately and succinctly describe. In approaching this topic, I elected to utilize two avenues of inquiry. In the first half of the chapter I described in detail the manner in which one man built one boat, in an effort to show the number, variety and sequence of operations involved in a typical boatbuilding project. In the second half of the chapter, in order to place this individual's activities in proper perspective vis-à-vis the activities of other Winterton builders, I analyzed data collected from several informants which pertained to what I considered to be the basic factors which influence construction. These factors were: proficiency of the builder; work place; working conditions; time of construction activity; tools used; work techniques; and, sequence of construction activities. In addition, although they do not have a direct bearing on the construction process, in this chapter I also addressed comments to launching ceremonies and naming practices.

The overall purpose of this thesis has been to document the dynamics and functions of the living tradition of boatbuilding in the community of Winterton. Because of the limited scope of the study, I cannot, with any degree of certainty, state how representative Winterton's traditions are of Newfoundland fishing communities in general. Verification of the parallel existence of the patterns of behaviour that I have uncovered in Winterton awaits further research. To that end, this thesis offers a body of data for comparative analysis, as well as theories and methodologies which may be applied to other settings.

APPENDIX A

MEMORIAL UNIVERSITY OF NEWFOUNDLAND
DEPARTMENT OF FOLKLORE
BOATBUILDING QUESTIONNAIRE

In Newfoundland, where fishing and water-borne transportation have always been of great importance, boats represent an integral part of the culture. Along the shores of the island boats are everywhere, and, in many places, boatbuilding traditions can be traced back hundreds of years. Even though boatbuilding and boat use are widespread in the province, little information has been collected and preserved about the details of boat-building.

By answering the following questions you can provide valuable data that will aid scholars in the study of boatbuilding in Newfoundland.

Please answer each question as fully as you can, giving details whenever possible. If you need more space for your answers, or want to add additional comments, use separate pieces of paper.

If you are not familiar with boatbuilding in your home community, feel free to send a copy of this questionnaire to someone in the community who is more knowl-edgeable. Completed questionnaires may be sent directly to the Department of Folklore, Memorial University of Newfoundland, St. John's A1C 5S7.

All information will be permanently filed in the Memorial University of Newfoundland Folklore and Language Archive.

YOUR NAME ______________________________

HOME COMMUNITY ______________________________

BIRTH DATE ______________________________

PRESENT ADDRESS ______________________________

PRESENT TELEPHONE NUMBER ______________________________

TODAY'S DATE ______________________________

1. In your home community, when a fisherman needs a new boat, what course of action does he generally take? (Check one)

   ___(a) builds one for himself

   ___(b) hires someone in the community to build one for him

   ___(c) hires someone in another community to build one for him

   ___(d) searches around the bay for a new or used boat

   ___(e) other (Please explain) ______________________

2. Which of the following best describes your community? (Check one)

   ___(a) it is an active boatbuilding community ___(b) it is a community where boatbuilding skills are dying out

___(c) it is dependent upon other communities for boats

___(d) other (Please explain) ______________________

3. Approximately how many fishermen live in your home community? ______________________

4. Approximately how many boats are kept in your home community? ______________________

5. Which of the following boat types are used by residents of your community? (Check as many as apply)

___trap skiff	___punt	___speedboat
___flat	___motor boat	___rodney
___row dory	___longliner	___skiff
___cod seine skiff	___jack boat	___dinghy
___bully boat	___schooner	___sail boat
___wherry	___snapper boat	___smack
___Cape Islander	___motor dory	___shallop

___other (Please explain) ______________________

6. Which of the following boat types are regularly built by residents of your community? (Check as many as apply)

___trap skiff	___punt	___speedboat
___flat	___motor boat	___rodney

___row dory ___longliner ___skiff

___cod seine skiff ___jack boat ___dinghy

___bully boat ___schooner ___sail boat

___wherry ___snapper boat ___smack

___Cape Islander ___motor dory ___shallop

___other (Please explain) ______________________________

7. Of all of the boat types represented in your community, which one is the most numerous? ______________________

Approximately how many of this type are in the community?

____

8. During the fishing season, where do fishermen in your community keep their boats? (Check as many as apply)

___(a) on a mooring in the harbour

___(b) tied up at a wharf

___(c) tied up at a fishing stage

___(d) hauled out daily on a launch-way

___(e) hauled out daily on the shore

___(f) other (Please explain) ______________________

9. Where is boatbuilding carried on in your community? (Check as many as apply)

___(a) in stores (store houses)

___(b) outside, on the shore

___(c) outside, on the property of the builder

___(d) in buildings used only as boatshops ___(e) in garages

___(f) other (Please explain) ______________________

10. In your community, about how many individuals are there who have, at one time or another, built a boat? ______

11. If you had to select one person as the best boatbuilder in your community, who would that person be? ______________________________

    What types of boats does this person build? ________

12. If you had to select a person as most knowledgeable about the history of boatbuilding in your community, who would that person be? ______________________

13. Are there any persons in your community who work full-time as boatbuilders? ___yes ___no.

    If YES, what are the names of these individuals? ______

    ____

14. Are there any boatshops or boatyards in your community which employ two or more full-time employees? ___yes ___no.

    If YES, give names of shops or yards ________________

15. Which of the following is most typical of the way boatbuilders in your community go about their work? (Check one)

___(a) builders work alone

___(b) builders hire one or more helpers

___(c) builders receive occasional assistance from friends and neighbors, but work alone most of the time

___(d) other (Please explain) ______________________

16. In your community, how does a person usually go about learning about how to build a boat? (Check one)

___(a) obtains information from father or other male relative

___(b) goes to the most skilled builder in the community for assistance

___(c) takes a course from the College of Fisheries

___(d) visits boatbuilders in other communities

___(e) learns by trial and error

___(f) other (Please explain) ______________________

17. When designing a boat to be built and, later, projecting a design to full-size, builders use various methods. In your community do boatbuilders use any of the following? (Check as many as apply)

___(a) wooden half-models

___(b) full-size moulds for timbers

___(c) gates

___(d) three-piece adjustable moulds (hollow mould, rising square, and breadth mould) ___(e) blue prints or plans drawn on paper

___(f) other (Please explain) ____________________

18. In what way do builders usually obtain wood for boat-building? (Check one)

___(a) they go into the woods, in their community, and cut trees

___(b) they go into the woods, in another community, and cut trees

___(c) they hire someone to cut trees for them

___(d) they purchase wood from a sawmill

___(e) other (Please explain) ____________________

19. What woods do boatbuilders in your community use for boatbuilding? (Check as many as apply)

___spruce	___fir	___birch
___oak	___var	___cedar
___larch	___pine	___juniper

___other (Please explain) ____________________

20. After trees are cut into boards, boatbuilders sometimes dry the boards before moving on to build a boat. In your community, which is the most common procedure for drying boards? (Check one)

___(a) boards are used immediately, without drying

___(b) boards are dried less than one month

___(c) boards are dried 1-2 months

___(d) boards are dried 3-6 months

___(e) boards are dried 7-12 months

___(f) boards are dried longer than 12 months

21. Which of the following woods are most commonly used for planking in your community? (Check as many as apply)

___spruce	___fir	___birch
___oak	___var	___cedar
___larch	___pine	___juniper

___other (Please explain) ______________________________

22. Which of the following woods are most commonly used for timbers? (Check as many as apply)

___spruce	___fir	___birch
___oak	___var	___cedar
___larch	___pine	___juniper

___other (Please explain) ______________________________

23. Which of the following woods are most commonly used for stems, keels, and sternposts? (Check as many as apply)

___spruce	___fir	___birch
___oak	___var	___cedar
___larch	___pine	___juniper

___other (Please explain) ______________________________

24. In your community, what types of fastenings are used to attach planks to timbers? (Check as many as apply)

___common steel nails ___galvanized wire nails

___galvanized boat nails ___copper rivets and burs

___bronze screws ___stainless steel screws

___Everdur screws ___brass screws

___other (Please explain) ______________________________

25. Do any of the following boatbuilding materials have to be obtained outside of your home community? (Check as many as apply)

___engines ___fastenings ___paint

___caulking material ___lumber ___oars

___oar locks ___chafing gear ___propellers

___shafts

___other (Please explain) ______________________________

26. What fisheries are pursued by fishermen from your home community? (Check as many as apply)

___lobster ___crab ___cod -- trap

___cod -- hand line ___cod -- trawl ___capelin

___squid ___salmon ___herring

___turbot ___hake ___halibut

___sole ___cusk ___shrimp

___other (Please explain) ______________________________

27. On the average, during what month do fishermen put their boats in the water to begin the fishing season, and

during what month do they take their boats out of the water to end fishing?

Begin during ______________ End during ______________

28. Are boats given names in your community? ___yes ___no.

If YES, what types of boats are given names? (e.g. trap skiffs, longliners, etc.) ______________________________

If YES, give examples of boat names ____________________

29. Often, boats built in a particular harbour or region are recognized as originating from that harbour or region because of certain distinctive characteristics. Do boats built in your community have characteristics that distinguish them from boats built elsewhere? (You might want to consider such factors as: quality of workmanship, seaworthiness, colours, stem profile, length vs. width, inside or outside rudder, etc.)

___yes ___no.

If YES, please explain in detail ____________________

____

30. Sometimes certain ceremonies are attached to the launching of boats, such as the breaking of a bottle of liquor over the bow, or a party held on launch day. Are any boat launching ceremonies practised in your community? ___yes ___no.

If YES, please describe in detail ______________________

____

31. Aside from your community, what community in the area has the best reputation for being the home of skilled boatbuilders? ______________________________

Do builders in this community have a better reputation than builders in your community? ___yes ___no.

If YES, why? ______________________________________

32. Please add any further information about boatbuilding in your community that you think would be helpful.

____

____

____

APPENDIX B

PRINCIPAL INFORMANTS

Eleazor Reid (b. June 22, 1913)

Marcus French (b. September 24, 1917)

Lionel Piercey (b. December 8, 1918)

Fred P. Hiscock (b. February 14, 1915)

Chesley Gregory (b. July 29, 1910)

Herbert Harnum (b. November 31, 1919)

Wilson Reid (b. March 8, 1946)

Reuben Reid (b. September 15, 1904)

Fig. 106: Eleazor Reid fitting a plank onto a speedboat.

Fig. 107: Marcus French in his rodney.

Fig. 108: Lionel Piercey checking his gill nets.

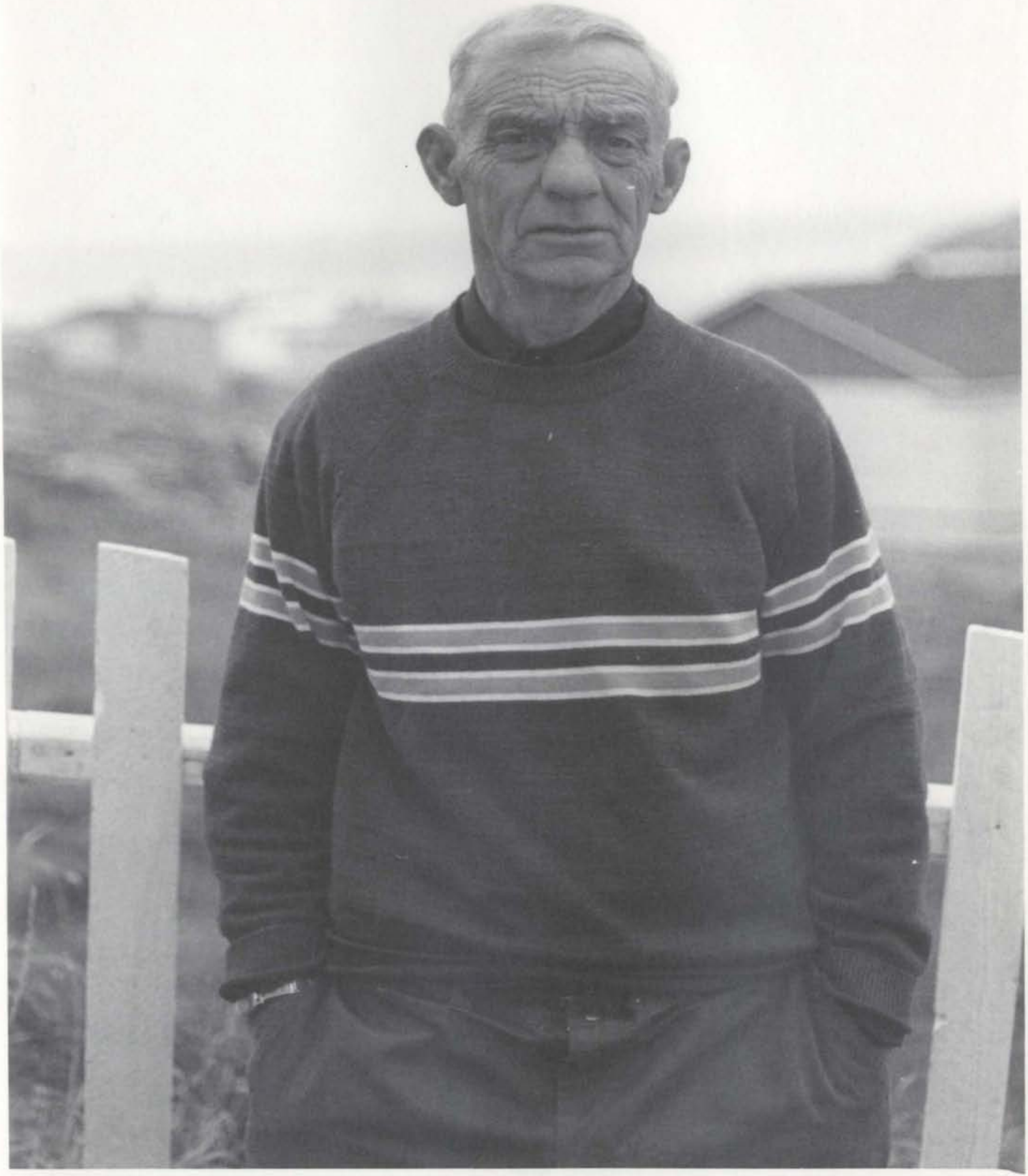


Fig. 109: Fred P. Hiscock.

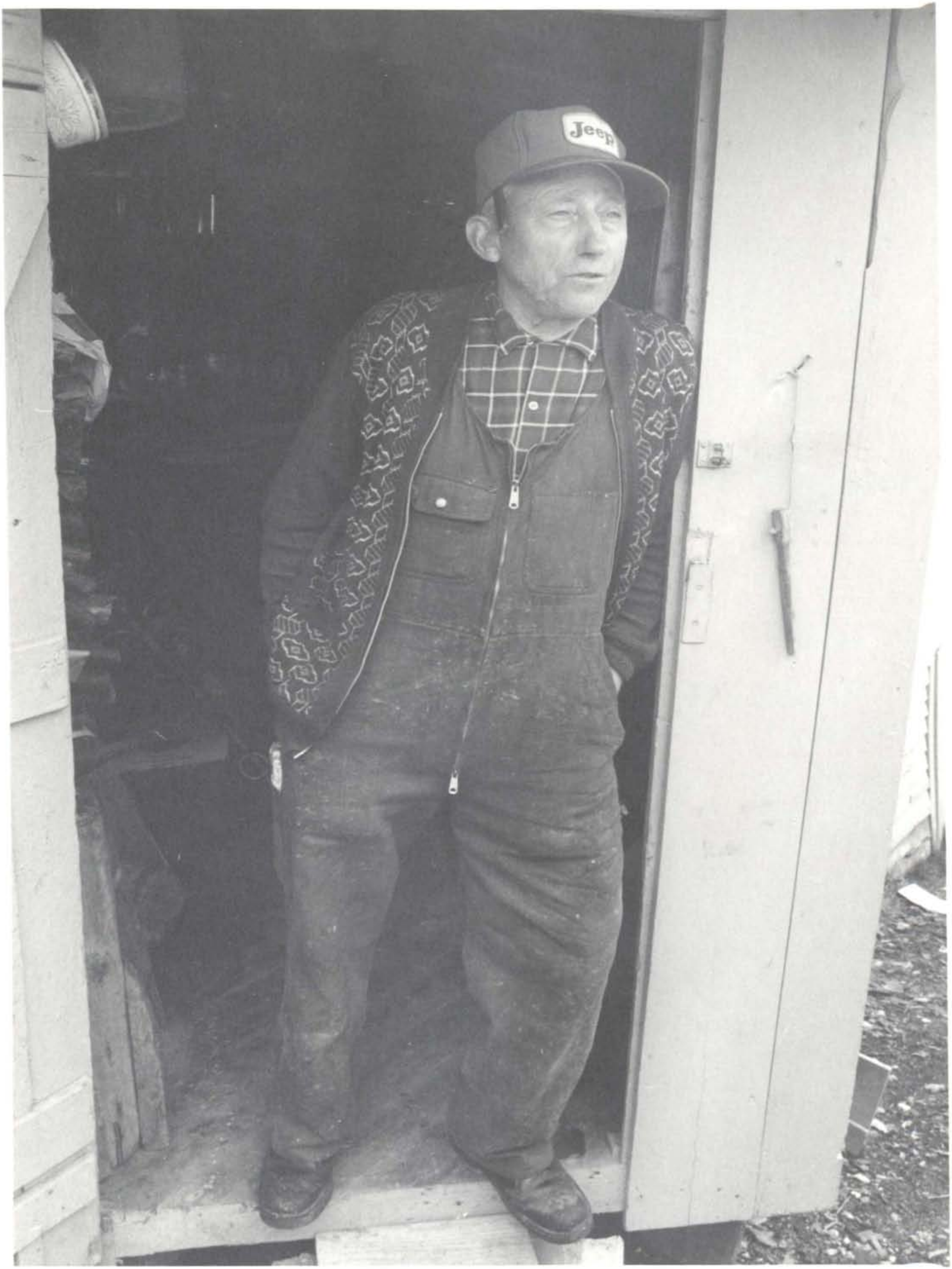


Fig. 110: Chesley Gregory.

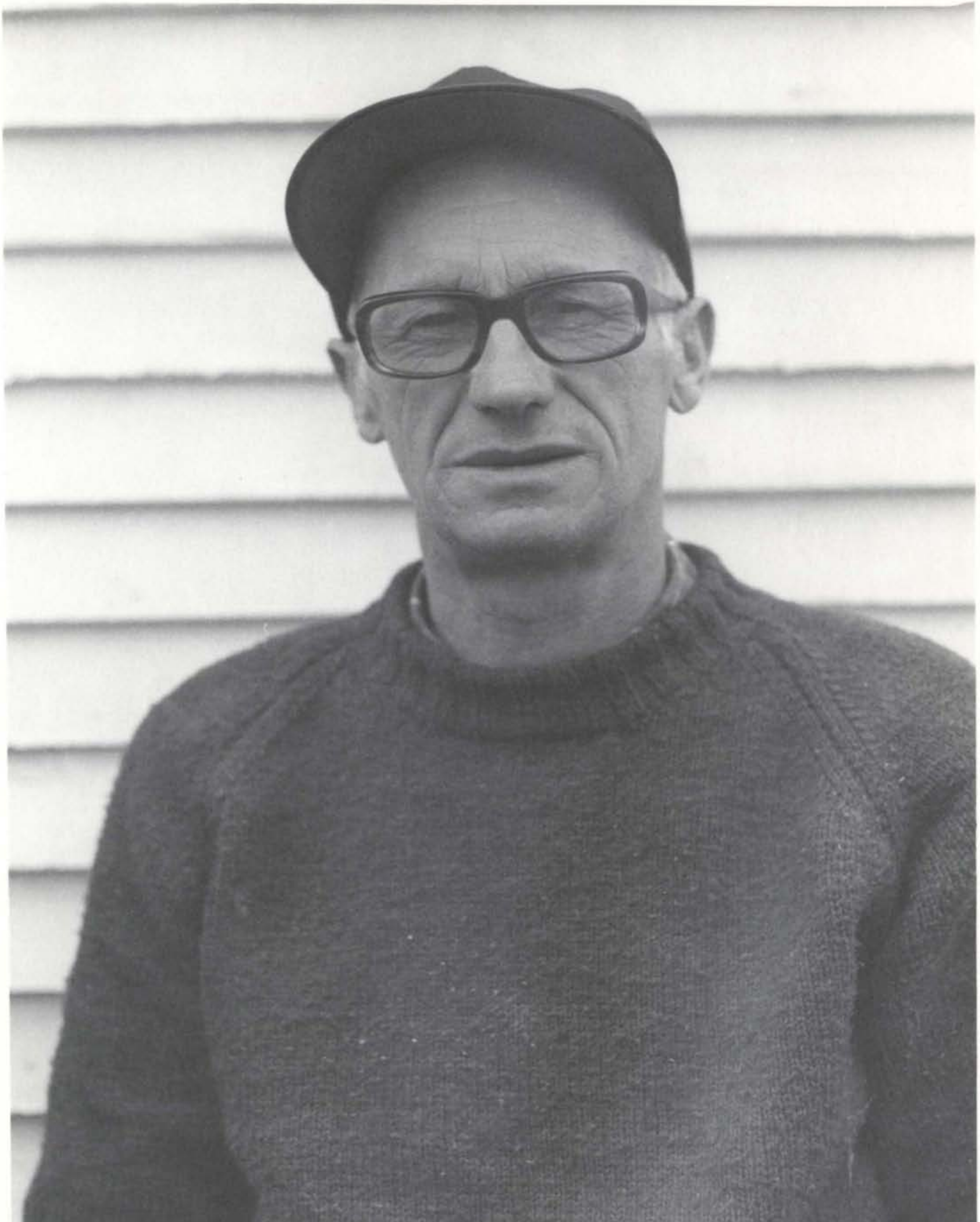


Fig. 111: Herbert Harnum.

Fig. 112: Wilson Reid.

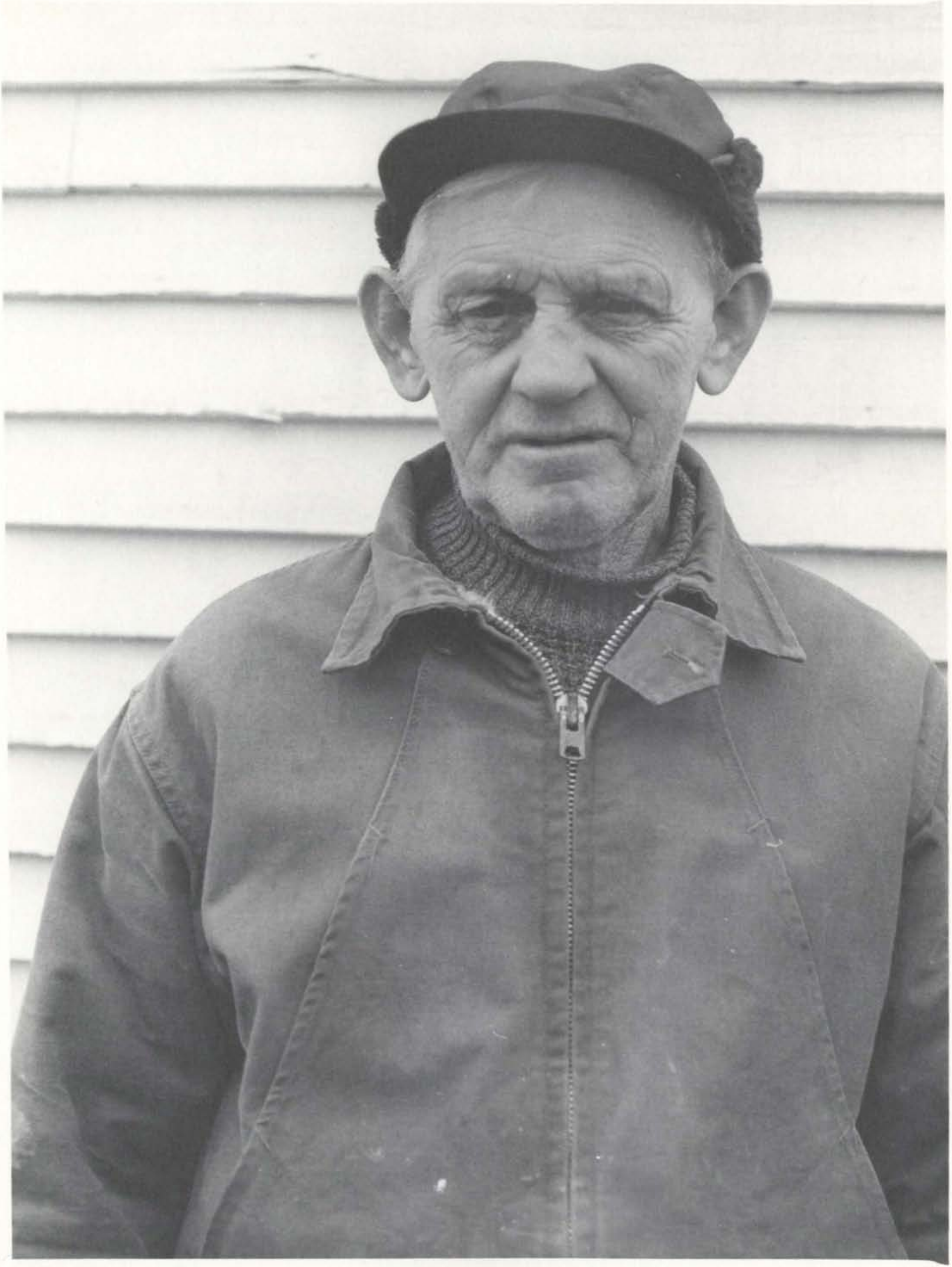


Fig. 113: Reuben Reid.

APPENDIX C

TABLES OF OFFSETS, STEM AND STERN PROFILES, AND LINES PLANS

		FORE HOOK	MIDSHIP BEND	AFTER HOOK
HALF BREADTHS	SHEER	26-0	31 11/16	30 1/4
	WL 33	—	—	30 1/16
	WL 30	25 5/16	31 9/16	29 11/16
	WL 27	24 3/8	31 1/8	29 1/4
	WL 24	23 5/16	30 5/8	28 15/16
	WL 21	22 3/16	30-0	28-0
	WL 18	21-0	29 1/4	27-0
	WL 15	19 3/8	28 1/4	25 3/8
	WL 12	17 1/8	26 7/16	20 9/16
	WL 9	13 5/16	21 1/2	8 7/16
	WL 6	7 5/8	7 3/16	3 3/16
	WL 3	1-0	1-0	1-0
HGTS. ABOVE BASE	SHEER	32 1/8	32 1/16	34 15/16
	BUT. 27	—	12 7/8	18-0
	BUT. 18	12 15/16	8 3/8	11 11/16
	BUT. 9	6 5/8	6 7/16	9 1/4
	KEEL BOTTOM	1-0	1-0	1-0

Fig. 114: Offsets for 16' rodney from the three-piece adjustable moulds of Chesley Gregory. (Measurements to inside of plank.)

		FORE HOOK	MIDSHIP BEND	AFTER HOOK
HALF BREADTHS	SHEER	26 1/4	35 1/4	32 3/4
	WL 33	—	—	32 3/4
	WL 30	25 1/4	34 3/4	32-0
	WL 27	24-0	34-0	31 3/8
	WL 24	22 5/8	33 1/4	30 3/8
	WL 21	21 1/4	32 1/4	29-0
	WL 18	19 7/8	31-0	26 1/2
	WL 15	18 3/8	28-0	19 3/4
	WL 12	16 7/16	19 5/8	11 1/4
	WL 9	14-0	9 7/8	5 3/4
	WL 6	10 1/8	3-0	2 1/2
	WL 3	1 1/2	1 1/2	1 1/2
HGTS. ABOVE BASE	SHEER	32 3/4	32 5/16	33-0
	BUT. 27	—	15 3/4	18 1/2
	BUT. 18	17 1/2	12-0	14 1/2
	BUT. 9	6 1/4	9 1/4	11-0
	KEEL BOTTOM	1 1/2	1 1/2	1 1/2

Fig. 115: Offsets for 20' motor boat from the three-piece adjustable moulds of Lionel Piercey. (Measurements to inside of plank.)

		FORE HOOK	MIDSHIP BEND	AFTER HOOK
HALF BREADTHS	SHEER	22 3/8	28 5/16	26 3/16
	WL 30	—	—	26 1/8
	WL 27	21 5/16	28 7/16	25 5/8
	WL 24	20 3/16	27 3/4	25 1/16
	WL 21	19-0	27 5/16	24 7/16
	WL 18	17 9/16	26 3/4	23 3/4
	WL 15	16-0	25 15/16	22 1/4
	WL 12	14-0	23 11/16	16 1/2
	WL 9	10 15/16	15-0	8 11/16
	WL 6	6 1/4	5 3/8	3 1/4
	WL 3	1-0	1-0	1-0
HGTS. FROM BASE	SHEER	29 7/8	28 1/16	30 1/8
	But. 27	—	19 3/8	—
	But. 18	18 3/4	9 3/4	12 9/16
	But. 9	7 9/16	7 13/16	9 1/8
	KEEL BOTTOM	1-0	1-0	1-0

Fig. 116: Offsets for 16' 4" rodney from the three-piece adjustable moulds of Marcus French. (Measurements to inside of plank.)

STERN PROFILE

COUNTER CROWN (37 3/8)	0
SHEER (36 3/8)	9/16
WL 36	13/16
WL 33	2 9/16
WL 30	4 1/4
WL 27	6-0
WL 24	7 3/4
WL 21	9 1/2
WL 18	11 3/16
WL 15	12 15/16
WL 12	14 5/8
WL 9	16 1/4
WL 6	18-0
WL 3	19 13/16
BASE	23 3/4

STEM PROFILE

STEM HEAD (38 3/8)	0
WL 36	7/16
SHEER (33 7/8)	7/8
WL 33	1 1/16
WL 30	1 3/4
WL 27	2 1/2
WL 24	3 3/8
WL 21	4 3/8
WL 18	5 5/8
WL 15	7 1/16
WL 12	8 3/4
WL 9	10 7/8
WL 6	13 5/8
WL 3	17-0
BASE	21 5/8

Fig. 117: Stem and stern profiles for 16' 4" rodney by Marcus French.

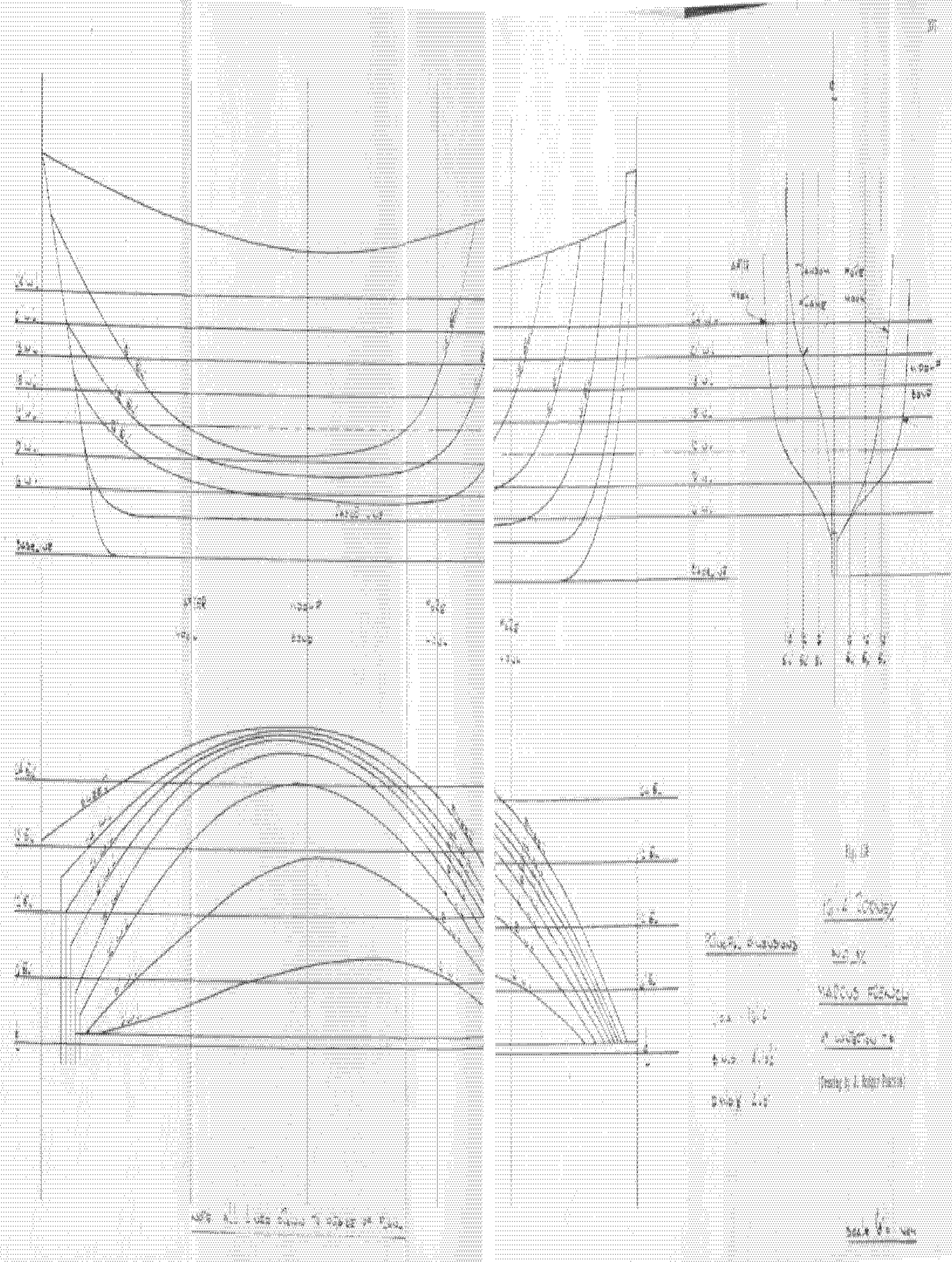


Fig. 13

STERN PROFILE

COUNTER CROWN (42-0)	0
SHEER (40 3/4)	1/2
WL 39	1 1/4
WL 36	2 7/16
WL 33	3 11/16
WL 30	4 15/16
WL 27	6 3/16
WL 24	7 3/8
WL 21	8 1/8
WL 18	9 3/4
WL 15	11-0
WL 12	12 1/4
WL 9	13 1/2
WL 6	16 1/16
WL 3	20 1/16
BASE	31-0

STEM PROFILE

STEM HEAD (41-0)	0
WL 39	0
SHEER (36 7/8)	1/32
WL 36	1/16
WL 33	1/8
WL 30	5/16
WL 27	9/16
WL 24	1-0
WL 21	1 3/4
WL 18	2 3/4
WL 15	4 1/16
WL 12	5 3/4
WL 9	7 7/8
WL 6	11-0
WL 3	15 1/2
BASE	28 1/4

Fig. 119: Stem and stern profiles for 15' 10" rodney by Marcus French.

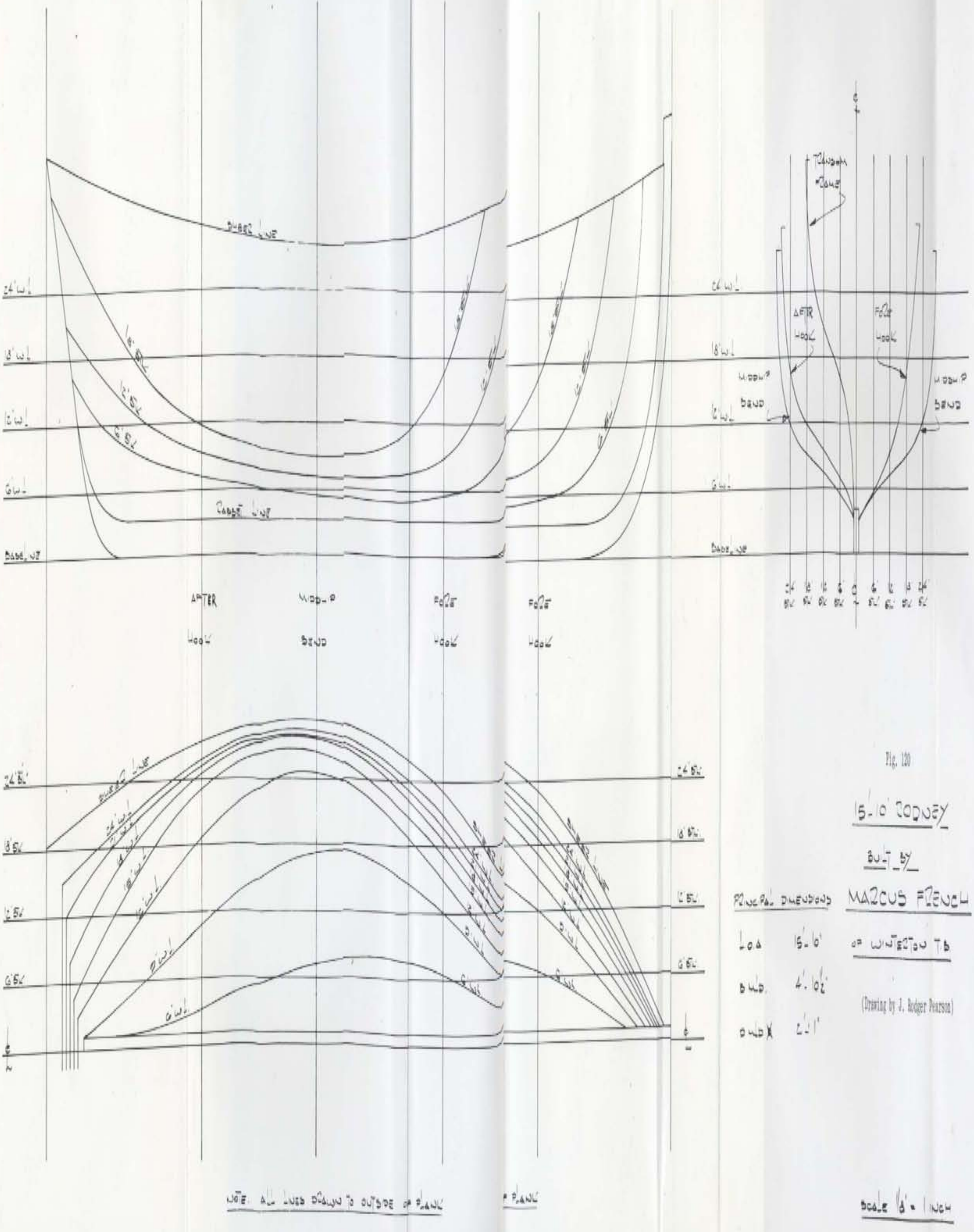


Fig. 120

(Drawing by J. Rodger Pearson)

		FORE HOOK	MIDSHIP BEND	AFTER HOOK	COUNTER
HALF BREADTHS	SHEER	26 7/8	30 9/16	27 13/16	21 5/8
	WL 33	26 7/8	—	—	11 1/8
	WL 30	25 9/16	30 9/16	27 11/16+	21 1/2
	WL 27	24 3/16	30 1/4+	27 3/8	21 3/16+
	WL 24	22 7/8	30 1/16+	27 1/16	20 15/16-
	WL 21	21 9/16	29 7/8	26 3/4	20 5/8
	WL 18	20 3/16	29 7/16	26 1/4	19 11/16
	WL 15	18 7/8	28 7/16	25 3/16	17 1/2
	WL 12	17 1/8+	26 5/16	21 11/16	12 11/16
	WL 9	13 1/16	18 7/8	13 7/8	5 13/16
	WL 6	6 11/16	8 1/16	6 1/8	1-0
	WL 3	1-0	1-0	1-0	1-0
HGTS. FROM BASE	SHEER	33-0	30-0	31-0	31 5/8
	BUT. 27	—	12 3/4	23 9/16-	—
	BUT. 18	13 5/16	8 13/16	10 5/8	15 7/16
	BUT. 9	7-0	6 1/4+	7 1/8	10 3/8
	KEEL BOTTOM	1-0	1-0	1-0	1-0

Fig. 121: Offsets of 16' 6" speedboat/rodney from the transverse moulds of Herbert Harnum. (Measurements to inside of plank.)

STEM PROFILE

STEM HEAD (45-0)	0
SHEER (42 1/4)	5/8
WL 42	11/16
WL 39	1 1/2
WL 36	2 7/16
WL 33	3 5/16
WL 30	4 5/16
WL 27	5 1/2
WL 24	6 3/4
WL 21	8 5/16
WL 18	10 7/16
WL 15	13 13/16
WL 12	15 1/2
WL 9	18 7/16
WL 6	22-0
WL 3	26 3/4
BASE	38 1/2

STERN PROFILE

COUNTER CROWN (33-0)	0
SHEER (31-0)	3/4
WL 30	1 1/16
WL 27	2 1/4
WL 24	3 5/16
WL 21	4 3/8
WL 18	5 1/2
WL 15	6 5/8
WL 12	7 11/16
WL 9	8 3/4
WL 6	9 15/16
WL 3	13 3/8
BASE	43-0

Fig. 122: Stem and stern profiles of 16' 6" speedboat/rodney by Herbert Harnum.

		FORE HOOK	MIDSHIP BEND	AFTER HOOK
HALF BREADTHS	SHEER	36 11/16-	38 1/4	36 15/16
	WL 42	—	—	—
	WL 39	36 1/16	—	—
	WL 36	34 9/16	—	36 7/8 -
	WL 33	33 5/16	37 13/16	36 1/16
	WL 30	32-0+	36 11/16	35 3/16
	WL 27	30 11/16	35 1/2	34 1/4+
	WL 24	29 7/8	34 3/8	33 7/16
	WL 21	27 15/16	33 3/16	32 1/2
	WL 18	25 1/2	31 7/8	30 15/16
	WL 15	20 15/16	29 1/8	27 3/16
	WL 12	15 9/16	23 1/8	18 1/16
	WL 9	10 5/16	14 15/16	10 11/16
	WL 6	4 15/16	6 13/16	4 13/16
	WL 3	1 1/2	1 1/2	1 1/2
HGTS. FROM BASE	SHEER	40 7/8	34-0	36 1/4
	BUT. 36	39 1/8	28 1/4	33 1/16
	BUT. 27	19 5/8	13 1/2	14 15/16
	BUT. 18	13 5/16	10 3/16	12-0-
	BUT. 9	8 3/8	6 13/16	8 3/16+
	KEEL BOTTOM	1 1/2	1 1/2	1 1/2

Fig. 123: Offsets of 21' 3 3/8" motor boat by Eleazor Reid. (Measurements to inside of plank.)

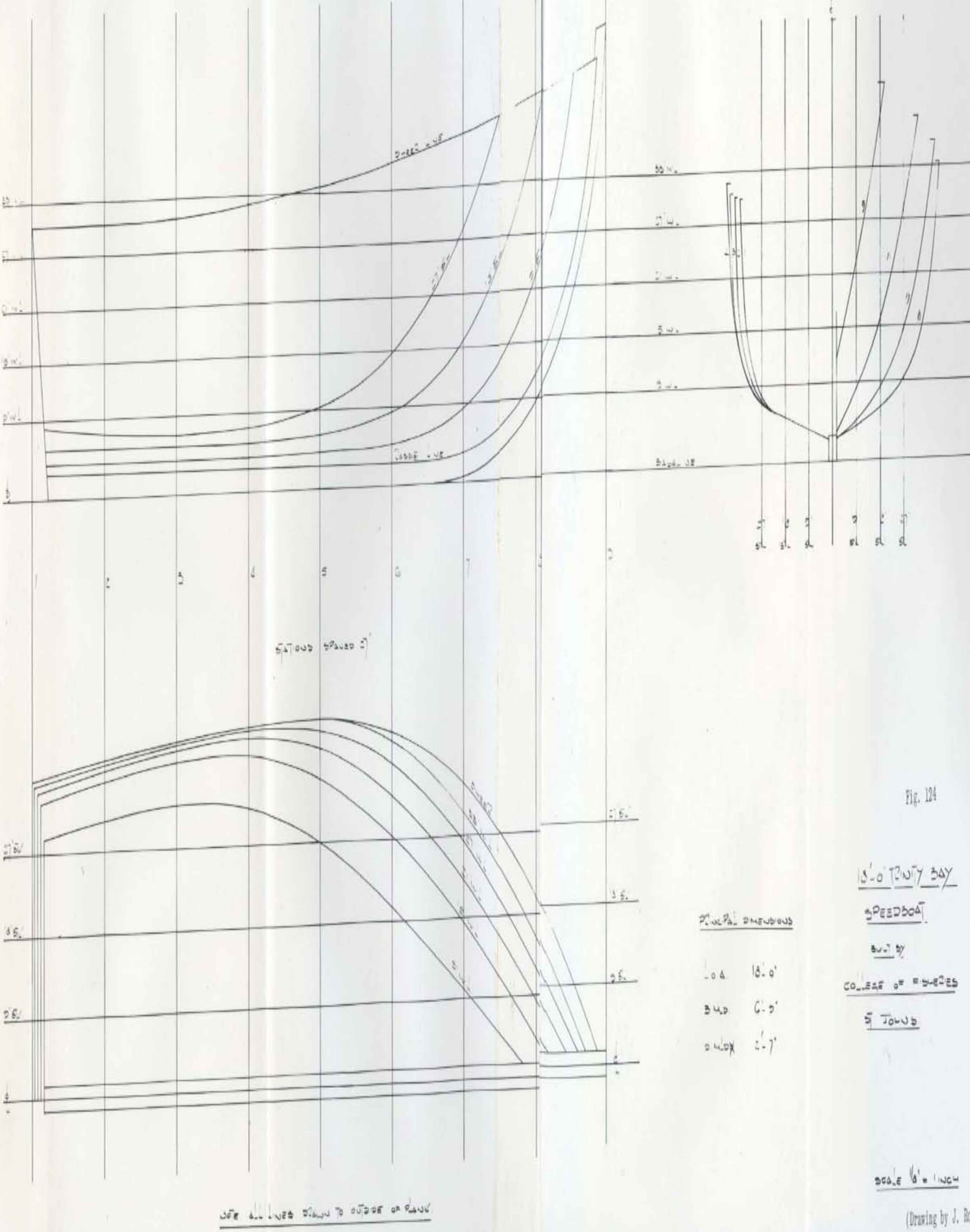


Fig. 124

(Drawing by J. Rodger Pearson)

APPENDIX D

GLOSSARY OF DIALECT TERMS

AFTER HOOK: the furthest aft of the three principal transverse sections (timber pairs) used in the design and construction of boats.

AFTER PITCHERS: the timber pairs in the after end of a boat, generally, those aft of the after hook.

AFTER STANDING ROOM: the working area between the midship bend and the after hook.

APRON: a heavy piece of wood located aft of the stem, running from the forward edge of the forward deadwood to the underside of the breasthook, which serves as a reinforcement for the stem and also as a support for the plank ends.

BACCALIEU SKIFF: a type of undecked, two-masted, schooner-rigged vessel of 35-45 feet in length used in the Baccalieu Island cod fishery. (Now extinct.)

BAY PUNT: a type of round-bottom carvel planked open boat, usually 18-19 feet in length, used specifically for the hunting of birds and seals during the winter.

BEARING: a term used to describe the degree to which a boat hull resists being pushed lower into the water in response to increased weight. For example, a flat bottomed boat is said to have a lot of "bearing," while a V-bottomed boat has less.

BINDING STRAKE: the topmost strake of planking, so-called because it acts to "bind" together the timber pairs at the top edge of the hull.

BOOM: a projecting spar or pole which is used to extend the foot of a sail.

BOXY: a term used to describe lumber which has the heart or center portion of a tree running through its entire length.

BREASTHOOK: a stout V-shaped section of wood fitted internally across the bows of a boat, at the sheer, directly aft of the stem.

BRIMMING: the process of applying hot tar to the exterior of a boat hull. (Practice now extinct.)

BULGE: the place of maximum curvature on the exterior of a boat hull, where the bottom rises to the side. Also called the CROP OF THE BULGE.

BULKHEAD: an internal transverse section used as a hull stiffener and/or divider.

BULLY: a type of decked fishing vessel, 30-40 feet in length, powered by a gasoline engine and sails. (Now extinct.)

CAULK: the act of inserting oakum between adjoining planks which have been fastened to the hull. Oakum is driven in place with the use of a caulking mallet and a caulking iron.

CEILING: boards laid over the timbers, near the keel, for added stiffness.

CLING: a term used to describe the degree of perpendicularity in the hull of a boat, from the turn of the bilge to the sheer. For example, a hull is said to have a lot of "cling" in it if it is perpendicular, or straight-sided.

COD TRAP: a floored pound net, approximately 60 fathoms in circumference and 10 fathoms deep, connected to the shore with a leader net.

COLLAR: a mooring.

COLLAR PUNT: a small rowing boat used to transfer fishermen from shore to another boat on a mooring, or collar.

COUNTER: the transom.

COVERING BOARDS: separate pieces of wood which are used to cover the fish well of a boat and prevent the sun from drying out the fish. Also called GANG BOARDS.

CROP OF THE BULGE: the turn of the bilge. See also BULGE.

CUDDY: a small, enclosed storage area in the forward section of a boat.

DEADWOOD: a solid piece of timber used to reinforce keel joints. The timber which backs up the joint between the stem and the keel is called the forward deadwood, and the timber which backs up the joint between the keel and the sternpost is the after deadwood.

DELL: the bilge; the area inboard near the keel where water collects.

DELL ROOM: see DELL.

ENGINE HOUSE: a small wooden structure which protects the engine.

FLARE: the degree to which the side of a hull, from the waterline to the sheer, spreads outward from the vertical or, the degree to which the stem slants forward from the vertical.

FLAT: a type of wooden, carvel planked open boat with a relatively flat bottom and a square stern, 15-20 feet in length, powered by an outboard motor, and used for fishing and bird and seal hunting. Also called SPEEDBOAT.

FLOATER: a vessel which participates in fishery activity by anchoring on fishing grounds, then sending small boats out to catch fish.

FORE HOOK: the furthest forward of the three principal transverse sections (timber pairs) used in the design and construction of boats.

FORWARD PITCHERS: the timber pairs in the forward section of a boat, generally those forward of the fore hook.

FORWARD STANDING ROOM: the working area in the forward part of a boat.

FULLER: the last plank laid on a boat hull, generally located at the turn of the bilge.

GAFF: (1) a wooden spar used to extend the head of a fore-and-aft sail; (2) a short stick or pole with a sharpened hook attached to one end which is used to impale large fish prior to hauling them aboard a fishing boat, or for hooking onto any object.

GANG BOARDS: see COVERING BOARDS.

GARBOARD: the plank next to the keel.

GRAIN-CUT: a term used to describe wood that has been sawn in such a way that the grain runs perpendicular to the shape of the piece of wood rather than in the same direction.

GUN'ALES: the top edge of the side of a boat.

HEAVE OUT: see LIST OUT.

HOLLOWING: the amount of concavity present in the bottom of a boat between the keel and the turn of the bilge.

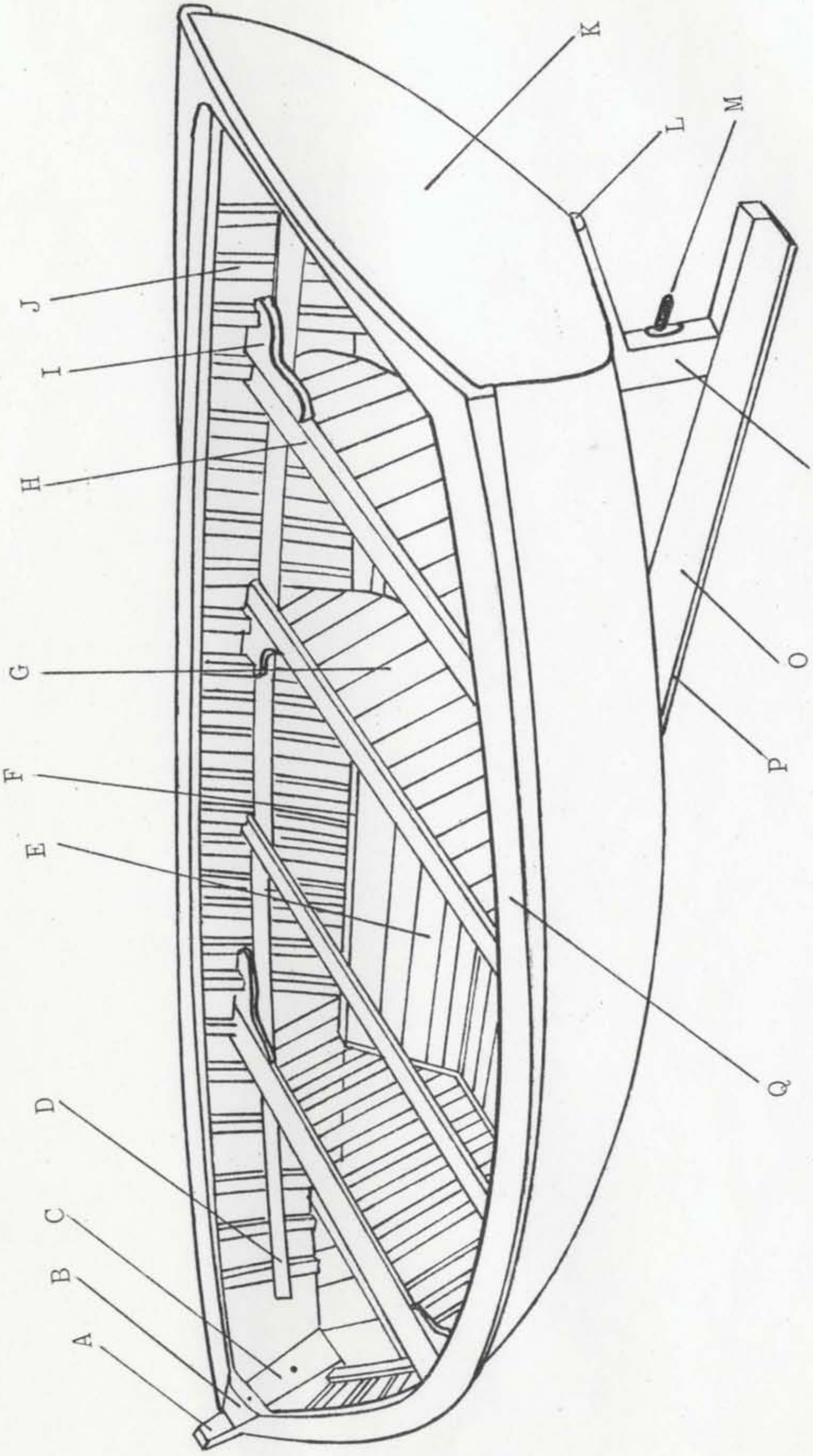
HORN TIMBER: a timber that runs from the sternpost to the transom along the centre line and supports the weight of an over-hanging stern.

JACK SCREW: an adjustable C-clamp.

JIGGER: (1) a small gaff-rigged sail set on a mast at the stern of a small boat; (2) a multi-hooked lure used in the squid fishery (a squid jig); (3) a weighted,

Fig. 125: Trap Skiff Parts.

A:	stem head	J:	timber
B:	breasthook	K:	counter
C:	apron	L:	tuck
D:	rising	M:	shaft
E:	midship room	N:	sternpost
F:	sparkin	O:	keel
G:	bulkheading	P:	shoe
H:	thwart	Q:	gun'ale
I:	thwart knee		


A
B
C
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E
F
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H
I
J
K
L
M
N
O
P
Q

double-hooked lure used in the cod fishery (a cod jigger).

JUNIPER: the larch or tamarack (Larix laricina).

KEEL: the main longitudinal strength member of a boat hull, which is scarfed to the stem, forward, and the sternpost, aft.

KEELSON: a piece of wood installed above and running parallel to the keel which is used to impart additional stiffness to the hull.

KNEE: a naturally-curved piece of wood used for boat parts which require curvature of approximately 90°.

LATHS: thin, hardwood timbers which are steam-bent prior to installation.

LIST OUT: to lean over; to tip to the outside.

LOP: a state of the sea characterized by short, choppy waves.

MIDSHIP BEND: the centre-most of the three principal transverse sections (timber pairs) used in the design and construction of boats.

MIDSHIP ROOM: the area at or near the centre of a boat which is used as a fish hold.

MOTOR BOAT: a type of wooden, round-bottomed, carvel planked open boat powered by an inboard engine, usually 22-34 feet in length, used for fishing, bird and seal hunting.

MOULDS: (1) three-piece adjustable templates used to lay out timber shapes; (2) transverse sections set on stations across the keel around which planks are bent to obtain the shape of the hull; (3) non-adjustable templates used to lay out timber shapes.

OAKUM: rope fibres twisted together and used as caulking material.

OFF-AND-ON PUNT: see COLLAR PUNT.

PADDLES: wooden oars, 7-10 feet in length.

PAINTER: rope attached to the stem of a small boat which is used for towing or tying up.

PICKING OFF: the process of taking plank width measurements with the use of a spiling batten and dividers.

PIGGIN: a small wooden scoop used to bail water out of a boat.

PLANK: any one of a series of boards which make up the outer skin of a boat hull.

PUNT: a general term applied to small open boats.

QUINTAL: a unit of measurement for dried fish; 1 quintal equals 112 pounds of fish.

RABBET: a groove or channel worked into a member to accept another, without a lip being formed. For example, a rabbet is often cut into a keel into which the garboard plank is inserted.

RAKE: inclination from the vertical, usually applied to masts, stems or sternposts.

RIBBAND: thin, flexible strips of wood which are temporarily attached to timbers or moulds in order to approximate a hull shape.

RIBBON: see RIBBAND.

RISING: the distance between the bottom of the keel and the turn of the bilge. Also known as "deadrise." A boat is said to have a lot of "rising" if there is a large distance between the bottom of the keel and the turn of the bilge, and, conversely, not much "rising" if the distance is small.

RISING BOARD: a flat, rectangular piece of wood which is one element of the three-piece adjustable template system. It is used to represent the keel during the designing process.

RISINGS: internal, horizontal wooden battens attached to the timbers upon which rest the thwarts.

RODNEY: a type of wooden, round-bottomed, carvel planked open boat, usually 15-16 1/2 feet in length, used for fishing, bird and seal hunting, and as a collar punt.

RUBBER: a strip of wood attached to the outboard surface of a hull which is used to protect the hull from wear and tear.

RUDDER: a stern-mounted hinged device, usually of wood, which is used for steering and maneuvering a boat.

RULE STAFF: a flexible wooden batten used in the transfer of plank shapes from the hull to the plank stock.

SCARF: a tapered or wedge-shaped joint which joins together two structural members.

SCORE: see SCULLING HOLE.

SCORE HOLE: see SCULLING HOLE.

SCULL: the act of propelling a boat forward through the use of a stern-mounted oar which is rotated in a figure-8 pattern.

SCULLING HOLE: an open port in the transom through which a sculling oar is passed.

SCULLING OAR: a long wooden lever worked with the hands to propell a boat forward.

SKIFF: see TRAP SKIFF.

SHEER: the line described by the upper edge of the hull of a boat.

SHOE: a replaceable wooden or metal guard attached to the keel of a boat.

SHOOTS: the floor boards in the forward and after standing rooms of a boat.

SIR MARKS: the points or stations marked on moulds.

SPARKINS: two pieces of wood, one port and one starboard, which are the top-most of the boards which line the midship room.

SPEEDBOAT: see FLAT.

SPREAD: a wooden pole set diagonally across a fore-and-aft sail in order to extend the peak of that sail.

SPREAD SAIL: a quadrilateral sail extended by a spar reaching diagonally from the mast to the uppermost corner or peak of the sail.

SPUR SHORES: wooden boards or poles which are used to brace the side of a boat, or to hold boat parts in position during the initial stages of boat construction.

STEAM: (1) to make timbers flexible by exposing them to the vapour from boiling water; (2) to make timbers flexible by soaking them in hot water; (3) to motor about in a boat, as in: "We steamed into the harbour in our trap skiff."

STEM: the principal framing member of the bow of a boat to which the planking is fastened; the forwardmost part of the hull.

STEM HEAD: the portion of the stem that rises above the sheer line.

STERN KNEE: a naturally-curved piece of wood used in the construction of the stern which reinforces the joint between the sternpost and the keel.

STERNPOST: the upright timber joined to the after end of the keel.

STOPWATER: a softwood dowel driven into the joints between backbone members to prevent water from leaking into the hull along the seams of the joints.

STORE: a small storage building or workshop.

STUFFING BOX: a device designed to prevent leakage into the hull from the hole drilled to receive the propeller shaft of an inboard engine.

STUTTLE: a pair of matched timbers.

SUENT: that which possesses a fair curve. For example, if the outer surface of a hull is smooth and even, without humps or hollows, it is said to be "suent."

THOLE PIN: a short, cylindrical piece of wood which fits into a hole in the gunwale of a boat which is used to keep an oar in place while rowing.

THWART KNEE: a naturally-curved piece of wood used to brace a thwart.

THWART: a board fitted into the interior of a hull transversely which is used as a seat and/or a hull stiffener.

TILLER: a piece of wood used as a handle to turn the rudder.

TIMBER: a wooden transverse member, made up in pairs, which is fastened to the keel and the planks.

TIMBER LINE: a baseline drawn onto the keel which is used in the establishment of sheer heights.

TRAP SKIFF: a type of wooden, round-bottomed, carvel planked open fishing boat, usually 26-34 feet in length, powered by an inboard engine.

TUCK: the point on the outboard face of the stern where the bottom of the counter meets the sternpost.

TUR: a seabird, the Atlantic murre (*Uria aalge*).

VAR: the balsam fir (*Abies balsamea L*).

WALL-SIDED: the condition of the side of a hull which exhibits a high degree of verticalness. See also CLING.

WHIFF: a piece of rope spliced or otherwise fastened in the shape of a circle which is used to hold an oar in place against a thole pin while rowing.

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