

# VIKING REPLICA

by LANCE LEE



## SEBBE ALS

*The thing is — to get the people  
MOVING!* —Niels Jannasch

Vessels move people. And they move elephant tusks, heavy Iranian crude, Demerara rum and mandolins. Antarctic explorers, wheat to Russia, and pilgrims across oceans. From the farthest reaches they freight our greed and sentiment about. But, more than that, they move our souls.

Ted Spiegel

More and more needful today is the experience of deep and humble appreciation for proportion, grace and good sense. The very elements which move us to interrupt anything for the chance to gaze in awe at the magnificent convergence of lines in certain of the Herreshoff designs, those mute understatements of symphonic proportions. To actually *stop* a moving automobile, get right out and watch an oyster dredge moving up against the current in tide-water Maryland with a stateliness never seen under power.

The traditional smallcraft of many, many nations are today having that impact on our culture. An emotion roused, a dream begun, a conviction startled awake; maybe this function will serve us even more than their transport of our codfish, chilled beer and diving gear, our escape from the mainland for an afternoon, or even our returned sense of oneness with water, wind and wood. Certainly an increasing number today are again moving. They are either going back for the forgotten pleasures of difficult, strange rigs and shapely hulls whose care is intricate and exquisite, or they are galloping along to a future in which the importance of such matters in our tempestuous age is ever more acute. Forward or back; it doesn't matter a bit. Many are moving and they are doing so because *they* have been moved. The traditional wooden boat is doing her work as well here as ever she did running swordfish in from No-Man's Land, or crawfish and sponges to Nassau.

The SEBBE ALS, an authentic re-

production of a Viking warship, may, if recognized as she deserves, move more people per centimeter of waterline length than any small craft we have witnessed. She will be in New York on July 4th on the occasion of Operation Sail's parade up the Hudson River, and she will be significant not simply for her striking appearance. It is rather widely accepted that Viking ships were the first European vessels to reach this shore. Archeological excavations during the early 1960's at Helge Ingstad in Newfoundland established Norse settlement in the New



SEBBE ALS Guild

*"The right oak was found and split into boards with ash wedges".*

*The interpreted reconstruction of Skuldelev Wreck 5, from which SEBBE ALS was built.*



Courtesy of Viking Ship Museum

World around A.D. 1000. This is within 50 years of the dating of the wreck from which the data for building SEBBE ALS was taken. But more significant by far to our nation striving for unity, this Danish craft speaks for as positive an example of community involvement as we could seek in answer to the question of "What shall I do today?"

She was built entirely with hand tools, many of them Norse replicas, over a period of three years by the Boy and Senior Scouts of Augustenborg, Denmark. The Tall Ships of Operation Sail will evoke nostalgia, pride, awe and hope. They will also evoke wishful thinking and the frustration of "But there's nothing to do in *my* neighborhood." This frustration, uttered in bitterness, in resignation or sheer indifference, is a widening sorrow of modern life. The little square rigged Viking, handsomely and strongly built by 44 amateurs for \$3,000, magnificently illustrates how you can change that.

She illustrates a very beautiful triangle. If we consider either the "quality of life" issue or that of contemporary education, how often do we find the following three elements? First, deliberate and careful research, into the fund of history through artifacts, libraries and the close questioning of older people with the intent of *immediately using* the result of such "cultural journalism". Second, activated and reactivated skills of craftsmanship which have gone almost beyond our reach. Third, sheer adventure, the experience of going to Nature's domain in a small vessel.

The SEBBE ALS project began in a lecture hall. A group of Danes heard Ole Crumlin-Pedersen, then engineer for the Laboratory of Ship History of the Danish National Museum, speak of the 1962 salvaging of five Viking vessels from the Skuldelev area of Roskilde Fjord. They asked to be allowed access to the Museum source material to build a copy of one. Crumlin-Pedersen agreed on the condition that authentic details of construction (to include use of tools and known working methods) govern. Handwrought adzes copied from Swedish burial finds set a standard of conformity from which the builders seldom departed.

The SEBBE story, then, is classically simple: A group of Danes, tired of sitting on their hands, learn of the underwater excavation of five vessels, build a 55 foot reproduction of one of them entirely by hand with \$3,000 and the technical help of a museum. They then sail and row the vessel to her probable origins in Norway and return to their homes to relive their experience in thought, tale and prose while again

growing restless to achieve.

This is the stuff of Odysseus — with the exception that this crew built the boat themselves. What is missing from the above account is the "why" and the "how", the levels of frustration and of satisfaction, the doubt, the wonder, the discovery of how she'd sail, the help from all quarters — community and industry, blacksmiths and historians — and the significance of this venture, weighed with an eye to others of us, broke perhaps, and yearning for experience, but preyed on by doubts as to our abilities, our bargain with Time and the worth of starting on anything before we find out who will be the next president.

To begin with the last: The significance of the SEBBE ALS lies in the length of the shadow she casts. She is a very small vessel but her physical presence puts into shadow the widespread belief that for any comparable undertaking vast sums of money, experts and consultants, modern fireproof buildings with lighting and heating, and finally government support are preliminary necessities. She was built by the force of tenacity. Materials were provided by both Nature and Man working in concert. Know-how was gained mainly in the old school of trial and error, but the knowledge and resources of a prestigious institution, the Danish National Museum, were freely offered, and offered *outside* of its precincts, which is surely a magnificent role for a museum today. Built in an old shed, the initial support came from a parents committee. In the words of her builders, "A smallish amount was granted to buy tools".

Essentially these Danes, kids and young adults, as similar ones have for thousands of years, craved experience in square rig, in using their hands and their time sensibly; they wanted to overcome the growing dross in the daily work of the Boy Scout movement which, in their own terms, "was more or less theoretic or unreal and had nothing to do with everyday life". They have revealed to us what *any* community can do about comparable circumstances. Pick a vessel or project, enlist the young and older craftsmen and women of the district when needed, request donations from local businesses, parents and service clubs and stop waiting for things to get better by themselves. The key is scale. The SEBBE is small. Small is beautiful.

The grandeur and romance of the large sailing ships keep them alive, suggestive of a time in the past when a storied dignity circumscribed marine affairs. But the cost in building, operating and maintaining means today that the cost per

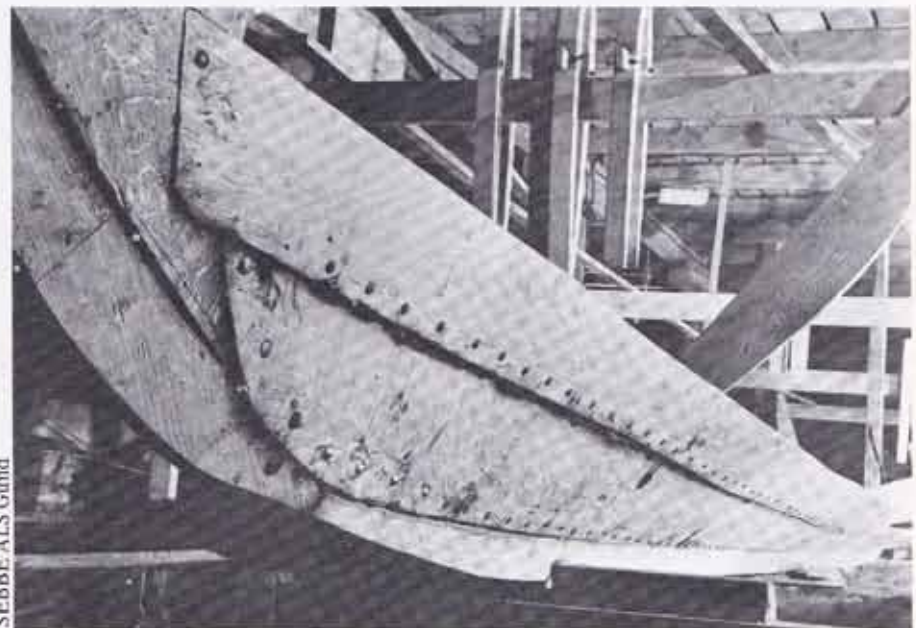
cadet or student restricts such experience to a very few who are fortunate enough to gain competitive appointments or scholarships, or wealthy enough to pay. The SEBBE ALS suggests a perfectly viable route for all of those who hunger for such romance. Trade labor for experience. Learn throughout the process, doing it as a community. Ease will not characterize any part of it. Frustration and struggle, whapped thumbs and loss of sleep does, as well as ownership, pride, capability and the sort of independence which being able and resourceful affords. It's a good trade-off. But the significance of this trade-off lies in the fact that communities or groups can *overcome* the whole sense of being deprived an opportunity through lack of funds or political clout. The Augustenborg ingredients were the will

to begin and the tenacity to continue.

The philosophies of Norse shipbuilding deserve special attention. Sparing use of timber, light and flexible construction, an uncanny use of wood, (responding to the places of maximum strain with solid timbers, lesser strain with scarfs), the use of crossbeams in place of closely spaced frames, planking hewn out radially, (rather than tangentially) to maximize the natural strengths of the grain, to minimize shrinkage and swelling and avoid cutting across the fibers in the longitudinal plane. These Norse techniques give evidence of masterly boat and shipbuilders. Sean McGrail concludes his fine study, *The Gokstad Faering*, with this tribute: "Without modern methods of analysis and testing of materials, boatbuilders of the Viking Age evolved techniques



SEBBE ALS Guild



SEBBE ALS Guild

of choosing the right tree, converting it at the right time and in the right manner to produce the best timber for building those types of boats which best suited their environment and economy. These boatbuilders can not be faulted on any major point; they achieved a near optimal solution."

Much of the appreciation for and practice of these skills has perished. In place of light and flexible construction, a tradition of massiveness and rigidity, of heavily timbered vessels came to characterize the boats of our western tradition. It is but slight exaggeration to say that the old Norse rule was flexibility; the replacing faith, rigidity. Where the Norse hulls were designed to *absorb* the impact of the seas, the more recent and rigid craft *withstand* the blows of the same. The ancient judo principle applied — yield to your assailant. Bo Hansen, one of the SEBBE builders, comments after extensive sailing, "Due to the construction of this ship without frames, it takes waves of up to two meters because the hull is practically wringing with the waves".

In about 1870 in mid-coast Norway, the ottering type, forty feet of open boat, was still being built without inner or outer wale, braced with crossbeams to prevent "spreading" as were her Norse predecessors. They were incredibly flexible. Around 1850 the Morningsbat was introduced, a decked and vastly more heavily-timbered fishing craft which opened up the industry to the later engined era and increasing rigidity. A compelling question for the boat sleuth is, "Why did the divergence from the flexible to the rigid occur?"

One answer, the best I have come upon, lies with the introduction of the saw. When a timber is split, the bundles of fibers resist the line of severance, remaining intact and preserving the timber's strength in nature's own pattern. When cut, the fibers are separated and the same dimension timber is weakened at the will of man. There is

excellent reason to suspect that sawn timbers, withstanding less of the sea's thrust, led to heavier scantlings in vessels in which the laying on of saws was permitted. This is a hypothesis, not a proof, but one which Hartvig Nielsen, leader of the replica of the Ladby (Denmark) Viking ship, accepts. Norse builders may well have rejected it as a boatbuilders tool. It is significant that the Scandinavians then possessed saws, known from a circa 1000 A.D. tool discovery in Mastermyr, Gotland. More significant is that saw marks appear on none of the Viking ship finds to date while those of the axe and plane have been clearly identified.

I offer no resolution, no "this-is-better-ism". A rough division might be that boatyards, engaged in building

commercial or recreational boats, are economically linked to the saw and perhaps thus to more rigid boats. The amateur and recreational builder and the community project might well consider the older, more "primitive" and quite possibly optimal techniques and types.

The importance of this issue — flexibility vs. rigidity — touches on many factors critical to the future of the wooden boat. The amount of necessary timber, the length of building time, the resultant weight and thus energy needed to propel. The reintroduction of skills, techniques and types as well as the attitude taken towards nature (whether to withstand or absorb her force) — these are matters for more than winter discussion around the potbellied.



SEBBE A/S Grøit

Ted Spiegel



As to the "how" of it all: This is not a construction story; I was not there, and so much was learned through trial and error that no attempt will be made at thorough explanation. What seems critical is that the builders were amateurs — the "mystery" of how you would ever do this, (or anything), simply went away as the means were found to do what they had not previously done. She is "shell" as opposed to "skeleton" constructed, i.e., after the keel and keelson were stretched and the stem and stern posts married (with vertical rather than horizontal scarfs), the garboard and three next planks were riveted up around molds with no frames in place. This method greatly facilitates both initial riveting and the fitting of the frames and *bites* (midship reinforcing timbers lying above and parallel to the frames).

Some impression of the boat may be gained from knowing that in salvaging Skuldelev Wreck 5, from which she is copied, 270 separate component parts were raised, many in fragments. The detailed study and discussion of this and the other wrecks was published (*Acta Archaeologica* Vol. XXXVIII) in 1967 and was thus available to the builders. An appreciation of the intricate problems encountered may be gained



by quoting the above article concerning one part, — the stem:

"It is constructed of two pieces of timber, scarved one on top of the other.... The preserved piece is 1.73 m. long and 0.44 m. broad with six steps for joining to the ends of the planks. The stem is deeply hollowed out and has a deep V-shaped cross section.

Each side of the stem is carved so that the lines of the clinker planks are continued along it.... The way

in which the planks are joined is best followed on the port side. The first strake is spiked to the stem directly above the vertical scarf between keel and stem; strakes 2B, 4B, 5B, and 6B are fastened to their corresponding steps with 3-5 rivets while strake 3B, which does not extend right up to the stem, is fitted into the broad end plank of strake 2B, 0.90 cm aft of 2B's scarf at the stem."

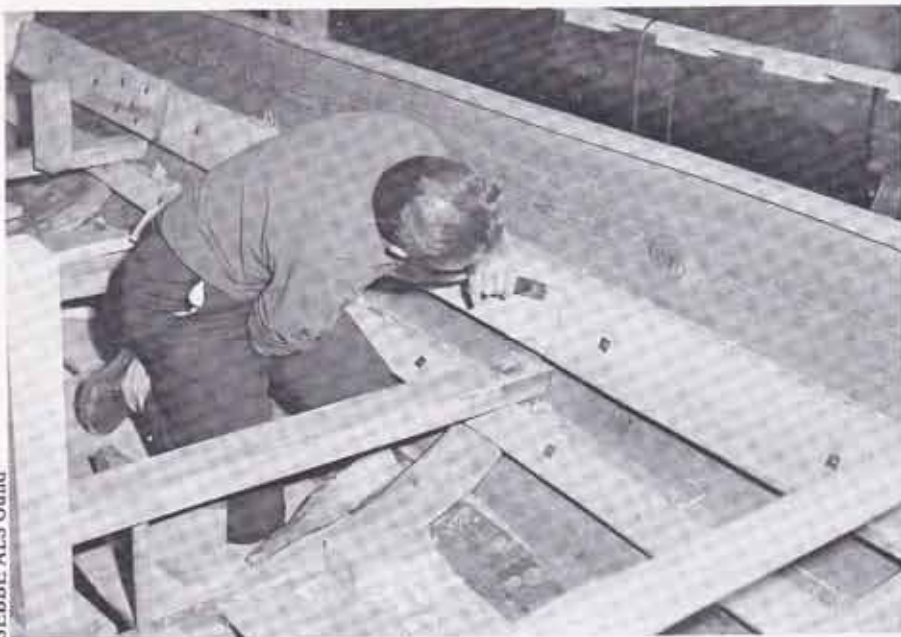
Ole Crumlin-Pedersen, one of the

authors of the article, is at once a meticulous historian and an empathetic mentor. His work provided great detail and pure understanding. What is marvelous is that the community of the *totally uninitiated* simply gathered and *did it*. From the intricacy of the above paragraph and the successful completion of the SEBBE we should infer that any group can accomplish as much, given time and will.

The Danes have built four Viking vessels, two large, and two small, in serious bids to revive the understanding and practice of their own heritage. Much credit goes to Hartvig Nielsen, a teacher who urged that the Viking Age should serve as a background for the 50th Anniversary celebration of the Danish Boy Scouts. His own project, the IMME GRAM, a ship comparable to the SEBBE, parallels much of the Augustenborg project.

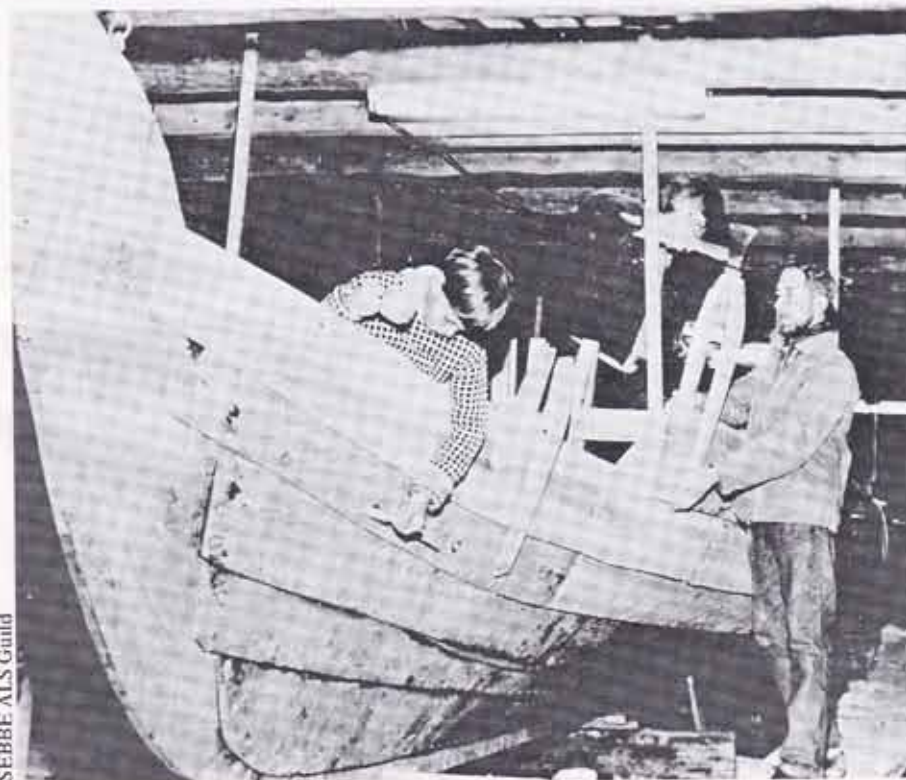
A measure of the authenticity of the SEBBE is illustrated by the lower oak planking. Practice runs in splitting oak logs resulted first in the building of a Viking house and then the keel, as the search for the right tree for planking continued. In the autumn of '67 a gale blew down thousands of trees in South Jutland. From them they procured stem and sternpost. The following winter the right oak, ten meters long and 150 cm. in diameter, was found and split into boards with ash wedges. The boards were then hewn by adzes into planking. Upper strakes (in keeping with wreck 5) are hewn from ash.

Much has stemmed from that lecture hall. In '68 it became apparent that more hands were needed. The SEBBE ALS Guild was formed from surrounding communities and included school boys, and apprentices from industry who all spent their spare time in building. In 1969 the labor of love was launched, and in 1972 the Guild (which numbers a constant 80) sailed and rowed their ship to Oslo, Norway, taking 111 hours and 47 minutes to cover the 373 nautical miles. From this expedition and the many local ones taken from around the islands of Als (Sebbe of Als was a legendary Viking) Bo Hansen, a builder/member, notes of her sailing properties, "the ship *can* beat, although a lot of people think that this could not possibly be done." Speaking of her performance off the wind, he adds, "With only 42 square meters sails the ship has reached a speed of 11 knots. The average is about 5... and under particularly favorable conditions speeds of 7 to 8 knots are not unusual. These high speeds are owing to the long water-



SEBBE ALS Guild

"What seems critical is that the builders were amateurs — the mystery of how you would ever do this (or anything) simply went away as the means were found to do what they had not previously done".



SEBBE ALS Guild

line of the ship of about 15 m and its small breadth (2.5 m) as well as a relatively flat bottom."

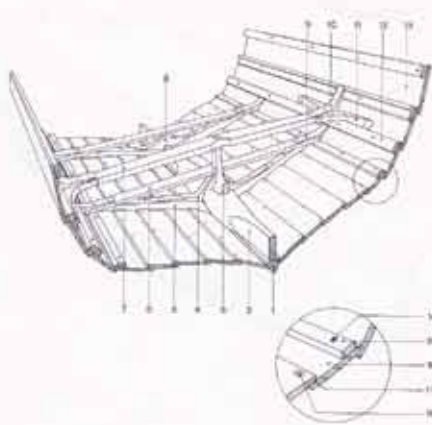
Leadership for such a project is absolutely critical. Carl Otto Larsen and Edith, his buoyant, laughing wife, provided this. He "apprenticed" in the Danish resistance of WW II, developing resourcefulness, tenacity and purpose from being driven underground and living by his wits while confronting the Nazis. The SEBBE is his triumph, but purely in the tradition of Lao Tzu, who notes of great leadership that when the work is accomplished those led remark, "See what we have done".

Perhaps the finest question the SEBBE raises concerns the quality of life. That question: Does buying one off the shelf, one that has the same *shape* and the promise of not having to be cared for, enhance the quality of one's life more than creating one through innumerable hours, frustration, fatigue, discovery and skills, and then caring for as well as using, the result?

This question seems as valid for a bowl as an adze, an apronful of carrots, a loaf of bread, a quilt or a small boat. We are indeed in an age of transition in which the answer is no longer simply one's wealth. ("If rich, it's better to buy one and you have more time to play; if poor you have to make one.") Today the hollow ring of a lifestyle simply bounded by purchased items made easier and easier to use, taken for granted and then discarded, has many people moving towards the opposite — makin' 'em.

Where small craft are concerned that "opposite" is often the traditional wooden boat. Joy or fun seem to depend often on difficulty, time, judgement, skill, and at times danger. Which one offers more — the cut-down inboard marconi rig or the incredible spread of canvas of the old sandbaggers, the fascinating topsail rig of the Albermarle shad boats, the apparently outdated squaresail? As to creating, will you pour your boat out of a bucket or lay her up piece by piece, plank on frame in skill and sweat? There is room today to find out if fun can emerge, butterfly-like, from adversity and decisions, practiced excellence and time-consuming disciplines.

Furthermore, if our primary purpose concerns the quality of living, and within this lies the act of doing so in harmony with Nature, it's compelling to explore the flexible rather than rigid smallcraft. Build to an old Norse rather than contemporary recipe. Or (closer to the wind) build a boat by splitting all the timbers rather than sawing. Compare the Eskimo kayak, all parts of the



Technical terms used in the description of the construction of the ships. 1: keel, 2: keelson, 3: mast step, 4: keelson knee, 5: frame, 6: bite, 7: cross-beam, 8: snelle, 9: bite knee, 10: vertical beam knee, 11: horizontal beam knee, 12: stringer or beam shelf, 13: gunwale plank, 14: trenail, 15: stringer, 16: plank (5th strake), 17: land, 18: iron nail clinched over square rove.

skeleton of which are split, with the sawn frame boat regarding the issues of light and flexible vs. heavy and rigid. For recreational rather than commercial projects, the undeniably harder route yields surprising benefits.

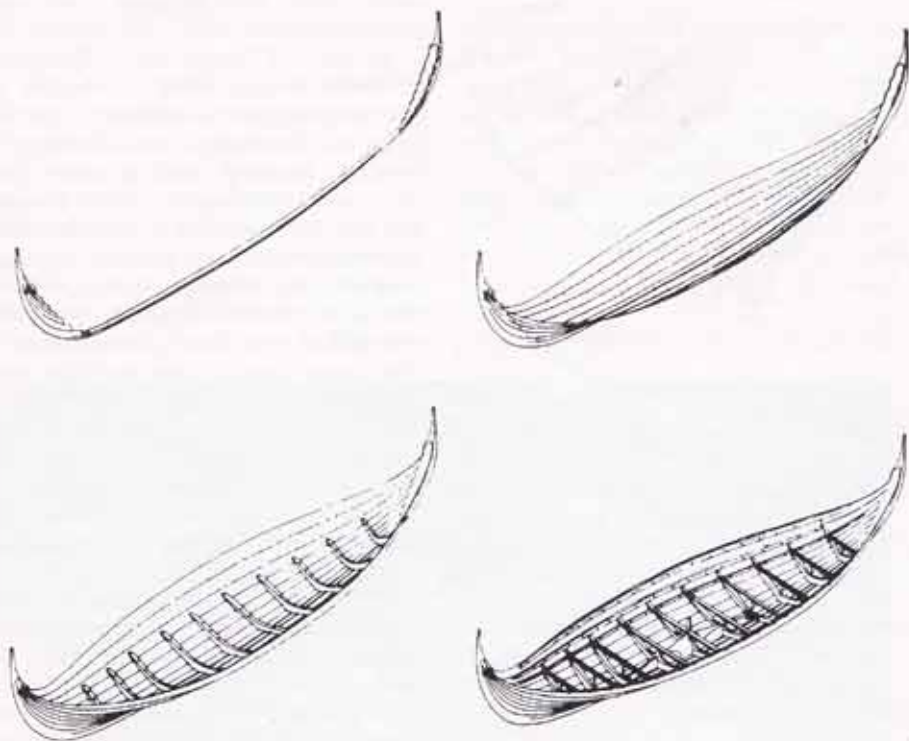
Why did they build the SEBBE ALS? In partial answer, the Guild responded, "While building the ship the following slogan was born: 'Work is a kind of pleasure'... Nothing is created by itself. However, by making a serious effort much can be achieved which at the same

time gives one pleasure and also develops oneself."

By way of concluding: The basis of these remarks and the quality of life they suggest is simple. It's the "Law of Paradox". By this law, in seeking meaning and pleasure (not necessarily speaking of making a living) the accomplishment of a difficult undertaking, involving less and less material, money, and perhaps tools, replaces the sophisticated route, (ease coupled with power, speed and "purchasability"). The great artistry and perhaps most profound pleasures are to be found in the act which most harmonizes with the forces of nature. This suggests that flexibility, lightness, the use of human energy and the hands as the basic tools are not simply moral means of crushing the spread of pollution, busying bored juveniles, cutting back on noise and the exhaustion of non-renewable supplies of metal or oil. They are elements in a way of life which afford profound pleasure and meaning. They comprise an actively lived *natural* philosophy rather than a passively urged *moral* philosophy. What's been keeping us from this timeless and inexhaustible stash of joy? And what shall we do about it? ★

IMME GRAM boasts the Viking interpretation of movement.





Shell Construction Sequence — Crumlin-Pedersen.

*I'm especially indebted to Arne Emil Christensen, Ole Crumlin-Pedersen, Sean McGrail, Ted Spiegel, the National Maritime Museum in Greenwich, England and the builders and crew of the SEBBE ALS.*

"We got the people moving"

-Carl Otto Larsen



Ted Spiegel