

II. Intangible Cultural Heritage Inventory

➤ **National Inventory**

There is no national inventory of intangible cultural heritage in the Republic of the Marshall Islands.

There is no non-governmental inventory of intangible cultural heritage in the Republic of the Marshall Islands.

However, there are some domains regarding intangible cultural heritage recognized and still practiced among people of Marshall Islands.

Pillar of the Land

1. **Canoe building** – this is one event that brings a whole community together even if building a canoe for one family. This was the only source of transportation back then. The canoe served two purposes; transporting people to and from one islet to another, or from one atoll to another, and was used for fishing out in the water as fish was the main source of protein for the local people.

There were three kinds of canoes that were built; *walap*, big sailing canoe for as many as 40 people for ocean voyages; *tibnel*, a small sailing canoe for 3-4 people for lagoon excursions, and *korkor*, a small paddling canoe

2. **Bwebwenato/ Inoñ -Marshallese Stories** – There is an old Marshallese saying, “pitokpeinbubuakjimma” which literally means using the arm of either grandmother or grandfather as pillow. Every evening after dinner, a mat would be laid out so one of the grandparents can start telling stories to the children. This was one way of sharing and passing down knowledge, as well keeping the family tie very strong. There was no television and no electricity, so there was no distraction that put the children anywhere else but with the family.

3. **Medicine** – Marshallese used most plants for medicine as there were no doctors. To figure out what plant to use for which ailment, divination is applied. During the workshop, a book on Marshallese medicinal plants was presented to the participants. The *uno* or medicine in this book is the most basic ones used by almost everyone especially for babies and toddlers. The more in depth ones are mostly for adults or more serious diseases that are affiliated with black magic.

Marshallese believed that evil spirits cause the following diseases, among others: headache, chest pains, coughing, and enchantment of the head. The *anjilik*, or evil spirit, cause disease by sailing by in a canoe and getting into people. To treat such conditions, the sorcerer launches a model canoe made of pandanus leaf while incanting. This patient is then supposed to see the *anjilik* sailing off to Eb, the other world. If that does not happen, then the *anjilik* has already taken the patient's soul.

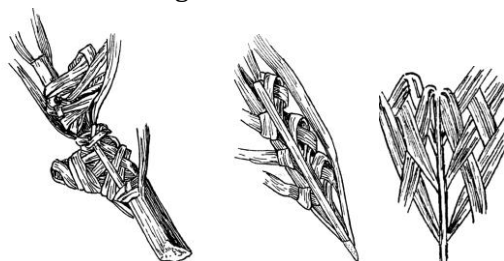
4. **Mo (Taboo)** – can be imposed legally or arbitrarily by the chief. It is urgent if a specific behavior is prohibited in certain areas; accordingly, these areas are placed under a kind of ban. Thus, for example, the path from the chief's hut to the chief's bathing spot (*jiarel*) on the lagoon beach, and the beach in the vicinity of the path, are taboo to subjects. In addition, there is a personal taboo by which all or specific classes of people are forbidden a certain activity. Food taboos are common, e.g., the coconut taboo when many nuts are needed for cutting copra. In this case, a palm frond is attached to a pole. The coconut taboo simultaneously protects against theft. There are also certain fishing areas that are taboo and reserved only for the chief. This was probably another way to prevent overfishing, and to this day these are considered marine-protected areas.

5. **Family and Society (Kinship)** – Kinship terms are based on mother right and others are considered artificial relationships such as:

- 1) Adoption (*kakajiriri*); very widespread. Newborn children were often adopted to protect them from incest. Adopted children become full members of the new family. The rescue of infants whom the mother intended to hurt is also considered adoption. Adoption can also be looked at as one way of securing and tightening the family ties. It is also said that a child doesn't belong to a family only but it belongs to a clan.

- 2) Friends (*jera*) – Because the parents, wife, and children of one friend are also considered the parents, wife, and children of the other friend, there exists a marriage prohibition between the children of friends.
 - 3) the relationship of a foster mother (*rikatit*), i.e., wet nurse, of a chief's child, to the child. The woman is considered the mother to the child.
 - 4) The relationship of a person healed of serious illness to the physician, male or female, who is then considered the patient's father or mother.
6. **Sorcery (*anijnij*)** – The *boē* of the Central Carolines is called in the Marshall Islands *bubu*. The decision is made according to whether or not the tip projects, and according to the number that is finally uttered." *Torbailin*, is a type of *bubu* that is applied.

The people assemble, even women are admitted, but they have to sit still; after this, "*emanetatakora*" is shouted. It is forbidden for the women to move! Then a young coconut leaf from a sacred place is torn into strips and three of them are knotted. The form is identical to the Carolinian oracles. Here the knots are merely bulkier and larger.



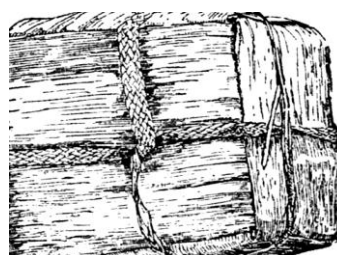
During the knotting process, the man sings, wade in the water, step into the water with your feet, anoint yourself [with oil], anoint your skin [with oil], this is the rule for a secure livelihood." Each strip is then pulled apart on the left shoulder so that the knots tighten. During this the question is posed: Are we permitted to sail, go to war, etc. The strip, which has eight to fifteen knots, is then folded together in the middle, and working out from the center, the knots of each leg are counted of as high as four. Counting is done with special words: for north, *eangoe* equals one, re; two is lo, three, *tol*; for south, *engerake* equals one, re; two is lo, and three is *tol*.

When conjuring a storm, *jeranlang*, no double figures. Fronds suspended on the mast, on the beach, and incantation recited .

Thus it is a divination method identical, or very similar, to that used in the Carolines, particularly upon the commencement of an ocean voyage, when identifying crimes or enemies, illness, etc.

7. *Play and Sports:*

- 1) *Balls (anirip)* are made of wide strips of pandanus leaves wrapped into a cube and are secured with a plaited band. Players (children or young people) stand in a circle and knock the ball with their heels to another player; while doing so, the ball is not allowed to touch the ground.



- 2) *Pinwheels (loriliang; lorirrean, lingangenge, lingangenje, lorideang)* for children consist of a cross plaited together out of two strips of palm leaf which spins in the wind on a handle made of thin palm leaf midrib or similar material.
- 3) *Nighttime Wrestling (ire)*. To challenge, the contestant clicks his tongue in front of the opponent's house; the opponent accepts the challenge by clicking his tongue. Inside the dark house the two attempt to sense the each other's movements with their knees. Each endeavors to bind the other hand and foot so that in this condition he will be ridiculed the next day.
- 4) *Bird Fights (keir)* using roosters were common. Later, plovers (*kotkot*) were made to fight each other in pits (*nit in kotkot*). However, passion for the sport frequently led to quarrels so that enthusiasm waned and no more bird fights were held.
- 5) *Island Game (bokerran)*. Children dig holes in the beach sand, send one child away, and hide a piece of charcoal in one of the holes. The returnee has to guess which holds the charcoal.
- 6) *Archery*. Bows (*libbon*) and arrows (*kajeor*) are not used as weapons, but rather, merely as sports equipment on playgrounds (*umar, jikinbuilbuil*).

The target (*mejenkajjik*) is usually an elevated spot at the end of the playground.

- 7) Sailing Toy Canoes. Sailing toy canoes (*builbuil, riwutwut*) is organized by children and adults. The toy canoes (*riwut*) consist of a hull of soft driftwood with the cross-section of the large canoes⁶, and a curved thin rod, which with the aid of two slanting sticks secures the outrigger boat. The raked mast with forked tip is situated on the center of the outrigger boom. The mast is attached with four poles to the stem, across the boat and onto the lee side of the hull. It supports a triangular sail of pandanus leaves.
- 8) Kites (*limakák*) consist of a cross tied together out of two palm leaf midribs, onto which is bound a simple, rhomboidal piece of plaited work made out of strips of pandanus leaf. The projecting ends of the crosspiece bear tufts of fiber. Tufts of fiber are also attached to the tail. Kite flying is only a children's game.

8. Dances (*Eb*). Dances are preferably performed in the evening and on moonlit nights. Prior to that, the oiled male dancers make their appearance at about 4 p.m., and at about 5 p.m., the female dancers. The following kinds of dances are differentiated:

- 1) *Seated dances* (*ebjijett*). One man, usually a chief, sits in the center of a circle formed by women. When a chief dances, only noblewomen sit around him. The male dancer sits there, cross-legged and fully adorned, and writhes.
He twists his upper body, shakes his outstretched arms, and rolls his eyes. The women and girls accompany him with singing and a few of them play drums. Sometimes the noble dancer—or even three of them—present “some sort of pantomime of a usually war-related event amidst horrible rolling of the eyes and grimacing” while men and kneeling women perform the dance movements around him. The women can also seat themselves on the ground in two rows with a mat in between them and, accompanied by percussion sticks, dance to a song in the same manner. A seated dance is a dramatic performance. During it, ten men, and opposite them, ten women, formed a circle in which a chief sat back-to-back with a young girl. The dance movements were made by all. Two drums and two shell trumpets blown by men standing outside the circle served as accompaniment to the singing. When the singers in the circle were silent,

the two lead dancers in the center sang, and finally depicted the girl's death and the man's mourning.

- 2) *Dardak* dance (*tardok*, to advance when dancing) performed standing by two men or two women. The two dancers dance opposite each other, and run or jump to and fro, gesticulating. During this the hands are shaken and the eyes rolled. Sometimes the pair of dancers alternate or yet a third one joins them. The dance ceases with a scream. Apparently *dardakis* a portrayal of demons.
- 3) Round dances (*buijbuij*, to kick around) performed by one or several groups of male and female dancers. In the case of the more ancient style of *budjebudj*, a chorus of sitting women sings while two rows of young men walk towards each other in single file. The dancers have their arms raised and make their hands tremble. The two rows step up to each other and make a turn so that now the dancers stand in a double line. Now they begin to sing songs while the women beat drums and also perform standing dance movements. During the *budjebudj*, percussion sticks are also used by women. The dance in which no men participate is called *jimókmok*. When the women's dance movements have become a swaying of the hips and a turning and bowing of the head (*jebolul*), or when the dancers, in rows of men and women, slowly advance and fall back "rocking the upper body back and forth and shifting from one leg to the other," it is said this traces back to a type of round dance introduced by the missionaries.
- 4) Round dance with sticks (*gjorrang*, *jíku*, *káren*, *karan*), performed by men with dance sticks or dance spears. The men take mincing steps in a row, move the sticks and spears as they do so, and spin themselves around from time to time. Frequently several rows of men also weave in and out as in the round dances.
- 5) War dances, likewise performed by men with spears, are not sharply distinct from the round dances with sticks. First "they form figures⁵ and stage sham battles" until the dancers fall back and draw up in a semicircle opposite the drumming women. Then the chiefs jump into the center one after another. Waving spears and leaping with contorted faces, they perform fighting motions.
- 6) Women's lascivious dances have been very popular, but were seldom performed in the presence of Europeans. During one dance, the girls wore

only one mat in the *lagebastyle*, and soon let it fall of. Then followed the movement called *bélling*, which consisted of the contraction and accompanying vibrating motion of the abdomen, and a shaking of the buttocks. The movement of the man during coitus was also imitated.

9. ***Tattooing (eo)*** – tattooing primarily serves to beautify the body and is associated only secondarily with religious customs. It is considered a type of confirmation of sexual maturity. It is also said to prevent or conceal wrinkles in an old age. Among men it covers the chest, shoulders, back arms, buttocks and thighs, and only among chiefs, the face as well. Among women it extends to the shoulders and arms, and occasionally also to the thighs. Among the wives of chiefs, however, it also occurs on the fingers and the backs of the hands.

10. ***Foods and Their Preparation.***

Pandanus Fruit. After the keys have been removed from the spadix, with or without the aid of a stick, pandanus fruit are frequently chewed without further preparation. In that case, the fibrous pointed part is first bitten off and the juice expressed with the teeth. This greatly wears down the incisors. Those who shrink from the strain of extraction by chewing or who are no longer capable of it, consume raw sparkling pandanus juice. It is prepared by beating the pandanus keys with a triangular stone. The juice is expressed “by pressing against iron.” A Cassis shell was used for this in earlier times. Sparkling pandanus juice is also considered food for convalescents. Another method is order to then scrape out the juice. A special utensil with a Cassis shell is used for this. Usually only one hand is used for scraping. Only when there is a big rush, during the preparation of preserves, for example, is scraping done “Gilbertese style” with both hands. The pandanus keys are scraped off on the sharp edge of the Cassie shell vessel in such a way that the juice collects inside. During the preparation of preserves, however, the juice is permitted to flow out into a pit lined with pandanus leaf mats. By standing a long time, the juice turns into a kind of pulp that is likewise eaten, particularly when coconut water has first been poured over it.

Pandanus Preserves. In the preparation of pandanus preserves, the juice is concentrated in the sun or over a fire. The early steps are identical to those in the case of juice extraction by the usual small-scale method. If people want to prepare preserves in large quantities, however they frequently work under a special protective roof, and in that case can heat coral slabs with a wood fire in a pit in the ground that is two to four meters in diameter. The

hole is filled in with alternating layers of pandanus keys and leaves and is covered with sand and stones. A *Tridacna* shell for the juice of the cooking fruit can be placed in the bottom of the pit. The oven is opened twelve hours later, or only on the second day. After men have scraped the keys, women then spread the thick juice with a small stick onto a board on which it is left to dry in the sun. In lieu of this, the grate is also used for drying. It is long and narrow and built as high as two meters above the ground. Drying sheds two to four meters high and consisting of one several leaf-covered grates stacked one above the other, with a narrow roof, also occur. Banana or breadfruit leaves are spread out on the stick grating, and the pandanus juice is dried on them. The open fire below is fed with wood, palm leafstalks, and pressed-out pandanus keys.

The pandanus pulp is again brought to a boil and is finally dried in the sun with frequent turning. The flat cakes of pandanus pulp are rolled up around each other on a piece of palm leaf, which is later removed, until the desired size of the preserve is attained. This varies in length from twenty centimeters to three meters, with a diameter of forty centimeters. These rolls are packed in strips of pandanus leaf and spirally wound with sennit. In this manner the preserve is protected from ants, water, and other factors. The shelf life of the preserves is not known for certain, although they do last for at least a year. Then it is used, a piece of the preserve is cut off, soaked, and eaten alone or as an ingredient in other dishes.

Breadfruit. Breadfruits are eaten only if they have not fallen from the tree as overripe windfalls as people want to avoid falling from trees and getting hurt, like the fruit. The seeds are eaten “like chestnuts,” but are not roasted on purpose. The flesh of the fruit is eaten only after the peel has been removed with a *Cypraea* shell and only after the fruit has been roasted on glowing ashes or has been prepared in a dirt-covered earth oven.

Preserved Breadfruit. Preserved breadfruit is made like pandanus preserves, but without using a scraper. It keeps for a significantly shorter period of time than do pandanus preserves. Soaked in water, it is eaten as *jinnab*. A second method of preservation is the preparation of fermented paste. For this purpose, breadfruits which are not quite ripe are peeled and cut into pieces half the size of a hand. A special net is filled with them and is immersed for one night in saltwater in the lagoon at a depth of approximately three meters. This can also be done using baskets. In the morning the pieces of breadfruit are placed on spread-out coconut leaves, and are covered and left in this condition for twenty-four hours. Then, or only

after three days, the soft pieces are crushed by hand, or occasionally with a *Tridacna* pounder, or are beaten with clubs of *Calophyllum* or *Pemphis* wood or the *Tridacna* beaters used for preparing paste. The pulp is poured into a hole lined with breadfruit leaves. The pulp is again thoroughly kneaded eight days later, and then the leaves in the pit are changed each week. Once a month the contents of the food fermentation pit have to be kneaded thoroughly. Preserved breadfruit keeps for five to six months, even two years if it is properly fermented. The fermented paste removed from the pit as needed each day is blended with coconut cream and is eaten without additional ingredients, or it is mixed with arrowroot flour, etc. It is never eaten raw.

On Mejit (one of the atolls in the Marshalls), particularly large amounts of breadfruit preserves are made for export. Large quantities of preserves are exported from these islands to islands with less breadfruit, such as Likiep, Jaluit, and Utrik. Just as there are various types of pandanus fruits, breadfruit preserve of various flavors are also recognized which have their own special names.

Arrowroot. The harvested tubers are brought to the lagoon beach in palm leaf baskets and are cleaned there in a loosely-plaited fiber bag by washing and walking on them. Then they are pulverized; individually to a reddish pulp on rough reef stones with the aid of a small, rectangular block of coral over a large mat or big leaves. Then the pulp is poured into a sieve that consists of a wooden frame set up on two carrying poles with a bottom plaited like a sieve out of sennit string. The bottom is also covered with prop roots. The sieve is placed over a pit about half a meter deep and one to two meters in diameter that is lined with leaves and a dense pandanus leaf mat. Or, two men lift the sieve by the carrying poles. Seawater is then carefully poured over the pulp so that the filtered starch drips on the mat located below. The fibrous sheath is placed in the sieve as an actual filter cloth. Sea water is poured on it, and it is kneaded by hand. Two hours later the filtering is repeated. After the water has dripped into a hole via leaves or through a fibrous sheath, the lumps of starch flour are placed in a shady spot. Two days later they are pounded again and are dried in the sun for two to three days like the pandanus or breadfruit preserves. This flour is stored wrapped in pandanus leaves or in plaited sacks sewn closed at the top with sennit cross-stitching. About seven baskets of arrow root tubers yield one bag of flour. Arrowroot flour is traded in this form.

Bananas. In order to be storable, bananas are split lengthwise into halves, dried in the sun, and packed in small rolls of leaves.

Coconuts. The water and the soft meat of young drinking nuts are consumed. To more easily free the meat from the shell, in former times the thumbnail of the right hand was permitted to grow long. Thus, the meat could be removed from the shell with a single twist of the thumb. The firm meat of the ripe copra nut is consumed primarily, and less frequently, the coconut water. The sprout which is present instead of the water is eaten raw out of the even older, germinating nut. The tough of meat of the waini is only infrequently eaten raw. The coconut meat is grated into fine shavings on it by means of a twisting motion while the preparer sits on the implement's board. Grating is men's work. The grated is eaten mixed with other foods or is pressed out to produce coconut cream, which is not to be confused with coconut water. Coconut oil is obtained by pressing the coconut in an oil press or by permitting it to ooze out of copra set out in the sun. Coconut oil is used more for anointing the body than for eating.

Taro. Taro is made only into the dish, which is called "brain" on account of its gelatinous appearance. To make it, taro is peeled, cooked, and mashed with the pounder that is also used for breadfruit. Then it is mixed with grated coconut.

Fish. Fish are first gutted; the liver and roe in particular are removed. Then they are prepared in the following ways:

- 1) Large fish are cut into pieces which are wrapped in leaves and cooked in a covered earth oven.
- 2) The fish is roasted uncovered on hot stones. Immediately after the catch, a few fish are also eaten half-cooked as "kuttak."
- 3) Small, sardine-like fish are not gutted, but rather, are roasted whole on little sticks on flowing ashes
- 4) Fish are preserved by smoking or are dried in the sun. salting of fish only became known in European times.

Occasionally, a few varieties of fish, for example, bonito, sardines, and flying fish, are also eaten raw. A special dish is prepared from the fresh red roe of the *jebelo* fish.

Porpoises. Porpoises are prepared like large fish. Because of the fat, the islanders even eat long-dead porpoises or those which have been floating at sea. The same is true for sperm whales, in which case the islanders go after those which have been accidentally killed, for they cannot catch live ones.

Turtles. Turtles are first presented to the chief, who selects the choicest morsels. The black fat on the belly between the thighs; and a part of the intestine is considered especially choice. Because the parts of the turtle are considered the mats and food of a legendary person only seafarers or those well-versed in legends are permitted to carve it. The intestines and layers of fat are wrapped in leaves and are placed with the meat in the ground over, which is covered with dirt and the plastron. The meat remains in the oven overnight. No one is allowed to eat any raw fruit before the turtle is eaten, otherwise the teeth are said to become brittle.

Crabs. Crabs, coconut crabs, lobsters, etc., are placed alive on a glowing fire. Occasionally they are also prepared in the ground oven.

Recipes. In the preparation of dishes, the main ingredients are: coconut water, coconut cream, grated coconut, coconut toddy, pandanus juice or pulp, pandanus preserves, fermented breadfruit, preserved breadfruit, arrowroot flour, taro, and fish.

Food for Chiefs. Because chiefs do not supply their own food, their subjects are obliged to cultivate plants, prepare preserves, and fish for them. Even when they have worked for themselves, subjects are required to offer the choicest pieces to the chief. Reserved for him are particular varieties of fish, the head and belly of large fish, turtles, the breadfruit varieties *bataktak* and *bukeral*, particularly sweet pandanus fruit, particularly large coconuts, and the outer bananas in a bunch.

11. Death

Burial

In former times burial was done by submerging the corpse in the sea, or by interring it in a crouched position. Since the introduction of Christianity, burial in the ground in a supine position has become universal. Nowadays wooden coffins lined with cloth and mats are used.

Commoners were formerly wrapped in mats and taken out to sea in a canoe. In earlier times the bundled corpses were equipped with a small mast and sail. At sea they were thrown into the water unweighted, and the canoe

sailed back to the island. No one on board was allowed to look back at the corpse. The corpses of prisoners of war who were drowned in the lagoon were likewise taken out to sea and left to drift (Erdland: *kabalok*), but were not wrapped in mats. Slain enemies were also dismembered, covered with leaves, and cremated.

Chiefs and nobility in former times were also wrapped in mats and taken out to sea, although this was only done on the third day after death. Immediately after death, the corpse was prepared against excessive decomposition. For this purpose the intestines were emptied, the anus was stopped with a plug of soft wood, and the nose and ears plugged up with copal. When the corpses of chiefs were lowered into the sea, stones were wrapped in the mats at head and foot so they could be submerged. In the case of nobility and chiefs and their wives, interment on land also occurred; it was denied commoners. The deceased was likewise first prepared and adorned. Then the wake was held for two days and two nights. During it, the deceased's favorite songs were sung and incantations recited. Some chiefs were left lying for days until they decomposed so that many people had the opportunity to see them, and so that the inhabitants of other islands could also pay their respects. On the third day or later, the corpse was borne to the burial place and was placed beside the grave, around which flowers and perfumes were strewn. Each relative of the deceased had to bring two mats, which were distributed among the mourners. In more recent times it became customary for close relatives to bring six yards of cotton cloth and for more distant kin to bring three yards.

First a dance was performed which was customary only for such an occasion. Women beat drums and sang war songs to encourage the soul for its impending journey. Then the face of the deceased was covered with a small mat and the corpse was wrapped in two coarse mats and bound up. Next the deceased was carried around the grave six times. Then the corpse was placed in the grave with the head pointing north, for this position protects against the evil *Lajbuineamuen* who lives in the north.

The depth of the grave depends upon the rank and sex of the deceased. For chiefs, it is knee-deep, for petty chiefs, up to the hips, and for women, up to the neck. That is in connection with the varying danger of the spirits of the dead. After the corpse is placed in the grave, a relative of the deceased asked for an "attendant" (*wura*), whereupon an adult was seized and buried alongside the chief, either dead or alive. In lieu of an attendant, a canoe could even be destroyed and placed in the grave. Later, when commoners were

also permitted to be buried on land, they received only stones as funerary gifts. The dead chief was committed to the grave with a baste skirt, two clothing mats, and jewelry. On Majuro, whale tooth pendants, shells for necklaces, *Conus* bracelets (also in children's graves) and circular *Trochus* bracelets (Leipzig Museum) were found in graves. The grave is covered with stones with a layer of sand over them the mortuary and ceremony experts (Erdland: *rubik*), who also conducted the interment. Burial mounds are rather low. Frequently they were thrown up alongside the grave itself so the bones could not be found. The burial mound of Chief Ujilan on Arno the largest. It is one meter high, and eight meters in a square. According to its location, it corresponds exactly to the chief's former hut.

Occasionally in earlier times a hut was erected over chiefs' graves. The points of narrow spits of reef or concealed places beneath coconut palms which are of the beaten track are usually sought after as grave sites. In the Ratak Group, the grave was surrounded with a low stone wall consisting of slabs of coral limestone set on edge, or in lieu of rock, small sticks stuck in the ground (which was done in Ralik also). In the Ralik Group, however, the grave was marked by a paddle stuck into the ground. Usually there was only one paddle at the head, but sometimes there was also one at the foot. In 1898 at Enuebing, low graves were found in the shape of a coffin lid heaped up out of coral limestone; a paddle slanted up out of both ends. The graves that Kubary saw on Ebon also looked like this. Such graves were found on Ronglab in 1910. Some of them were also bordered at the base with a row of larger stones. Only rarely do graves still receive paddles nowadays. According to Jeschke, only seafarers get paddles on their graves. A palm frond marks the grave site as off limits. On Maloelap in 1910, each of the two halves of the island had its own cemetery. In former times, empty graves were also laid out for travelers. Those absent were mourned, and something from every meal was set aside for them.

Arm and leg bones of the dead were worked into needles used for sewing mats and thatching roofs.

Children, who occasionally in times of emergency were killed by being buried in the sand, remained buried on land. Implanted stick as a grave marker for them, an implanted stick with incised rings.

Pillar of the Sea

1. Eoñod - Traditional Fishing Methods.

- 1) **Urok**- catching the kuro and lejejpjep fish during the day from a canoe using bait: *ããôor môr*, consisting of crab tails, etc. a stone near the hood pulls it to the bottom, where the sinker releases itself.
- 2) **Iladak**- In this method, the line, attached to the canoe, is jerked by hand and the hook dances across the water. The stronger the wind, the longer the line played out. To catch albacore the hood is made to dance close to the canoe. To the quarry, the hook looks like flying fish. For that reason, a fresh strip of pandanus leaf is tied around the hook in such a way that on each side and end, approximately sixteen centimeters long protrudes like a wing.
- 3) **Bobo** – catching flying fish at night on the lee side of the atoll. The canoe sails or paddles back and forth along the length of the land on the open sea. A coconut torch lures the fish. When they leap, they are caught by a man with a hand net: fishnet at the bow or, if they leap against the sail, they are gathered there. Season December through May.
- 4) Catching flying fish with a strip of shell consisting of coconut shell pointed at both ends. The fishing tackle is attached without bait to a short line and dances on the surface behind the sailing canoe with an empty coconut shell for a float. In this case, the lure gets stuck crosswise in the fish's mouth. As in *bobofishing*, they sail up and down that shore, but in the daytime. During this process, special incantations are used.
- 5) Catching the kiriej fish with the net-like sheath of the young coconut leaf (*inbil*), is “rolled up into a circle and lowered into the water on a fishing rod.” The fish bites into it and is pulled up (*dibdak*).
- 6) **Böbbö**, spearing fish during the day on the outer reef, also on the shallow lagoon beach, with the fish spear (*mári*). The impaled fish are strung on cords through the mouth and gills.
- 7) **Kabwil**, killing a certain variety of fish with hoop iron or a machete at ebb tide on the reef. Only at night, as the fish stay still when a torch approaches.

- 8) ***Kaweet***, catching octopus in holes in the reef. Women feel around inside for it with a stick and pull out the octopus.
- 9) Surrounding bonito on the open sea with canoes which drive the fish into the lagoon and into the palm leaf chaser, where they are speared. A chief always initiates this process. The women, who previously were not allowed to be present, nowadays help with stringing the fish.
- 10) Catching dorado (yellowtail) with a sennit rope floating between two canoes. The school of dorado is surrounded with the line and is driven ashore; the fish do not swim under the rope, but only occasionally leap over it. The fish are either removed from the shallow water with hand nets, or are dragged further onto

Pillar of the Sky

1. Science

Navigation - The knowledge of stars, weather, and sea conditions, and the capacity for making and interpreting sea charts, is reserved only for certain people who usually are members of the *leadakdak* class, or who could even be nobles. Such people are called *rimeo*, master navigators. There are also women among them. Each *rimeo* keeps his teachings secret from the uninitiated, and imparts them only to his favorite children or other people who have special talent for navigation. So raised navigation schools, each of which has its own teachings which the others do not know. The deceased men Lajndjin and Ladjedji, whose son, Loane, lived on Jaluit, and were great *rimeo*. The woman Libe was formerly teacher in the Ebon school. A particularly large school existed on Namrik. It was founded by the *ru* clan of Kwajalein. The clan descended from the *rimeo* Legemugij. He adopted Litemelu, who learned all the sea navigation marks from him. The school is named *apdjebeo an Litemelu* after her..

To all appearances, Lagediak was also among the *rimeo*.

Rimeo of more recent times include:

- Arenini on Ronglab
- Burido or Labarito (navigator of Muridjil of Maloelap)
- Deli on Arno
- Laumanuan (navigator of Kabua and Loiak)
- Larinine

- Lanenam on Ailinglaplap (son of the *iroj*Lamejirik, but only of the *burak*class)
- Launa, Lanenam's uncle on Kwajalein
- Lowane, Lekoujabue, Lalur, and Loien in the northern Ralik atolls

The chiefs Nelu and Loeak on Jaluit had been pupils of a *rimedo*, while Kabua possessed only meager knowledge. When a *kadjur* approaches a *rimedo* and wants to be instructed, he says "*ledokdjirikmour*" ("Teach me something," literally "Give some life"), whereupon the *rimedo* answers, "If you give little, I give you little; if you give me much, I give you much."

Apprenticeship lasts one to two months, sometimes it lasts two to six months. Instruction commences with an explanation of the sea conditions (swells, choppy seas, etc.) between the islands and in the reading of sea charts. Furthermore, instruction includes an introduction to the astronomy known to the *rimedo* alone, meteorology, and the knowledge of the "sea marks" of the individual atolls and the mnemonic devices that go with them. At the conclusion, a captain's trial voyage (*rubrubjogur*) of the pupil takes place.

2. The Knowledge of Navigators

Geographical Knowledge

Atolls (*ailin*) are precisely distinguished from their individual islands (*ene*). The western side of an atoll is considered the bottom, and the eastern side, the top. The sea between the Ralik and Ratak archipelagoes is designated *lollelablab*, and that between any two islands, *lomedto*, *lukanlomedto*, *jobejanmedto*). For voyages between various atolls, in addition to the general terms *mödo en jela den* (voyage of arrival knowledge) and *mödoerikrik* (small voyage).

There are also the following special terms:

- *meto en al* (sun voyage) for the voyage from Jaluit to Ailinglaplap
- *metoanbuer* (tortoiseshell voyage) for the voyage from Jaluit to Ebon
- *meto an aluj* (voyage of looking) for the voyage from Ebon to Namrik
- *mödo ion weṛ* (coral reef voyage) for the voyage from Djalut to Namrik
- *meto an lab* (big voyage) for the voyage from Rongrik to Kwajalein.

Outside of Ralik-Ratak, the following islands are known: Mokil, Pingelap, Ngatik, Kusae (Môt), Ponape, Nauru, Banaba (Baneb), and the Gilbert Islands (Bit). Regular trade with these islands does not occur. However, there are

reports of earlier wars against Ngatik and Mokil, and drift voyaging in particular contributed to knowledge of the islands. It was heard that on a few islands

there lived castaways from “Repith-Urur,” i.e., *ri-Bituror* (“Gilbert Islanders, whom one kills”). The fact that the drinking of palm syrup and palm wine first became known through the Gilbertese, and the presence of various words from their language (*jarir, jigu, jeib*) point to more frequent, although usually involuntary, acquaintance. Through castaways from Oleai, Yap, Lamutrik, and through the canoes of Ralik-Ratak Islanders driven off course to Kusae, Guam, Faraulip, etc., knowledge has been further increased in individual cases. It is suspect that the concept of Eb, the island of spirits in the west, is probably based upon some sort of reference to Yap.

Meteorology

Weather (*lan*) is observed in the evening and one hour before sunrise (*kadujo*; Ratak: *kadu*). It is assumed that individual stars block the east when they are low on the horizon (*turinlan*; Ratak: *turilan*). Thus the trade winds can only blow when the star stands higher, until a new star again blocks the east. Each violent storm is accordingly said to be followed by a relatively calm

period. The occurrence of storms, for example, those occurring when the northeast trade winds change over to the southwest monsoon, is connected with specific stars. Individual stars are also said to bring good wind. The phases of the moon are also used for weather prediction. Thus, the waxing moon, the full moon, and also a few days of the waning moon bring good weather. The new moon, on the other hand, brings dark cloudiness. Cloud formation is also carefully observed and insignificance determined according to mnemonic devices.

- | | |
|------------------------------|---|
| a) <i>Djokola, jokola</i> | NE trade wind |
| b) <i>Kodu</i> | E wind |
| c) <i>koduian in al</i> | ENE wind |
| d) <i>koduirök in al</i> | ESE wind |
| e) <i>dildilkaang</i> | NNE by N wind; <i>dildil</i> , cat’s paw sea) |
| f) <i>lemmarak</i> | SE by SSE wind |
| g) <i>itokkabilinglallab</i> | W wind |
| h) <i>kötak/ kétak</i> | SW wind/SE wind, trade wind |
| i) <i>kedo</i> | S wind |
| j) <i>an in lur</i> | wind which calm will follow |

k) <i>an doklik</i>	suddenly shifting wind
l) <i>an in ion nil</i>	light, rocking wind at sea
m) <i>an jebualil</i>	intermittent wind in the lee of land
n) <i>an jenjen in ködo</i>	wind preceding a stif breeze
o) <i>an injitöbbuenmar, an juwiwi,</i>	
p) <i>an kijek, an merik, an rebakbak</i>	squalls of various kinds
q) <i>lirado</i>	violent squall
r) <i>kiur</i>	stif breeze
s) <i>ködo en agoblele</i>	light, variable breeze
t) <i>lan in lairbal</i>	rain with slight breeze
u) <i>nat</i>	storm
v) <i>nat in arlagarejrej</i>	violent storm at sea
w) <i>naterikimanjabro</i>	storm before the Pleiades rise
x) <i>rabej</i>	violent storms when the Pleiades set
y) <i>aire</i>	whirlwind, waterspout
z) <i>lan</i>	hurricane

Astronomy

A list of sixty-six star names has been published by Erdland (1914:78–80). All big stars are siblings, and descend from the woman Lidalanger (Liktanur). The eldest son, Antares, and the youngest son, the Pleiades, are such bitter enemies that the one rises only when the other sets. It is believed that the stars which set in the west return to the east in a canoe by way of a reef which closes of the south. The appearance (*aibuinmij*) of a comet (*ijulogan*, tailed star) is supposed to presage the death of a paramount chief. The following, among others, are important in practical navigation:

- limanman* Polaris as constant indication of north; towards the south, visible up to 30 miles south of Jaluit.
- auinwolönlan* Zeta Sagittarii and Beta Librae in summertime divide the sky into east and west; the line drawn through the two stars meets Polaris in the north and Hydra in the south; when the north is clouded over, it is a means of determining the direction north.
- limanman en an ninjib* Gamma Cepheus guide star for the voyage from Kwajalein to Rongrik.
- worwatoen* Alpha Canum Venaticorum guide star for the voyage from Jaluit to Ailinglaplap, named after the reef Wätoen in the Aerok Passage of Ailinglaplap.
- boa en an jokdak* Grus of which Gamma Grus is the guide star for the

voyage from Ailinglaplap to Jaluit.

- f) *bub* Southern Cross guide stars for the voyage from Djalut to Ebon
- g) *lik in boame* Alpha Pavonis guide star for the voyage from Ailinglaplap to Jaluit; during the voyage one sees the star above the western point of Jaluit Atoll
- h) *jemenuwe* Ursa Minor (Gamma, Beta, 5 Ursae Minoris) of which Alpha and Beta Ursae Minoris are guide stars for the voyage from Kwajalein to Ailinginae.
- i) *jabrothe* Pleiades indicate storm at the beginning of June if they rise shortly before daybreak. In July if they rise in the east at about 4 a.m., they bring favorable wind. Under the same conditions, Antares (Temur) brings favorable wind for the duration of the trade winds; *medjilep* (*mejeleb*, star of Orion?) brings good wind in February until March; and *tidada* (*jedada*, Gamma, Zeta, and Pi Aquarii) brings favorable wind in February.

To reach another atoll, the course is fixed from a specified point of the atoll of departure and maintained according to the guide star. Because of the star's motion from east to west, another guide star is sometimes taken after a lengthy period of travel. Women are not allowed to cover their faces at sea, for otherwise the stars would not shine.

Observation of the Sea

The most important thing that a *rimed* has to learn is that which concerns the swells, "knots," the "*nit in kot*," defected swells, currents, and sighting distances. These concepts are recorded in the stick charts and are explained under that heading. The most important types of waves (no) are:

- a) *nôroul* small swell wave
- b) *jibigra* (Ratak: *nô jibaba*) wave which is caused by two opposing waves.
- c) *djibekera* choppiness
- d) *noannedjindjomileng* small wave
- e) *nô jeb* heavy swell
- f) *dildil* cat's paw wave
- g) *nôburo* two parallel colliding breakers
- h) *no an bal* breaker
- I) *ibueb* large breaker *mool* small breaker, calm surf
- j) *lijjino* heavy surf
- k) *mirmir/lijemirmir* surf

Of additional importance to the *rimedois* the observation of low tide (*baat*) and high tide (*ibuij, ,ebij*) and their effects upon the current near the atolls and the serviceability of passages. During training, special emphasis is also placed on the ability to perceive land or reefs at night by the reflections in the ocean water.

Sea Marks

For orientation at sea, *rimedob* become familiar with details of the flight of birds fishing at sea, e.g., how far out the birds fly, and which direction they follow in the evening. Schools of fish, which usually appear in certain places, also serve as indications for seafarers. Finally, drifting objects are also considered signs of the proximity of land and its location. These sea marks are combined with other characteristics of the islands and with the tradition of spirits (*akejab*) who reside on certain islands or sections of islands and who have sea marks for “children.” There are special mnemonics for better learning sea marks and characteristics of islands. This is a published detailed list of the sea marks and related mnemonic sayings of the Ralik Group.

Compass Rose and Day’s Run

The cardinal directions are usually indicated by means of the names of the winds and swells. In addition to them, there are the following designations:

- | | |
|-------------------------------------|-----------|
| a) <i>rear</i> | East |
| b) <i>rak</i> | South |
| c) <i>kabílin-irík; kabilingrek</i> | Southwest |
| d) <i>kabíling</i> | West |
| e) <i>ean</i> | North |

The following belong to the cardinal directions:

- to East: the original man Lokomran (Barran)
- to South: the original man Lorok (Leoirok) and a large reef
- to West: the original man Irojrilik or the god La-Wulleb
- to North: the original man Lálíkiän or Labuineamuen and aswamp.

Distance measurements at sea do not exist, yet in the vicinity of land, reckoning is done with sighting distances, and on the open sea according to the day’s runs, which are called *mödo*.

Navigators' Additional [Ancillary?] Knowledge

Rimedo are the actual preservers of tradition and the people most knowledgeable about the secular and religious myths. Moreover, *rimedo* have to master a few types of sorcery which are necessary at sea, for instance, the charming of the eastern current (*jelaatak*). For voyages to the northern atolls (Rongrik) they have to use substitutes for several words which are prohibited on these journeys, and they have to encourage the people in their canoe to do likewise. In general, at sea it is forbidden to relate legends, to converse loudly, or to use the substitutes for several words which are prohibited on these journeys, and they have to encourage the people in their canoe to do likewise.

In general, at sea it is forbidden to relate legends, to converse loudly, or to use the ordinary words for food (*kijor mane*).

Stick Charts

Stick charts (*meto*) are lashed together out of thin straight and curved palm leaf midribs. Small white marine snail shells (*Cypraea* or *Melampus*) are tied onto them to indicate the islands. Stick charts do not indicate the exact geographical location of the islands, but rather, are supposed to illustrate the sea conditions between islands, above all the swell conditions, in addition to other things important to the course.

A standardized system of stick charts does not exist, and one school does not know the teachings of another. Thus, a stick chart can only be correctly explained by the person who made it, for whom its features have special significance. Another person, who may otherwise be a good seaman but who studied in a different school, cannot understand it without additional information. Yet despite individual differences, the charts are based on common concepts and principles of form.

Stick charts are based on the following concepts:

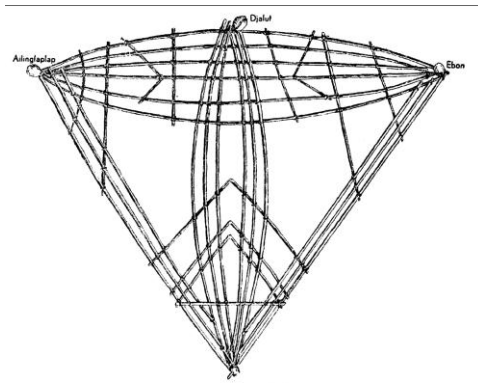


Fig. 65. Special chart.
Hamburg specimen #395:10. One-eighth actual size.

1. The swell (*noun rear*, *drilep*, *rileb*=“backbone”; *no in rear*) coming out of the east (*rear*) or ortheast, as the predominant and strongest one, always clearly noticeable at sea. Because the eastern swell is caused by the northeast trade wind, “east” does not mean magnetic east, but rather, the direction whence the swell comes.
2. The swell (*kaelep*; *kalepdakrilik*, *galipdakrilik*, *kalep*) coming out of the west (*kabiling*) or southwest, considerably weaker, always discernible only by experienced navigators.
3. The swell (*bungdokerik*; *bung dókrák*) coming out of the south (*rak*) or ke southeast; near the southern islands, almost as strong as the eastern swell; in the north, however, very weak.
4. The weak swell (*bungdokieng*, *kaelep dokieng*) coming out of the north (*eang*, *ean*) or northwest; strong only near the northern islands; imperceptible south of an island.
5. “Knots” (*bot*; *boot*) Erdland: *boj*, *buj*). Of an island, the swell out of the east and west is diverted and forks to the north and south. When the branches of the eastern and western swell cross, the “knots” form as equalization points which arrange themselves in a line called “root” (*okar*, *ogár*) because it leads “to the palm tree” (the island).

In individual cases, the “knots” are named after the island to which they lead, e.g., *butj en Maloelap*. The places where the swells fork are also called “knots”. In the case of the eastern swell it is *butj en raer*, and with the western swell, *butj en kapingeilin*(island connection knots?).

6. *Nit in kot*(*nit in kat; nid en kot*), cockfighting pit for plover (*kötköt*), or bird snare. It is the eastern swell at an island or about ten nautical miles behind it (not in front), deflected about thirty nautical miles away to the southwest. .
7. *Rolok*(*rolok, raloq*), the eastern swell deflected to the northwest at an island. A canoe which encounters *rolok* on the voyage from east to west has missed the target island, whereas in the case of a voyage from west to east, it has only to follow *rolok* to arrive at the island.
8. *Djur* (*jur*) *in okme*, the western swell deflected to the northeast or southeast about ten nautical miles in front of an island. As a deflected western swell, *djur in okmeis* used the same way as *rolok* and *in kotas* a sign of having missed or reached an island.
9. Currents (*áe*), are distinguished as current at sea (*áe*) and current at atoll or in a passage r: *ait*), with the following types:
 - a. east-west current: *aetak*; current in the open sea.
 - b. west-east current: *aedo, abibtu*
 - c. north-south current: *aelokieng, aarinalok*
 - d. south-north current: *aelokerik, aaninalok*
 - e. current flowing out of the lagoon: *áilik, aalik*
 - f. current flowing into the lagoon: *áioar, aawar*
 - g. outer ring of current: *air*, around an island, caused by tides
 - h. inner ring of current: *abang* corresponding to
 - i. chopiness in front of a passage: *ei in kabbin do*)
 - k. places free of currents (*aamman*; in the reef passage, *aikijek*), and calm water at sea. *medal*).
 - l. The currents *jukae*, higher; *ribukáe*, to enter; and *djeldjelatáe, jelat*, to set free, to be free again; *djeldjelat*, to untie knots; *djeldjil*, roll of pandanus leaves; *djeldjelat*.
10. Reflected swell on the weather side (*ilíkied, ilikiedj*; Erdland: *ligiej*) of an island, e.g., *likiet in Namurek*, “swell flowing backward near Namrik,” and *katj in rejib*(*ketj en rejep*), “gorge for flying fish,” the swell on the weather side reflected by the fringing reef, which appears to flow against the swell and forms ripples. A reef passage on the weather side (in the northeast) is called *dorilikiedj*), in contrast to the passage *dorikebinin* the southwest.
11. Large area of choppy sea between the islands (*luguenlamedo* open sea), situated in the center of the cruciform instructional charts. The surrounding areas of the chart are called *aonmedo*, “at sea,” and are differentiated as

aonmedorilik, *aonmedoieng*, *aonmedoirear*, and *aonmedoirekin* the west, north, east and south. Here, too, the canoe encounters high seas.

12. The “gates” (*lema*) of the atoll, i.e., the departure headings used at various seasons
 - a. *lemareang* in the north, used at the time when the sun is in its northern position
 - b. *itokurearlablab*, *tokurearlablab*, usable when the sun is at its zenith (*bio*) during trade winds, i.e., in March and April, located in the east
 - c. *lemarak*, usable during the season of northeast trade winds when the sun is in the south, located in the south.
 - d. *itokkabilingrek*, in the southwest (*kabiling*, west; *rekor rilik*, south)

Charts are oriented for viewing with south at the top, north at the bottom, east to the left, and west to the right.

There are three kinds of charts.

- a. **Instructional charts** (*mattang*, *matang*) for demonstration of the aforementioned concepts for the voyage between two or four islands, or even simply to demonstrate the conditions around a single island. As a chart of two islands, which need not necessarily be named, the chart is a lance-shaped structure which indicates *rolok*, *nit in kot*, *djur in okme*, and the knots and roots which lead to the islands (the points), whereas a frame with crosspieces indicates the swells and currents. As a chart of four islands (*medoemenani*) it exhibits the form of a Maltese cross set diagonally in a square frame; at the ends of the cross arms are located the islands (Djalut, Ailinglablab, Ebon, Namrik or others, which need not be named). Only the voyage through the middle of the cross between two opposing islands can be demonstrated. A short crosspiece is almost always located on the eastern arm of the cross; it marks the eastern side (*rear*).

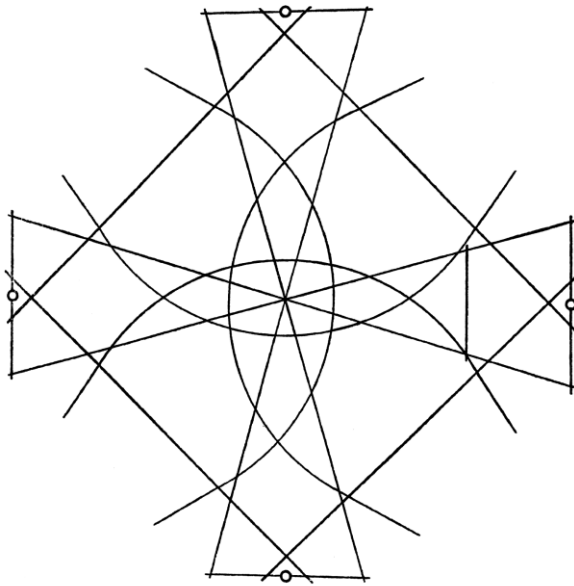


Fig. 68. Instructional chart. Hamburg specimen #391:10. One-eighth actual size.

b. **Summary charts** (*rebbelib*, *rebelip*) of all, or the most important, of the islands of one or both archipelagoes of the Ralik-Ratak Islands, or of the northern or southern part of both chains. Usually only the swells between the islands are indicated, whereas the actual geographic location is of no importance. Additional details on knots, current conditions, sighting distances, etc., are rare.

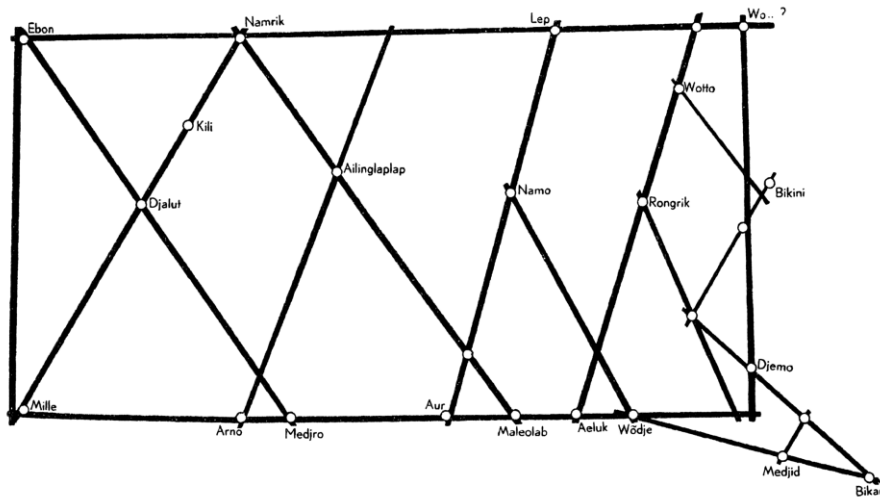


Fig. 69. Summary chart. Hamburg specimen #E 977. One-tenth actual size.

- c. **Special charts**, actual *medo*, with detailed representation of the sea conditions between a few islands. They are for use by canoe captains and for their information prior to setting sail, as it is considered scandalous to continue to consult a chart when underway. Various shapes, according to the areas depicted and the methods of the navigator.

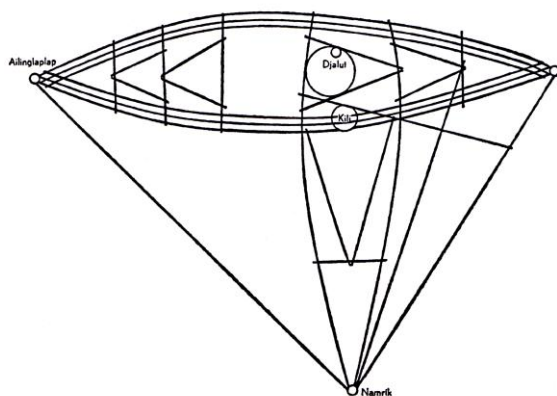


Fig. 70. Special chart. Hamburg specimen #392:10. One-eighth actual size.

Practical Navigation

The rimedo first determines the favorableness of the season, wind, weather, which was closely observed shortly before sailing, and whether the cargo is properly

stowed. The period from May to October is the peak travel season, for at that time the northeast swell prevails. Before setting out, the stick chart is consulted once again for the sea conditions, and the course is set from a point on the island of departure to a point on the destination island. At the same time, the rimedo ascertains which guide star is of importance to this course and for how long. Rilep or ogar are used as sea marks especially during the season of the strong eastern swell; kaeleptakirilik and kaeleptakirear are used for the north-south course, and bungdokerik and bungdokieng for the east-west course.

Once the vessel has been brought onto the correct course heading, the angle that the canoe forms in relation to the swell is noted, and the course is maintained only so long as it can be assumed that the swell is constant. To maintain the correct angle, a man lies down in the front of the canoe and observes the sea from the lowest elevation possible. At night this is quite difficult and usually the eastern swell alone can be perceived.

Depending on the pressure of the sails and the strength of the wind, at the rimedo's behest the crew disperses as living ballast on the canoe and the outrigger frame. To dispel weariness on the voyage, the steersmen sing or recite sayings, and accompanying women drum incessantly. The place on the lee platform is accorded chiefs' families; or the seat in the stern (*djablap*) of the canoe is reserved for the chief alone.

If several canoes sail together, the lead vessel is the rimedo's or chief's. The other canoes follow behind it at intervals of one to two nautical miles. In order to have a wide field of vision, the group of canoes frequently sails in a staggered line. If both a rimedo and a chief are in the *fotilla* (*inej*), they either sail together in the first canoe, or the rimedo leads and the chief brings up the rear so as to assist vessels in distress. During the night the blowing of shell trumpets keeps the canoes together. When the first canoe sights land, is usually the case at a distance of seven nautical miles, or ten to fifteen nautical miles, it likewise signals with the shell trumpet. The canoes behind it relay the message.

When it rains, the sails are slackened and covered with protective mats. In the event of prolonged rain, because of considerable drift in places, protracted tacking later has to be resumed until the original course is regained or land is sighted. Even in good weather, but all the more so in bad, water has to be bailed continually.

Often in the case of greater distances, to facilitate navigation the course is set for a reference island, for instance, Wotto on the voyage from Ronglap to Guadjlen. When the reference island is sighted (*likiedjWotto*, weather side of Wotto), a new course (*aora*, to change course) is taken to the destination. On a good voyage, after a certain period, an indication of land (*kamedo*) has to be sighted, for instance, behind Wotto the *no in rear*, which up until then has been hidden, or otherwise later the "line of roots" of the target island; or, at least one day's journey out from the destination, perceptible deflected swells such as *rollokor djur in okmehave* to be encountered. By these means the direction of land can be discerned. An additional sign is the alternation of the *djeldjelatáe*, *ribukáe*, and *djugáe* currents with calm water. If the "line of roots" (*ogar*) has been reached, one sails along it. On the *ogar*, the canoe is not supposed to roll. On the "knots" (*bot*), however, the canoe gale drifts occur when land is missed. In spite of this, it is considered improper to give the *rimeo* any sort of advice, or to keep lookout for land in his stead, or even

diverges slightly from the course. Because the canoes and islands are low, the sighting distance of land is quite short, and thus, frequent wayward voyages and also occasional gale drifts occur when land is missed. In spite of this, it is considered improper to give the *rimeo* any sort of advice, or to keep lookout for land in his stead, or even simply to mention the name of the destination at all. After a wayward voyage, a canoe is taken apart, charmed and reassembled.

In more recent times, because of greater safety, compasses, German nautical charts, and parallel rulers have come into increasing use, and the ancient aids to navigation have fallen into neglect. Instead of ancient canoes, chiefs have frequently acquired schooners.

Time Computation

Time is reckoned by the number of nights, and by months. The month (*allin*, *aling*) corresponds to the lunar cycle, calculating from the earliest waxing phase (*alliniju*). The moon in the west, i.e., the first phase of the moon, is called *djabiroro*; the second, *alingidju* ("star moon"); the eighth is termed *alingebunginaiolap*, and the fourteenth (full moon), *djetengel*.