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Highlights of the Second F. A. O. World Fishing Boat Congress

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RECENTLY I ATTENDED the second World Fishing Boat Congress which was held in Rome, Italy. The first World Fishing Boat Congress took place in November of 1953, during the Gulf and Caribbean Fisheries Institute Convention in Miami Beach. At that time, I had the opportunity to present a few remarks pertaining to shrimp trawler production. The outcome of this First Fishing Boat Congress was the book called *Fishing Boats of the World.* This book is based on all the papers that were delivered at this Congress and the experience of all the workers in many parts of the world. A similar book will be published, probably next year, covering all the discussions that took place at the second Congress, held in Rome. This will be the most up to date book on fishing boat development.

The Congress Meeting in Rome took place April 5th through April 10th, 1959. Fifty technical papers were presented of which one was mine. Thirty-five different nations were represented at this meeting; Mexico was represented with one delegate as well as Cuba. The United Kingdom had forty-two. The United States had nineteen and Soviet Russia had four. The Japanese had a good attendance of ten. Nearly three hundred people attended this meeting.

The conference was organized by Jan-Olof Traung, who is the Secretary of the Fishing Boat Congress and has his headquarters in Rome. The theme of this Congress was performance and this was broken down into four subjects:

Tactics, Construction, Sea Behavior and Productivity. One day was allocated to each of these subjects.

The discussion on *tactical methods* was split into sessions on fishing methods and deck arrangement, and command of operations. The authors of these discussions discussed drift-netting, gill net fishing, and trawling, etc.

The subject of *construction* was divided into sessions on scantlings, fish holds, and installation of machinery and cost of construction. There is quite a variance in the standards established in the various foreign countries as to the types of material that can be used for boat construction, and a discussion was held on the use of uniform scantlings or timbers and their standardization. The session on fish holds as well as various freezing methods aroused much interest. As to installation of machinery, no individual engine design was singled out, but there was a general discussion on the types of installations. As to vibration, quite a debate was held on the relative merits on controllable pitch propellers. Also, in this discussion, costs were brought up on the United States

fishing vessels, and it was emphasized that construction costs were much lower in Europe.

Sea Behavior was divided into sessions on propulsion, stability and safety at sea. This discussion was strictly in the hands of the Naval architects. The majority of the people present were Naval architects who stressed their views as to the types on construction for the various fishing vessels. It was also brought to the attention of these architects that they and the fishery technologists should cooperate more closely on such matters as the efficiency, the simplicity and the cost of fishing boats.

Mr. H. C. Hansen, a consulting Naval architect from Seattle, Washington, presided on the session "Safety at Sea," which was an excellent discussion. It emphasized the importance of training fishermen to become good seamen. It seems that throughout the world the fishing industry is faced with low caliber personnel for manning their fishing fleets. Many safety measures were also discussed to prevent the loss of lives and fishing vessels.

Mr. H. I. Chapelle, who is a well known author on fishing boats, gave an interesting talk on fishing boat design. This discussion covered everything pertaining to hull information and the scientific study.

The last day was taken up with *Productivity*, and various boat types were discussed, and at this time I presented my paper on the "Design and Mass Production of Shrimp Trawlers." These are a few excerpts from my paper. "The design of the Florida shrimp trawler is similar to the old Greek sponge boats which were constructed many years ago. In the early part of 1947, we arranged with a group of Naval architects to lay out a trawler on the lines of the Florida shrimp trawler, which would be simple and could be safely handled by a small crew. Its design must be such that it could be standardized. As American trawler crews frequently change from boat to boat, therefore also it must have comfortable accommodations and sea *kindliness*." In my paper the details on the scantlings that were used in our trawler were given. Our 67 foot shrimp trawler was a perfect example of mass production. This boat affords sheer forward and aft which makes it a very dry vessel. It was necessary when we designed this boat that it should be a sound and profitable vessel at the minimum cost, because the purchaser usually has to borrow 75 per cent of the purchase price to finance it. We know that financing is not as difficult as it was in the past especially when you have a standard design fishing trawler. It has been proven that the shrimp trawler in the United States is more readily financed than any other fishing trawler. The underwriters also play an important part, because if they do not approve of the vessel, the loaning institutions will not be interested in financing.

I had the opportunity to present to the Congress the lines and offsets of our shrimp trawler. The ample sheer at the bow gives it a relatively dry deck and its round bottom makes it good in a head sea.

The following remarks were delivered by Mr. Jan-Olof Traung after I delivered my paper. He stated that according to Professor Lewis, a well known authority, the lighter boat on a given length has a better sea behavior and less stresses in a seaway, and that is the reason why fishermen prefer the wooden type hulls to the steel type hulls which are being built from time to time. The fact that the transom stern gives a good damping is why the head sea performance is said to be excellent. Mr. Traung also stated that the prismatic coefficient of the Diesel Engine Sales boat is very low and that is the reason for good head sea performance. He said that all the scantlings or timbers used were sufficient.

Papers were delivered on the use of outboards on small fishing boats, as there are many of these boats in use throughout the world. There were numerous discussions as to whether an inboard was superior to an outboard on these small fishing craft.

As mentioned before, many Japanese were in attendance. As one knows, the Japanese coastal fishing boats are simple and inexpensive to construct. There are more than 130,000 small, unique fishing craft from one to five tons along the open and sheltered coast of Japan, most of which are operated as small individual enterprises. These boats are built of wide wooden planks without complete frame systems. These boats are called "yamato" type, and they are said to have been developed from the fifteenth century dugout vessel. These boats are used for pole fishing and seining, etc. They are very weak in construction as they have very few planks to give them strength and the length is generally limited to about fifty feet.

Since World War II the Japanese have gone in for many refrigerated factory ships. The first factory ships were remodeled from wartime standard ships. Recently, they have built new refrigerated factory ships, and now they have over fourteen. The Japanese are quick to adapt themselves to the changes in the fishing industry, and the fact that they have an abundance of labor and low wages are the reasons that they are constantly developing their industry.

In the North Pacific where they do salmon and trout fishing, a refrigerated factory ship will have with it thirty "catcher" boats which average from 50 to 80 gross tons. These "catcher" boats bring the fish to the mother ship where it is processed and canned. This factory ship also provides the gear, fuel, etc. to the smaller boats.

Professor A. Takagi, Professor of Naval Architects at the University of Tokyo, reviewed the Japanese work, which is the development of two large fishing vessels for nuclear or atomic propulsion to be completed by 1975. The possibility of an atomic preservation of fish, which might make freezing unnecessary, was mentioned.

It was stressed that since 1953 there have been so many new developments in connection with fishing vessels, that more fishing vessels today are being built with transom sterns and that more and more naval architects are being employed in design and construction. The construction of boats was a very important subject because fishing boats are usually built by traditional methods or according to regulations made by the government and classification societies. Many times it is found that existing construction regulations would make the fishing boats cost much more than the owner could reap in returns.

In view of the changes in boats by 1975, automation will probably make considerable progress. Boats will be designed to operate with smaller crews. The fishing boat of the future might even be airborne with adjustable jets to keep them stationary or at low speed when fishing. Such vessels would fly with their catch direct to consumption centers far inland. The development in the fishing craft design will continually accelerate as long as technical progress goes on.

A great tribute is due to F. A. O. World Fishing Boat Congress and their commendable organization for all the proceedings that took place in Rome, and the fact there was a complete exchange of information from all the specialists related to the fishing boat industry.