

AN OVERVIEW OF CALIFORNIA SQUID FISHERIES
AND CALIFORNIA LIGHT FISHERY

BY
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Pete and Jake asked me to talk about the California fishery and give a background on it. First I will give a little background of the fishery which started in Monterey about 1860 or so, which makes it about the oldest fishery on the West Coast. The Chinese were the first to fish squid. They used a two-boat purse seine which was about three fathoms deep and 30 fathoms long. They attracted the squid to the surface with a lighted torch. They didn't use much light, but they were pretty successful at it. The product was mainly dried and shipped to China and to Hawaii.

(Referring to a slide) I thought that I would show a slide of a squid. One can tell the male Loligo opalescens from the female mainly by the size of the head. The males always have bigger heads. The canning of squid started around 1920 and freezing in 1926. The bulk of the product was dried until about 1932 when the silver market collapsed, silver being used for payment. Something to do with the price of tea, I think. So the fishery kind of died down until about 1943 or so when it picked up again. This occurred mainly because we were shipping a lot of squid overseas. Right after the war a lot of it went to the Philippines and other places as part of our A.I.D. effort.

The Southern California fishery started around 1958 when they started getting more consistent catches. Here are some recent catch data. The Southern California fishery that started from scratch has just about caught up with Monterey. The total catch has steadily gone up. This reflects effort as well as an increase in market size, especially in Japan in recent years. A lot of squid is also going to Europe. Most of

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the catch is used frozen, some of it fresh, and about 20% is canned in any given year. These are the three main market forms of squid.

Fishing methods in Southern California and in Monterey are kind of different. The seasons are different as well. Most of the monthly catch in Monterey is made in May, June, and July. It is only during the spawning season that the squid are caught. In Southern California, most squid is caught in December, January, and February, except this year in which we haven't caught any squid yet.

The seasons are not the only things that are different. The catch methods are also different. In Monterey the lampara net, which is a round haul net, is exclusively used because they outlawed the purse seine in 1953. The lights, which are currently used in Southern California, were outlawed in 1959. These laws were actually put into effect by the industry.

The price also differs. Historically, Monterey has always paid higher prices for their squid -- presumably because the squid are better, but there are a lot of arguments about that. In 1981 the canners paid \$115 a ton which is less than the \$280 a ton price for freezer squid. At the same time the San Pedro price on freezer squid was \$150 a ton and \$90 a ton. This year, for the first time we just can't find any squid in Southern California, probably because of some funny weather conditions. Consequently the price has gone up to \$400 a ton, which is the first time ever that the squid is more expensive in Southern California. This indicates that the quality of squid may not be that important.

I mentioned that light attraction is one way we catch squid in Southern California. We also use purse seines. Most boats are albacore boats that have a trolling rig on them and don't need much to get them ready for squid fishing. All you need are two 1500 watt incandescent lights up above, and two lights along the sides which are used to concentrate the squid. Then all you need is a big scoop. It is a simple method and very cheap, so a lot of people can get into the fishery. As I said before,

most of the boats are albacore boats and fish squid in Southern California only in the winter.

The fishing locations are primarily Catalina, the Channel Islands and also on the coast. There are two canneries in San Pedro and one in Port Vanier and most of the freezing capacity is in San Pedro. They probably handle something like 250 tons per day now which is a lot more than the 100 tons per day that they processed a couple of years ago.

Most squid are caught in shallow water from 13-18 fathoms and because the boats have to anchor to catch squid with light, there is a limitation of about 35 fathoms due to the fact that you can't drop the hook in anything deeper. If you find any squid, which is the first problem, you should look for those predators which are feeding on dead and dying squid that come to the surface as they are spawning. The fishermen use the birds, pilot whales or sea lions to help them locate squid. They are good indicators of squid. Mostly they use a fathometer. The meters range from about 28 to 125 hertz. Only a couple of boats use sonar. At nighttime, illuminance is a good way to find them, especially if they are near the surface. After they find the squid at night they drop the hook, turn the lights on, and hope that they come up. They don't always. You have to judge whether the squid are going to come up or move to a different spot. This year everybody is apparently sitting on the squid and hoping they will come up. They sit on the squid for two or three days and they still don't come up. When you get enough squid under the light you can use a brail that is about 3-1/2 to five feet in diameter with a 12 foot handle. All you do is drop the brail in the water with a boom, pull it through the squid, and up it comes. Drain the water out and dump it in the hold. It is an effective method, and you can catch 40-50 tons at night with no problem. It seems like an easy job, but in actuality it is tough, hard labor.

Being a good government bureaucrat, I thought there was an easier way to make a living. A dozen years ago Matt May and I came up with this system called "squid slurp," which is almost the same as the brail method but

uses a pump and a funnel in place of the brail. It really worked great. The pump was an eight-inch hydraulic capsule pump. We projected a wooden funnel about six feet wide out from it and put on another underwater lamp right above the funnel. The rest of the gear was comprised of a separator screen which sent the water over the sides and shot the squid right into the hold. One night we caught about 70 tons while drinking coffee. Matt made some changes on this thing, and it really works much better now. Later, we took off the top panel to avoid the surge which we found to be a big problem during rough weather. If we put this pump right under the tracking lamp, we also found that we didn't need an underwater lamp.

QUESTION: How much does this unit weigh?

KATO: Probably three-quarters of a ton. The pump has some disadvantages. When the squid are dead on top of the water they don't move, and it is very tough to pump squid under those conditions. When they are alive and moving we get 15 tons in 10 minutes, but in other cases when they are not moving, to scoop is actually faster. Also this pump will damage maybe two to five percent of the heads of the squid so the freezers don't care for it too well. In rough weather it is pretty tough to work, although we did okay in about 30-knot winds. Unloading is done mainly by brail which takes a lot of time. This is one of the reasons why you need a crew. The pump is not that advantageous when you are unloading. It is very simple; the squid are loaded in boxes and go into slush ice directly at the freezer plant. At the canneries they use fish pumps, making it much easier and faster.

The second method used in Southern California is the purse seine. They find the squid in much the same way the light boats do, but most of these boats use sonar so they can find the fish better. And they fish in the same grounds as the light boats. Matt doesn't like it because he thinks they are dredging up the eggs, which there may be some truth to. About 10-15 boats fish seines. A half dozen of them fish steadily and this is mainly dictated by the market. If the market asks the boats to fish,

they will go out and get squid because they are valuable now. In the light fishery we get anywhere from 20-70 boats, which also depends on the market conditions.