

## ADDITIONAL COMMENTS ON OPERATIONAL COSTS

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### **Development of the Historical Price Formula**

The interpretation of the criteria used by the non-binding price formula arbitrator to create the price formula was set in the first years of the program, when a consensus emerged about how to interpret the federal regulations.

The consensus was that the historical division of first wholesale revenues was to be based on data from COAR and from other public sources, such as Monthly Red King Crab export prices to Japan. The data included the actual ex-vessel price paid and the wholesale price for crab during the same year.

Using these sources, the non-binding formula arbitrator constructed a regression formula based on the historical data from 1990 to 2004/5; and then applied that regression formula to the current wholesale price of crab. In some cases adjustments were made to the regression formula to ensure a match with real world conditions. For example, the golden king crab formula was adjusted to assure it did not return a higher ex-vessel price than the red king crab formula.

Also a differential price formula was developed for northern and southern Opilio, based on the differential ex-vessel prices paid in Dutch Harbor and St. Paul during the historical period.

Further, the lengthy season approach was universally adopted. The lengthy season approach allows IFQ and IPQ holders that have committed deliveries to negotiate a modified schedule for arbitration, whereby binding arbitration proceedings are delayed until a time during the crab fishing year.

By adopting the lengthy season arbitration approach, there was no need to estimate the market price for crab, as had been done prior to rationalization, but instead the formula could be applied against actual wholesale prices once the bulk of the harvest was sold. This has become the standard way in which the price formula is used.

The statistically valid way to apply the regression formula based on the historical division of revenue to current crab market prices is to use the 95% confidence band around the mean price point determined by the formula.

In the view of the non-binding formula arbitrator, any ex-vessel price point that falls within the 95% confidence band around the regression formula is a valid reflection of the historical division of revenues.

If you go back and apply the actual wholesale and ex vessel price data from the historical period by individual company, you find a significant variation in the division of revenue from company to company because although all companies paid the same initial ex-vessel price, they ended up selling crab at different prices.

This meant that even though all processors paid the same ex-vessel price, the processors had different sales prices and different margins, and as a result had different division of gross revenues.

The principal reason for different prices was the timing as to when the product was sold; not different prices within the same month of the year.

Here is a simple example. If the ex-vessel price of king crab was \$4.00, based on the Harvesters estimate of a wholesale market price of \$8.00 at the start of the season, packers could have very different outcomes depending on their business strategy.

Using an average yield for 64% for red king crab, for 1000 lbs of raw material, the finished material available to the packer would be 625 lbs. For 1000 lbs of live crab, packer A would pay \$4,000, and after processing he would have 625 lbs. of sections to sell at \$8.00. His gross revenue would be \$5000, and his gross profit would be \$1000.

However this assumes the price for red king crab in October remains the same throughout the year both for sales to Japan and the US. In fact this rarely happens.

So in our example, let's say by December strong demand had pushed up the market price to \$9.00. In this case, Packer B who held half his production because he anticipated a higher price (for example in the US market), would earn \$2500 selling half his crab at \$8.00, and \$2812 selling the other half at \$9.00.

For this packer his total revenue would be \$5312, less \$4000 in raw material cost for the crab, with a gross margin of \$1312, 31% higher than his competitor.

The harvesters selling to these two packers would both receive \$4.00 per lb. but the share of wholesale revenue each received would be different. The boat selling to Packer A received 50% of the wholesale sales price (\$4.00 and \$8.00). The boat selling to Packer B received 47% of the sales price (\$4.00 and \$8.50).

Once lengthy season arbitration was adopted, this important competitive difference between packers disappeared.

Now the packer who sold for an average of \$8.50 would pay the boat \$4.25 if the price formula had been set at 50% of wholesale revenue; while the packer who sold at \$8.00 would pay the boat \$4.00.

An important first year arbitration confused this issue, and awarded a higher price to the vessels selling to the company that had a lower gross revenue. Such a decision preserved the idea that there was a fleet-wide price, something harvesters achieved in the historic period, but the decision did so by violating the historical record of processors actively selling at different prices.

This issue did not come up in the design of the program because there was an initial assumption that much of the fleet would settle on an opening price based on an anticipated wholesale price, very similar to the way negotiations had happened in the past.

When the industry adopted lengthy season arbitration, for a host of good reasons, it invalidated the requirement that all vessels get the same ex-vessel price, and instead harvesters would get the same share of wholesale revenues, as determined by the price formula.

This decision had a very bad effect on the crab industry, because it mandated that all processors sell at approximately the same price. If they did not do so, they were subject to arbitration for failing to sell at the anticipated market price.

This decision stifled innovation, and removed any incentive for a processor to invest in making a more valuable crab product.

Here is how this played out in practice.

Processor A wants to sign a major contract with a customer at a higher price, but the specifications and extra handling will require an additional investment of \$0.20 per lb. in the plant.

The established wholesale price is \$8.00. The customer is willing to pay \$8.30, but the processor has an additional 20 cents per lb. cost.

Using the same 1000 lbs of crab, the raw material cost of 625 lbs of finished sections sold at \$8.00 would be \$4000, and the gross revenue is \$5,000. The processor's margin is \$1000.

Now the processor tries to accommodate this customer request. He spends an additional \$125 (.20 per lb). He sells at \$8.30.

However due to the contract arbitration decision, the price formula now sets the raw material price at \$4.15 (50% of the wholesale price).

Here is the result:

1000 lbs of live crab at \$4.15 = \$4150 cost.

625 lbs of finished product raw material cost is  $\$4150 + \$125 = \$4275$ .

The gross sales price is 625 lbs X \$8.30 or \$5187.

The gross margin to the packer is \$912.

This is less than the gross margin the packer would have received if he sold at the lower price of \$8.00, and refused the request for a higher value product.

In my opinion, this particular cost of \$.20 a lb to produce a higher value product should be recognized in the arbitration system.

One way to do this is for the council to provide processors the opportunity to initiate arbitration. The purpose of having the ability to initiate arbitration is to provide a mechanism so that contracts are enforceable.

In our example, if the packer and the harvester agreed beforehand that selling at the higher price was desirable, they could negotiate a mutually advantageous share of the additional revenue.

The example calculation is as follows:

30 cents extra gross revenue per wholesale pound, less a 20 cent variable cost, means there is 10 cents additional net revenue. If the harvester and the processor split this revenue 50/50 on finished pounds, each would gain 5 cents.

Harvester and Processor:  $.05 \times 625 = \$31.25$

The new revenue share would be:

Harvester: \$4.00 for 1000 lbs (base formula at 50%), plus 31.25 or \$4.0313 per lb.

Processor: 625 lbs at \$8.30 = \$5187.50 less cost of \$4031.30 for raw material; plus an additional \$125 in variable costs, = 4156.30.

Processor gross margin is now \$1031.20, or 3.12% higher than before, while the harvester also gets an additional 3.13 cents per lb.

As the non-binding formula arbitrator, it has been frustrating to me that the price formula could not accommodate such arrangements, because they would mean varying the percentage of wholesale revenue. Due to the contract arbitration decisions early in the program history, processors lost the incentive to make these arrangements, because there was no mechanism to enforce them via the arbitration system. The reason was that these costs were not recognized as admissible, as most early arbitrations focused on setting a fleet wide price both through the formula, and through the actual price paid per lb.

Historically the percentage of wholesale revenue varied considerably, despite there being a fleet wide price.

The practice of treating the non-binding price formula, which describes a percentage of wholesale revenue as the exact equivalent of the fleet wide price distorts crab marketing in a way that was not the case prior to rationalization.

It can be argued that these agreements can be made between the parties under the existing system. But the fact is, these contracts cannot be enforced under the current arbitration system, and for this reason, in my opinion, they are not likely to be made.

### **Recommendation:**

Processors be allowed to negotiate certain variable costs with harvesters within the crab arbitration system if a) such costs are investments in creating a higher value product with a higher total return to industry, and b) harvesters are willing to share the risk that such attempts to increase value in the market place may not succeed.

That Processors be allowed to initiate arbitrations if necessary to enforce these agreements if they lead to pricing different than the existing price formulas.

Note: This issue was flagged in the 18 month review.