INTERNATIONAL COMMISSION FOR THE NORTHWEST ATLANTIC FISHERIES

Serial No. 387 Document No. 27

ANNUAL MEETING - JUNE 1956

A New Method for the Calculation of Landed Weights from the Fishing Vessels

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When examining the data for the calculation of the two factors of conversion, we have found it interesting to add a third factor which can be used for calculating the weight to be landed at a certain date.

It is of high interest to be able to calculate the exact weight of the landings from the separate fishing vessels and this especially towards the end of the fishing campaign. Actually the captains of the vessels try to do such a calculation in a rough way.

To this purpose the captains, during the campaign, assign to the full cesto of cleaned fish a weight which they calculate this fish will have at the moment of landing. During the various research cruises, it has been found of interest to weigh the various cestos and calculate their mean weight, which combined with the value of the conversion factor found by these studies give a landing result somewhat different from the mean value estimated by the captains. This small difference in mean weight of the cesto (3.4 to 5 kgs.) added to the total of the cestos makes a rather considerable error. At the same time it appears that the weight of the cesto landed is not the same for the various species of fish.

To remedy these inconveniences some captains used the procedure of reducing or increasing with about 5-10% the number of cestos, varying according to what they judged would come closest to the actual landings.

It is thought that a more accurate estimate of the quantities to be landed can be made by introducing a new conversion factor No. III.

This new method has applied to the various species caught in the ICNAF area. The details for these species are given below.

Table 1. Conversion factor III for the different species fished by Spanish vessels.

A: Cod

		Spring	Summer
1953	Over 93 cms.	1.99	
	70-92 cms.	2.03	
	below 69 cms.	1.78	
	Average	1.93	
1954	Over 93 cms.		1.66
	70-92 cms.		1.48
	below 69 cms.		1.46
	Average		1.52
1955	Over 93 cms.	1.68	1.47
	70-92 cms.	2.06	1.62
	below 69 cms.	2.12	1.65
	Average	1.93	1.61

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Table 1 (cont.)

		Spring	Summer
	B: Haddock		
1953	33-65 cms.	1.92	
1954	40-60 cms.		1.87
1955	45-70 cms.	1.93	1.93
	C: Pollock		
1953	52-96 cms.	1.79	
	D: Hake		
1953	52-104 cms.	2.07	

It is known that the conversion factor I is the relation between the weight of the round fresh fish and of that ready for salting. The factor II is a relation between the weight of the round fresh fish and the weight of the salted landed fish. It is naturally larger.

The factor III which is introduced here and which up to now has not been considered[1] is the relation between the weight of the fish at the moment of salting and that weight which will be the final result of the salting process in the vessels:

$P' = f \times p''$

P' = weight at the moment of salting after head off, eviscerated and splitting.

p'' = weight at the moment of landing.

During the two campaigns carried out this year, we have weighed this factor using data collected on board the vessels "Santa Eugenia", "Santa Ines" and "Bochorno" and after one and a half month of salting. It has been shown earlier that at the end of one month or one month and a half the dehydration can be considered as terminated (however only that which takes place in the holds, as in the plant the fish suffer a second dehydration). Here it is only the loss in the vessel that is of interest, because the knowledge of the size of that loss makes it possible for the captains to calculate the weight at landing.

Based on these data and on others published from earlier campaigns, we have calculated this new conversion factor. The results are summarized in the table 1.

According to the table, the loss of weight varies with the different size of the fish. At the same time one finds a noticeable difference for each species of fish. Other differences appear in relation to the season of the year: two of these at least are of importance. The conversion factor is different for the winter and spring (the maturing period and the spawning season) and for the season of summer and autumn (growth and recovery period). Finally it is possible that there is a small difference between the various subareas (Greenland, Grand Bank, etc.).

1) This Conversion factor III has, under another term been dealt with in the Portuguese reports on Conversion Factors for the 1954 meeting. These reports have been summarized in the compilation of conversion factor reports made in the Secretariat (4th Annual Mt. Document No. 21) where this conversion factor was termed "conv 1-s" and had an average value of 1.61 for cod, i.e. the same as that now reported by Spain for the summer period. The value of this conversion factor III for the captains of the fishing vessels was not considered. (Note by the Secretariat.)

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The dates obtained are from Grand Bank and St. Pierre Bank. From the total of them it will be possible to elaborate a table which is easy to apply. This is our intention for the successive cruises.

Way of Application of this Factor - In the first place it is necessary to know the exact weight of the full cesto of cleaned fish, which the fishermen call "green fish", and the number of cestos stored. It is necessary not to use cestos in which the fish are mixed together; this means that one must consider separately large cod, medium or small cod, haddock, etc.

The product of the number of cestos with the exact weight of the full cesto of cleaned fish will give the total stored weight of the species carried on board. This weight refers to the moment of placing in the hold.

$$N \times p_m = P_b$$

N = No. of cestos

P_m = mean weight of cesto

P_b = total weight in hold after fishing.

Thus P_b divided by the conversion factor III will give us the real weight of the quantity landed.

$$\frac{P_b}{III\ F} \text{ Landed Weight}$$

In the table 1 are given the values for this conversion factor III.

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