CIF Calculation
& Container stuffing

Abdul Gafoor

CIF in detail

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What is CIF

C	Cost/ FOB
I	Insurance
F	Freight

FOB + Insurance + Freight = CIF

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What is FOB

Free on Board

FOB stands for “free on board” or “freight on board” and is a designation that is used to indicate when liability and ownership of goods is transferred from a seller to a buyer.
Means the goods are free now to board.

Why does FOB matter?

FOB is important for several reasons, but most importantly, shippers and carriers need to understand FOB value in damage situations. Some receiving ports will refuse delivery of obviously damaged goods, rather than accept with a damage notation for future claim the value against the carrier.

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Insurance

It is insurance for the cargo. Shipping insurance is a service which may reimburse senders whose parcels are lost, stolen, and/or damaged in transit. It is like health insurance, life insurance or accident insurance.

Is insurance must for a cargo?

YES. It is must to cover any loss. The insurance cost depends on FOB value.

Who pays for insurance?

Buyer will pay if the good brought on FOB value.
Seller will pay if the buyer buys on CIF value

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Freight

Means the cost of transport. This is charge of shipping line to take the good to the destination.

Is freight must?

YES. Must pay to take the goods to destination. Like we buy a rail/road/air ticket to travel.

Who pays for freight?

Buyer will pay if the good brought on FOB value.
Seller will pay if the buyer buys on CIF value

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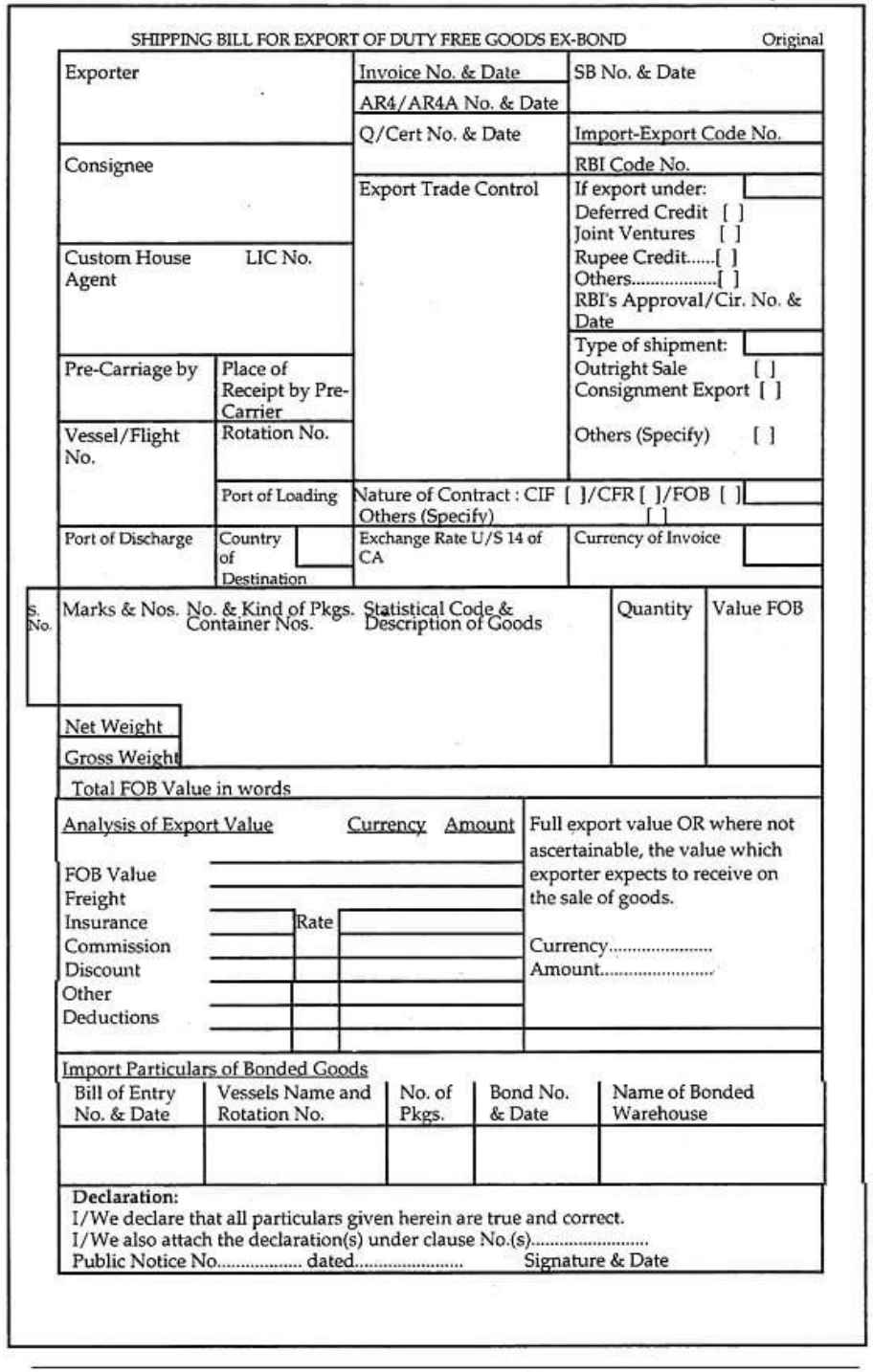

SHIPPING BILL FOR EXPORT OF DUTY FREE GOODS EX-BOND — Original

Exporter		Invoice No. & Date	SB No. & Date
		AR4/AR4A No. & Date	
		Q/Cert No. & Date	Import-Export Code No.
Consignee			RBI Code No.
		Export Trade Control	If export under:
			Deferred Credit [ ]
			Joint Ventures [ ]
			Rupee Credit.....[ ]
			Others.....[ ]
Custom House Agent	LIC No.		RBI's Approval/Cir. No. & Date
			Type of shipment:
Pre-Carriage by	Place of Receipt by Pre-Carrier		Outright Sale [ ]
			Consignment Export [ ]
Vessel/Flight No.	Rotation No.		Others (Specify) [ ]
	Port of Loading	Nature of Contract : CIF [ ]/CFR [ ]/FOB [ ] Others (Specify) [ ]	
Port of Discharge	Country of Destination	Exchange Rate U/S 14 of CA	Currency of Invoice

S. No.	Marks & Nos.	No. & Kind of Pkgs. Container Nos.	Statistical Code & Description of Goods	Quantity	Value FOB

Net Weight

Gross Weight

Total FOB Value in words

Analysis of Export Value	Currency	Amount	Rate	
FOB Value				
Freight				
Insurance				
Commission				
Discount				
Other Deductions				

Full export value OR where not ascertainable, the value which exporter expects to receive on the sale of goods.

Currency.....

Amount.....

Import Particulars of Bonded Goods

Bill of Entry No. & Date	Vessels Name and Rotation No.	No. of Pkgs.	Bond No. & Date	Name of Bonded Warehouse

Declaration:
I/We declare that all particulars given herein are true and correct.
I/We also attach the declaration(s) under clause No.(s).....
Public Notice No..... dated..... Signature & Date

This is sample shipping bill. You can see how the FOB, Insurance, freight mention on the bill

The CIF paid, means your good are ready to sail to destination.

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Example

FOB	$ 100,000
Insurance	$ 2000
Freight	$ 5000
CIF	$107000

The insurance cost is 2% of FOB.
Freight $ 5000 from Mumbai to Cape town

Very important thing to consider

For example

FOB	$ 15000
Insurance	$ 500
Freight	$ 5000
CIF	$ 20500

What happened in this case.

1. The freight cost is 33.33% of FOB. Because the distance is same.
2. The container is same 40 feet.
3. Minimum Insurance cost is $500.
4. Value of the products in container is low.

This consignment practically not feasible. No chance of profit on sale

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Let us Analysis

Product	FOB $ Per Carton
A	20
B	10
C	60
D	110
E	30
F	8
G	6
H	120
I	35

Example-

2100 cartons can accommodate in
One 40 feet container
Or a truck.
Or in a goods train

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Let us Analysis

No	Product	Per carton FOB $	Weight of a carton KG
1	A	20.00	4
2	B	10.00	6
3	C	60.00	10
4	D	110.00	12
5	E	30.00	15
6	F	8.00	21
7	G	6.00	18
8	H	120.00	16
9	I	35.00	3

The maximum weight allowed in 40 feet container is 27 tons, which is 27000 kg

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Case-1

No	Product	Per carton FOB $	Weight of a carton KG	Cartons planned in a container	Weight KG
1	A	20.00	4	100	400
2	B	10.00	6	300	1,800
3	C	60.00	10	400	4,000
4	D	110.00	12	120	1,440
5	E	30.00	15	200	3,000
6	F	8.00	21	50	1,050
7	G	6.00	18	100	1,800
8	H	120.00	16	120	1,920
9	I	35.00	3	80	240
Total				1,470	15,650

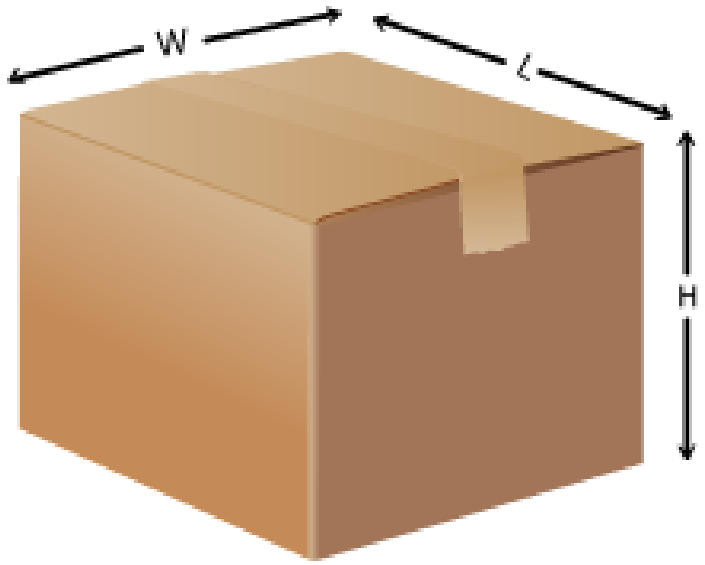
In this case -
The maximum weight allowed is not utilized. Only 15,650 kg. But freight is same $ 5000
In place of 2100 cartons, only 1470 cartons stuffed.

Case-2

No	Product	Per carton FOB $	Weight of a carton KG	Cartons planned in a container	weight
1	A	20.00	4	100	400
2	B	10.00	6	400	2,400
3	C	60.00	10	220	2,200
4	D	110.00	12	120	1,440
5	E	30.00	15	100	1,500
6	F	8.00	21	250	5,250
7	G	6.00	18	300	5,400
8	H	120.00	16	120	1,920
9	I	35.00	3	500	1,500
Total				2,110	22,010

In this case -
The maximum cartons in a container is ok. But the allowed weight is Low.
The weight and value are not just enough but size of cartons also important.

Volumetric Weight



$$\text{Volumetric Weight} = \frac{L \times W \times H}{6000}$$

L = Length in cm.
W = Width in cm.
H = Height in cm.

Example one carton

Length – 1.00 meters
Width – 2.25 meters
Height – 1.50 meters

1.00 x 2.25 x 1.50 = 3.375 CBM

Do you know what is Cubic Meter (CBM)?

CBM (**cubic meter**) is a measurement of volume one meter wide by one meter long by one meter high. CBM is used to calculate container chargeable space.

66.00 CBM maximum allowed in one 40 feet container.

1 CBM is 1,000,000 Cubic centimeters

66 CBM means = 66 x 1000000 = 66,000,000

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No	Product	Size of the cartons Cubic centimeters	Cartons planned in a container	CBM
1	A	15,000	103	15,45,000
2	B	20,000	400	80,00,000
3	C	19,000	222	42,18,000
4	D	22,000	120	26,40,000
5	E	25,000	110	27,50,000
6	F	21,000	215	45,15,000
7	G	34,000	300	1,02,00,000
8	H	75,000	130	97,50,000
9	I	45,000	500	2,25,00,000
Total			2,100	6,61,18,000

In the above container stuffing case-
Number of cartons and CBM centimeter matched.

Let us see the value and weight now

No	Product	Size of the cartons Cubic centimeters	Cartons planned in a container	CBM	Per carton FOB $	FOB Value
1	A	15,000	103	15,45,000	20.00	2,060
2	B	20,000	400	80,00,000	10.00	4,000
3	C	19,000	222	42,18,000	60.00	13,320
4	D	22,000	120	26,40,000	110.00	13,200
5	E	25,000	110	27,50,000	30.00	3,300
6	F	21,000	215	45,15,000	8.00	1,720
7	G	34,000	300	1,02,00,000	6.00	1,800
8	H	75,000	130	97,50,000	120.00	15,600
9	I	45,000	500	2,25,00,000	35.00	17,500
Total			2,100	6,61,18,000		72,500

Number cartons- Matched.
Value- Matched
CBMc- Matched

The only thing left is weight matching

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No	Product	Size of the cartons Cubic centimeters	Cartons planned in a container	CBM	Per carton FOB $	FOB Value	Weight of a carton KG	Total weight
1	A	15,000	103	15,45,000	20.00	2,060	4	412
2	B	20,000	400	80,00,000	10.00	4,000	6	2,400
3	C	19,000	222	42,18,000	60.00	13,320	10	2,220
4	D	22,000	120	26,40,000	110.00	13,200	12	1,440
5	E	25,000	110	27,50,000	30.00	3,300	15	1,650
6	F	21,000	215	45,15,000	8.00	1,720	21	4,515
7	G	34,000	300	1,02,00,000	6.00	1,800	18	5,400
8	H	75,000	130	97,50,000	120.00	15,600	16	2,080
9	I	45,000	500	2,25,00,000	35.00	17,500	3	1,500
Total			2,100	6,61,18,000		72,500		21,617

Max allowed weight is 27,000 kg. In this case 21,617 kg. All most matched. Some adjustment can be done while loading.

Matching all 3 – Value- CBM- weight is not easy.

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While planning a container load, the below things must consider

High value- low volume
Low value- high volume.
High value- low CBM
Low value- high CBM
Low volume – high CBM
High volume – low CBM

Thank you very much

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