

AIR CASE STUDY

*Air cargo consolidation faces two major constraints.
Technical on one hand, economical and about security on the other hand.*

The first is about cargo stowage, need to secure the goods and the transport process.
The second is to optimize aircraft volume use.

These two constraints found an issue thanks to container of consolidation. Palets and containers are Unit Load Device (ULD).

The main ULD used in air cargo consolidation are made of aluminium (resistance and limited weight) and are identified by a IATA code (3 letters or 2 letters and 1 figure) det followed by 4 or 5 figures, followed by company code.

(Example : PAG 45678 JL.)

It means a «88 inch pallet» owned by Japan Airlines.

Please find hereafter the cargo list received at Roissy airport at the storage place , Friday at noon for consolidation of AF flight no 276 on Saturday, delivered to Air France storage warehouse at the latest this day at 9 pm

| Number of packages | cargo | Unit dimensions in cms | Unit gross weight kg | Cbm | Total gross weight | Fragile |
|---------------------------|--------------------------------|-------------------------------|-----------------------------|------------|---------------------------|----------------|
| 20 | Cartons perfume Guerlain | 40 x 30 x 25 | 11 | 0,030 | | No |
| 15 | Cartons soap l'Occitane | 36 x 36 x 36 | 14 | 0,046 | | No |
| 5 | Cartons garments. Cardin | 120 x 50 x 50 | 26 | 0,300 | | No |
| 12 | Cartons shoes Norton | 50 x 50 x 40 | 11 | 0,100 | | No |
| 10 | Cartons bags LV | 50 x 50 x 45 | 17 | 0,112 | | No |
| 8 | Cartons cristallerie Baccarat | 30 x 30 x 26 | 19 | 0,023 | | Yes |
| 12 | Cartons cognac RM | 28 x 22 x 18 | 9 | 0,011 | | No |
| 14 | Cartons olive oil Puget | 52 x 23 x 19 | 18 | 0,022 | | No |
| 6 | Cartons wine Haut Médoc | 60 x 24 x 18 | 17,5 | 0,026 | | No |
| 5 | Cartons CDS Universal Music | 26 x 26 x 17 | 8 | 0,011 | | No |
| 3 | Personal coffers | 90 x 45 x 45 | | 0,182 | 198 | No |
| 9 | Cartons Éditions du Midi | 48 x 40 x 34 | 46 | 0,065 | | No |
| 2 | Palettes air carft spare parts | 115 x 115 x 86 | 378 | 1 ,137 | | No |

| | | | | | | |
|-----|------------------------------|----------------|----|-------|-----|-----|
| 2 | Caisse samples ores | 28 x 26 x 22 | 56 | 0,016 | | No |
| 7 | Cartons pièces électroniques | 50 x 48 39 | 44 | 0,093 | | No |
| 4 | Cartons banking records | 60 x 34 x 34 | 35 | 0,069 | | No |
| 4 | Wooden case fair return | 120 x 100 x 96 | | 1,152 | 809 | Yes |
| 138 | Total lots | | | | | |

Total weight 4256 kg

WM 1 dm³ = 6 kg

Pay load 4461 kgs

Volume 14.917 cbm

You are export manager and you calculate volume and weight to consolidate.

You have to identify the proper ULD below :

- PAG (LD7)

— dimensions 305 cm x 210 cm ; — load: 4 600 kg; — volume : 10 m³.

- PMC (96 inch pallet)

— dimensions 305 cm x 230 cm ; — load: 6 670 kg ; — volume: 14,5 m³.

- PGA/PGE (m²)

— dimensions 590 cm x 230 cm ;

— load: 13 100 kg;

— volume : 33 m³.

- AAU (LD29)
— dimensions 305 cm (bas) / 465 x 215 cm x 150 cm ; — load: 5 700 kg ;
— volume : 14 m³.
- **AMA (M1) is the proper choice**
— dimensions 305 cm x 228 cm >< 230 cm ;
— load: 6 450 kg;
— volume : 17,5 m³.

Then calculate the price on a flat rate of 5 000 € related to pivot weight of **2 000 kgs** and an extra cost per kg when more then the pivot weight of 2 € per kg including all applicable overcharges, except airway bill fee.

$$\text{Purchasing cost} = 5000 \text{ €} + (4256 - 2000 \text{ kg}) \times 2 \text{ €} = 9512 \text{ €}$$

$$\text{Cost per kg} = 9512 \text{ €} / 4256 \text{ kg} = 2.23 \text{ € per kg}$$

Then estimate what selling price might be possible (excluding AWB fee), clearance cost ...) according to the service, the market and cargo itself as well as cargo value.

$$\begin{aligned} \text{Selling price} &= 4461 \text{ kg} \times 2.70 \text{ €} = 12\,044.70 \text{ €} \\ \text{Gross margin} &= 12\,044.70 \text{ €} - 9\,512 \text{ €} = \mathbf{2\,532.70 \text{ €}} \end{aligned}$$

To issue one Master Airway Bill = shipper
But I will charge 17 AWB cost to the shippers

What can you conclude in terms of canvassing ?

Your export assistant manages 4,5 files a day of 7 hours and her hourly salary is 13 €.
Your clearing agent manages 25 export customs declarations and his hourly salary is 18.50 €.
Social charges is about 50%.

You have to calculate the net margin of your file before and after adding your structure costs which are 17% of your turn-over.

Profitability

Assistant manager = 17 files / 4.5 files a day = 3.77 days x 7 hours a day = 26.45 h
Hourly rate = (13 + 50 %) x 26.45 h = 515.78 €

Clearing agent =
17 files / 25 files a day = 0.68 day x 7 hours = 4.76 hours
Hourly salary rate = (18.50 € + 50%) x 4.76 hours = 132.09 €

Salary is 647.87 €

Net margin after adding your structure cost

2532.70 € - 647.87 € - 17% x 12 044.70 € = 2532.70 € - 647.87 € - 2047.60 €

Gross margin Salaries Structure cost

-162.77 €

One air way bill cost for 17 AWB Charged 15 € x 16 = 240 €
Clearing agent = 50 € x 17 € = 850 €

So possibly net margin at the end = 927,23 € (850+240-162.77)