Competency 7

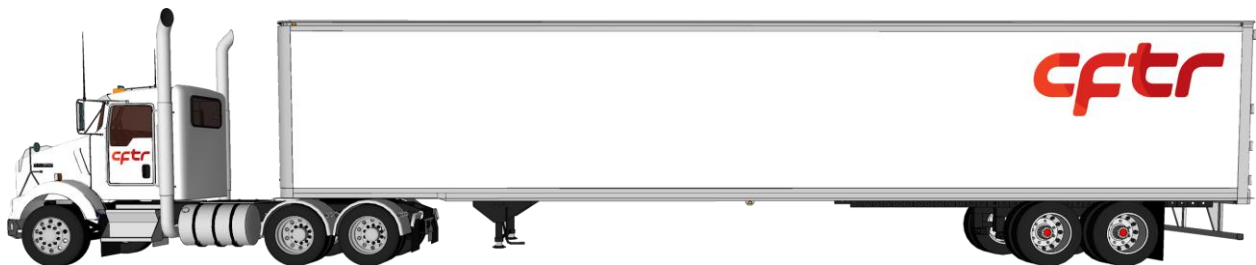**Load Standards**

A look back at load standards

For the following exercises:
- determine the types of axles and the load capacity of each;
- determine the total allowable weight;
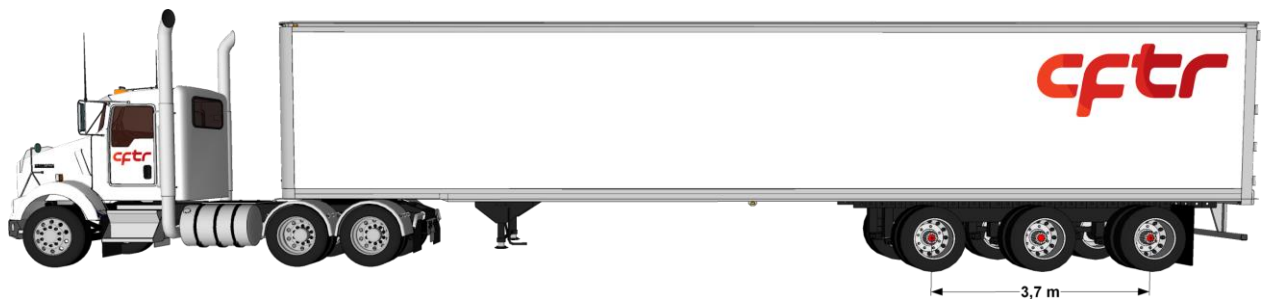- determine the payload that the vehicle can carry.

A)

Equipment weight: 16,200 kg

Types of axle: _____

Total allowable weight: _____

Payload that the vehicle can carry in **normal** ~~times~~period:

_____

B)

Equipment weight: 17,700 kg

Types of axle: _____
Total allowable weight: _____
Payload that the vehicle can carry in **normal** ~~times~~period:

_____

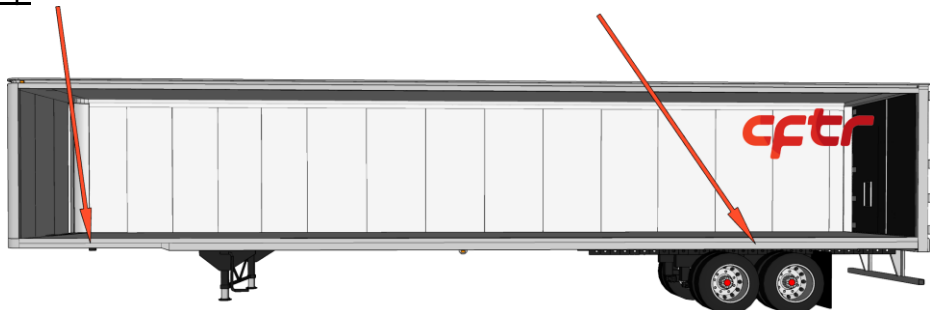**(7.4)**

C)

Equipment weight: 19,900 kg

Types of axle: _____

Total allowable weight: _____

Payload that the vehicle can carry during ~~a period of thaw~~the **thaw** period:

_____

Load distribution

1. For a semi-trailer, the weight of the load is distributed in two places: the <u>king pin</u> and the <u>centre of the axle group</u> of the semi-trailer.
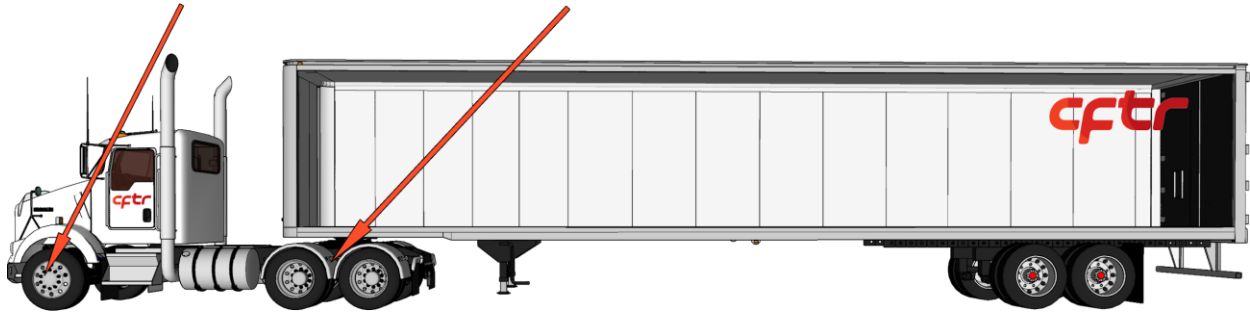

<u>IMPORTANT!</u> It is important to remember that the distribution is made between the centre of the axle group and the king pin, and not on <u>the entire length of the semi-trailer in the case of 53-foot semi-trailers.</u>

(7.4)
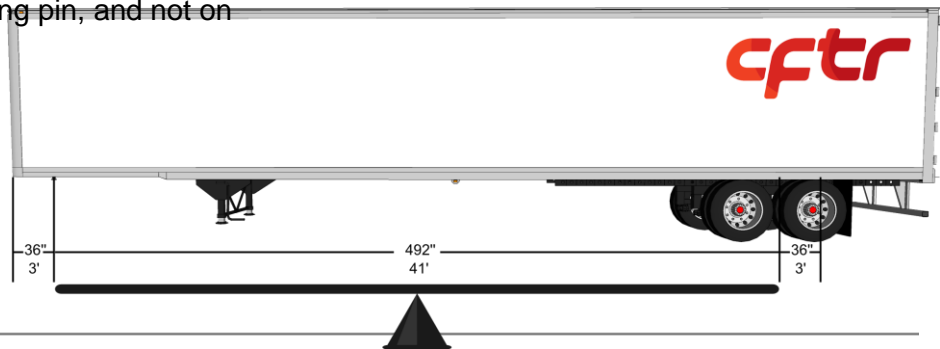
2. The load that is subjected to the king pin is in turn distributed in two places: between the front axle and the centre of the rear axle group of the trailer.

The load distribution is approximately equal in a two-axle semi-trailer. However, it changes greatly when you add axles.
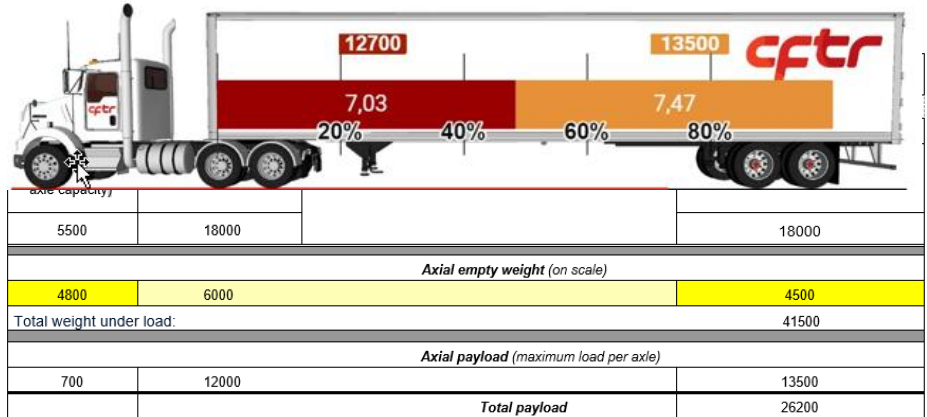
3. Now, you can get into some mathematical calculations that can get complicated or simply take the measurements and enter them into the form provided to calculate the load distribution.
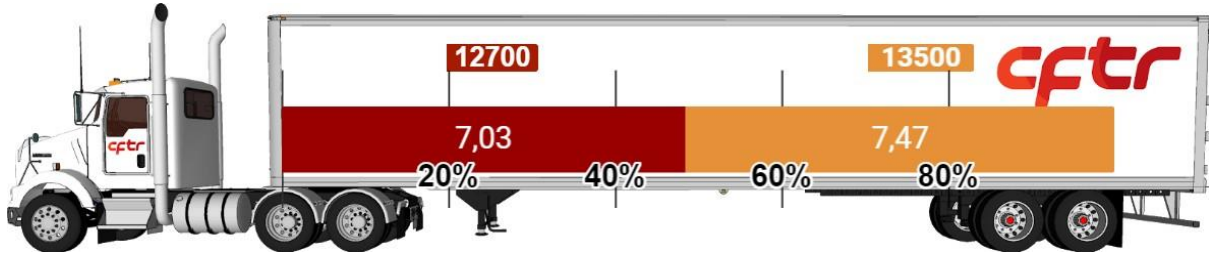
(7.4)

Here is how to fill out the form.

1. Enter the data in the yellow boxes.

	axle capacity)			
5500	18000			18000

Axial empty weight *(on scale)*			
4800	6000		4500

Total weight under load:			41500

2. Interpret the information

Axial payload *(maximum load per axle)*			
700	12000		13500
		Total payload	26200

Example 1: load of 24 pallets of 1,090 kg, for a total of 26,160 kg Wheelbase: 12.5 m
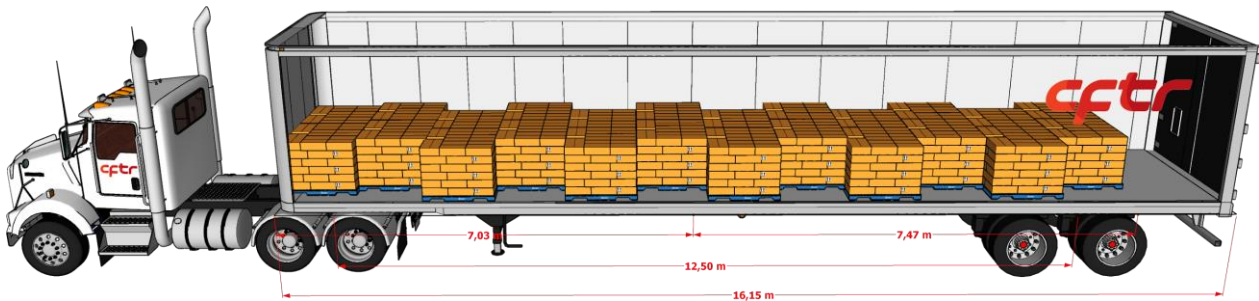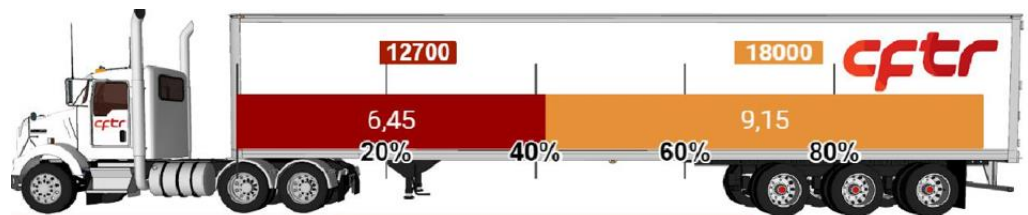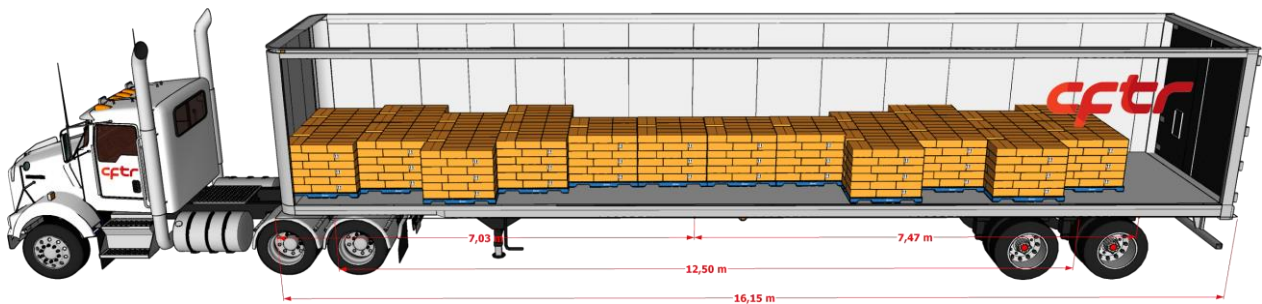

 (7.4)

Example 2: load of 24 pallets of 1,090 kg, for a total of 26,160 kg Wheelbase: 12.3 m

6,93 m
12,30 m
7,37 m
16,15 m

Example 3: load of 20 pallets of 1,300 kg, for a total of 26,000 kg Wheelbase: 12.5 m

7,03 m
12,50 m
7,47 m
16,15 m

Let's see the difference with a 6-axle equipment of category B.32

(7.4)

| 12700		18000
6,45		9,15
20%	40%	60%	80%

Wheelbase (distance between anchor pin and the centre of the axle group) — 12.5

Fill in the yellow boxes		N.B. All data for guidance only. Certain factors may influence the data.	
B-1= 5500 kg B-21 a B-31 (-1- depending on capacity axle)	B-21	*Axial mass permitted by regulation*	B- 32
5500	18000		24000
		Axial empty weight (on scale)	
4800	6000		6000
		Total allowable weight:	47500
		Axial payload (maximum load per axle)	
700	12000		18000
		Total payload	30700

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Interpret the information
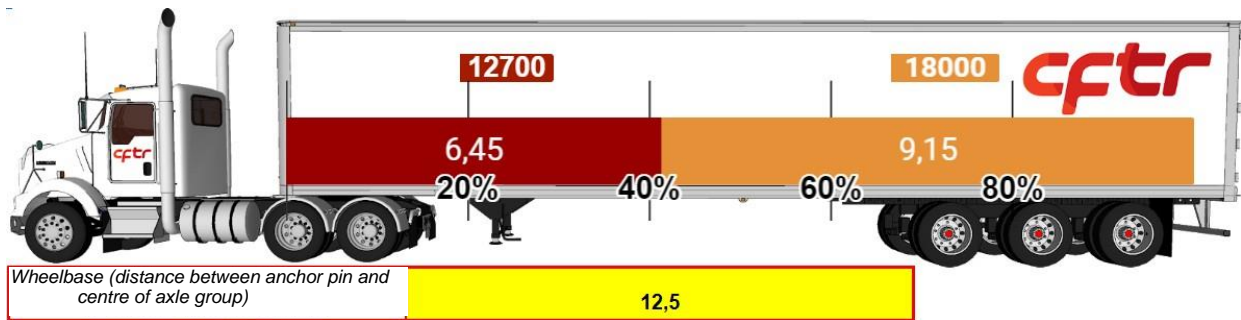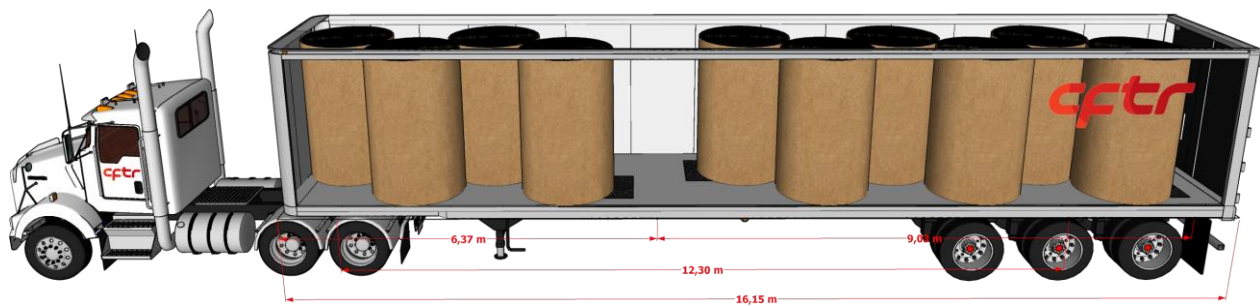

Example 4: load of 10 rolls of kraft paper weighing 3,000 kg each Wheelbase: 12.5 m
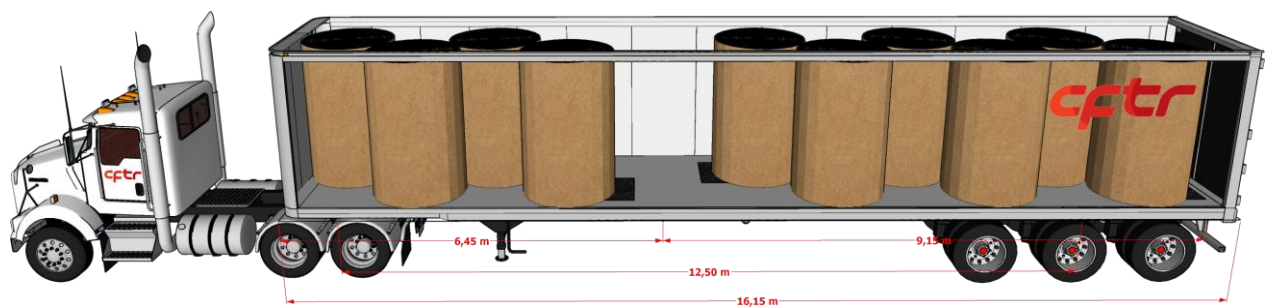
Load the first 4 from the front, while the last 6 should finish at the rear end of the 9.15 m.

___

Example 5: loading of 10 rolls of kraft paper weighing 3,000 kg each
Wheelbase: 12.3 m

Load the first 4 from the front, while the last 6 should finish at the rear end of the 9.03 m.

___

(7.4)

On flatbed semi-trailers, the load is sometimes arranged from the centre, rather than from the front and in an extended manner. In this case, it is necessary to place the centre of the load at the distance indicated on the sheet, from the king pin of the semi-trailer.

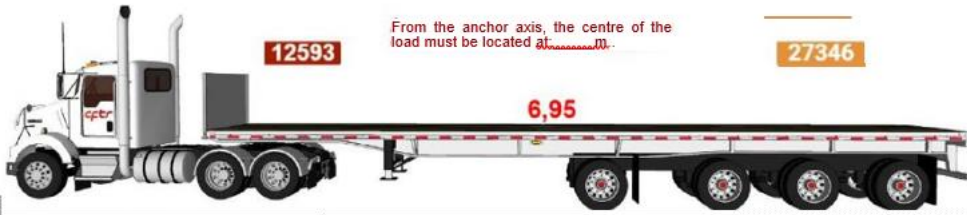Example 6: load of 1 container of 25,500 kg
Wheelbase: 12.5 m

À partir de l'axe d'ancrage, le centre du chargement doit être situé á :____ m.

13200   6.54   14480

Wheelbase (distance from anchor pin to centre of axle assembly)			12.5		
Fill in the yellow boxes			N.B. All data for guidance only. Certain factors May influence data		
			Axial mass permitted by regulation		
B-1= 5500 kg B-21 a B-31 (+ depending on	B-21				B- 21
5500	18000				18000
			Axial empty weight (on scale)		
4800	5508				3520
			Total allowable weight:		41500
		Allowable load	axle load (maximum load per axle)		
MO	12580				11480
			Total payload		27680

6,54 m

12,50 m

16,15 m

(7.4)

Example 7: load of 1 transformer of 38,500 kg

Wheelbase: 10.15 m

From the anchor axis, the centre of the load must be located at .... m .

12593   **27346**

6,95

Wheelbase (distance from anchor pin to centre of axle assembly)		10.15	
Fill in the yellow boxes		N_B All data for guidance only Certain factors	may influence the data_.
Axial mass permitted by regulation			
B-1= 5500 kg (+ depending on axle capacity)	B-21		B- 45
5500	18000		34000
Axial empty weight (on scale)			
4918	5989		6654
		Total allowable weight:	
	Allowable payload	axial payload (maximum load weight per axle)	
582	12011		27346
		Total allowable mass	39939

6,95 m   2500+   **3508**

10,15 m

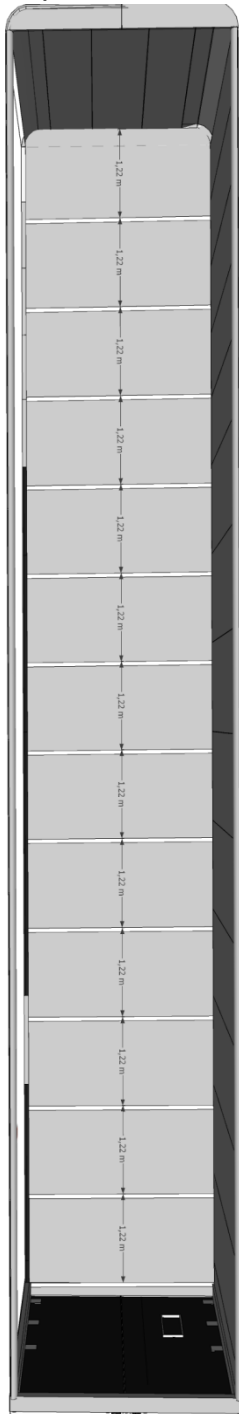**16,15 m**
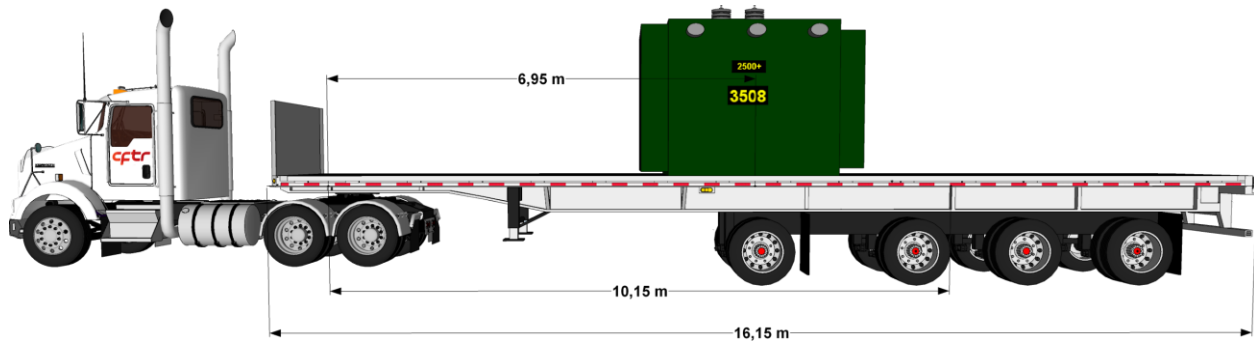
(7.4)

How will you arrange your load?

Exercise 1
B.1 = 5,200 kg
B.21 = 4,100 kg
B.21 = 4,200 kg
Wheelbase = 12.35 m
Load = 19 pallets of 1,400 kg each

Exercise 2
B.1 = 5,300 kg
B.21 = 4,300 kg
B.33 = 5,300 kg
Wheelbase = 12.20 m
Load = 21 pallets of 1,575 kg each

(7.4)