Interworld Freight
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Warehouse Setup

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OVERVIEW

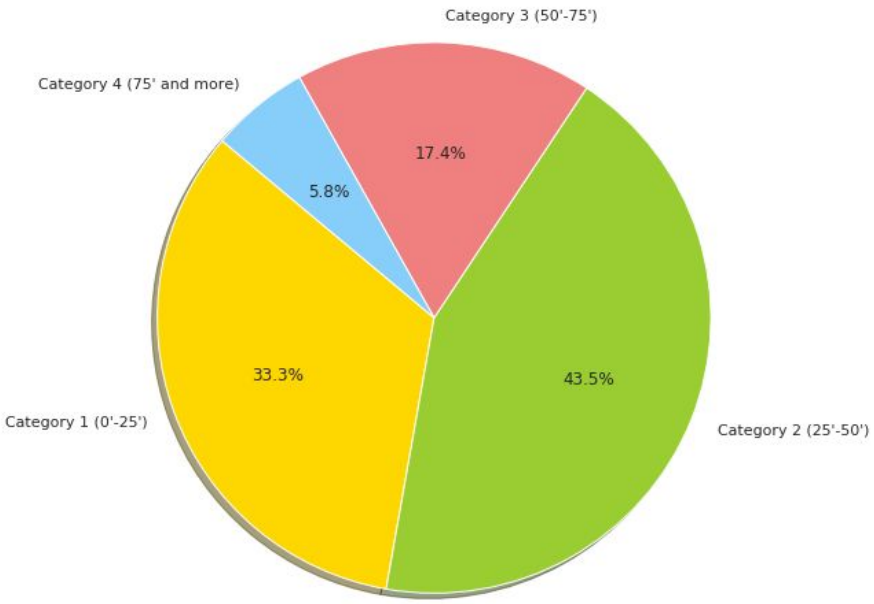
In this document we present a better alternative to the setup used in the warehouse regarding racks, levels and pallet spaces based on the height of the cargo that we have stored throughout the years.

We analyzed **261532** records that lead us to divide the cargo in 4 categories:

Category 1 = between 0' and 25'
Category 2 = between 25' and 50'
Category 3 = between 50' and 75'
Category 4 = between 75' and above

CURRENT DATA

This is the percentage of cargo belonging to each category taken from the dataset



The percentages of each category were discussed with our warehouse manager Juan Donado, who agrees that it is a valid representation of the actual cargo at our warehouse.

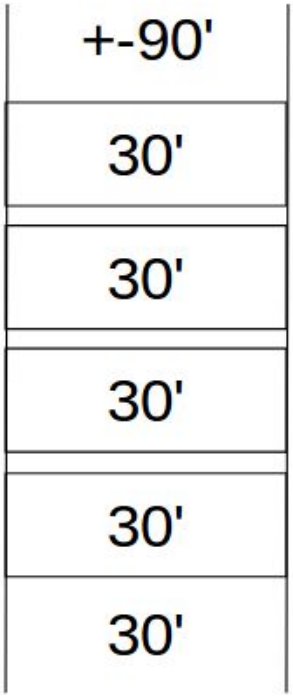
Some other interesting values regarding our current data:

- Minimum height: 10.08’
- Maximum height: 109’
- Average height: 37.65’
- Current amount of racks: 198
- Current number of pallet positions: 1540
- Rack height: 169’

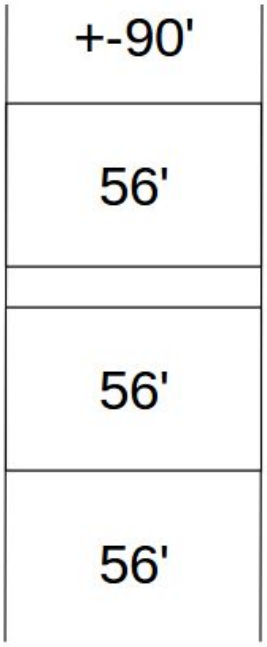
CONFIGURATIONS

Configuration 1

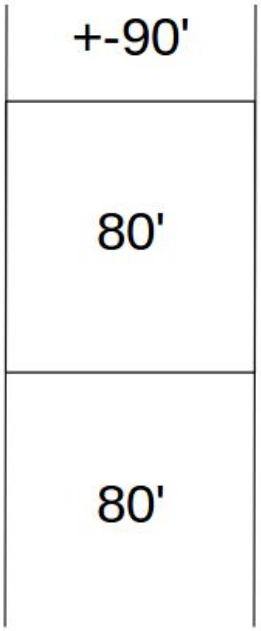
One of the biggest problems detected is that small cargo (category 1, about 33.3% of the cargo) is occupying bigger spaces, wasting a lot more space than what it actually needs, this distribution solves this problem.



Configuration 2



Configuration 3



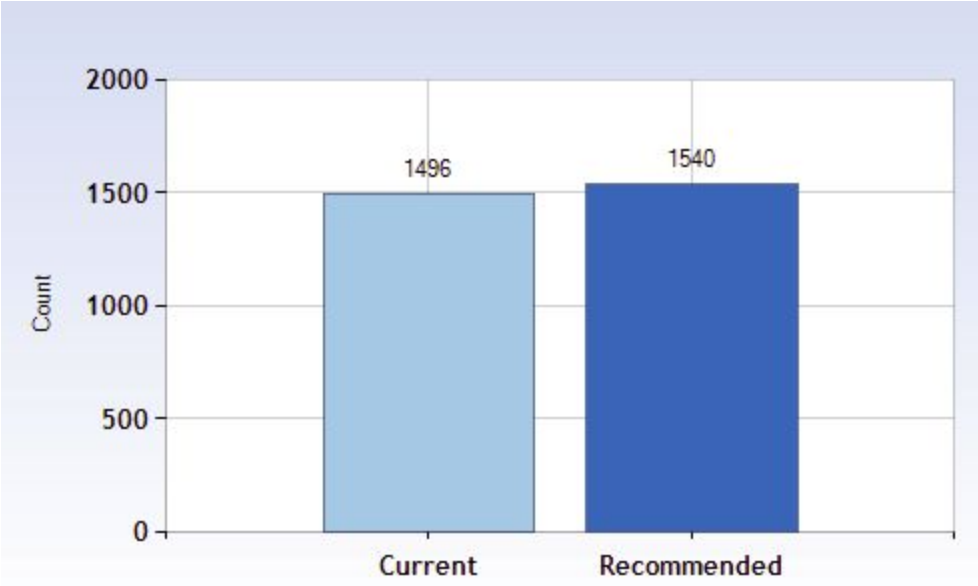
DISTRIBUTION

This distribution is based on the percentages of cargo belonging to each category found in our dataset.

Height Range	Category	Number of racks	Number of positions	Statistic Recomendation
0' - 25'	Category 1	40	440	396
25' - 50'	Category 2	48	528	528
50' - 75'	Category 3	24	264	220
75' and more	Category 4	0	396	396

EXPECTED RESULTS

This distribution is based on the percentages of cargo belonging to each category found in our dataset.



- There is an increase in the amount of available pallet positions.
- Even though the increase in number of positions isn't very relevant, the recommended distribution is more likely to match the heights of the actual cargo, taking better advantage of the available spaces and minimizing the amount of wasted space.

- The amount of spaces for category 4 (top of the racks), is way higher to the needed spaces, this gives us a good capacity for handling the margin of error.