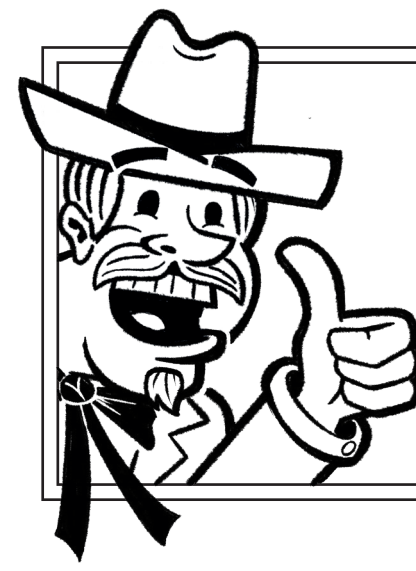# ALL ABOUT CONTROL CHARTS

How statistics can set your chicken farm to be a successful one

WHY YOU NEED CONTROL CHARTS

Control charts are visual tools used to monitor processes. They can detect possible issues of a production chain, allowing operators to take action and ensure consistent quality of the products. Here is my exclusive guide on how to apply one to improve your chicken farm's efficiency. Trust me, I've been in this business since 1924.

HOW TO BUILD ONE
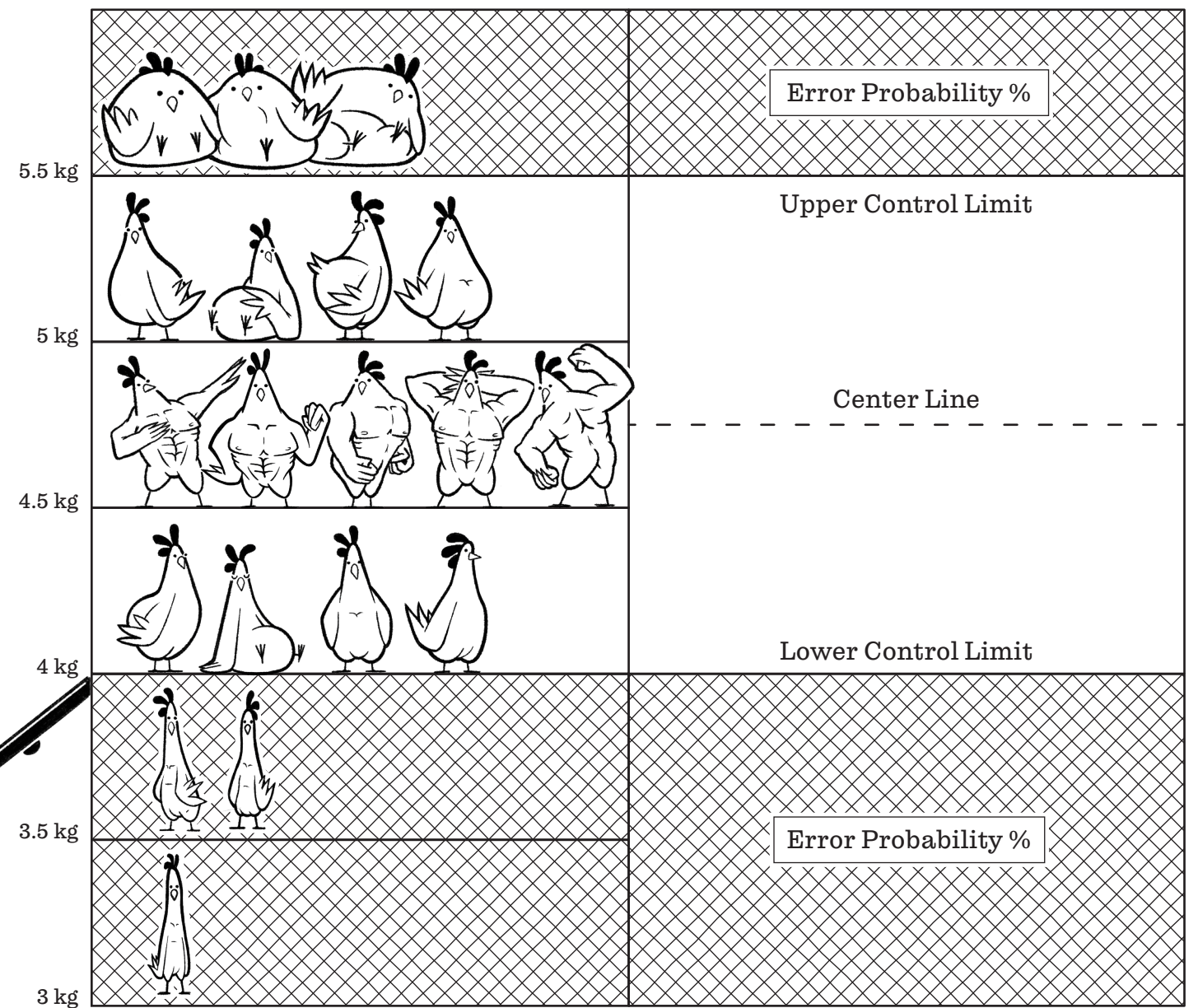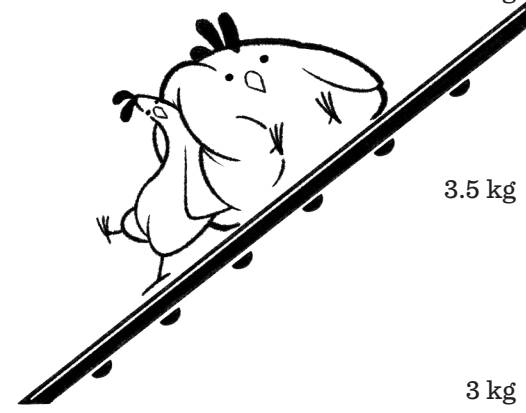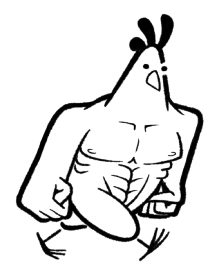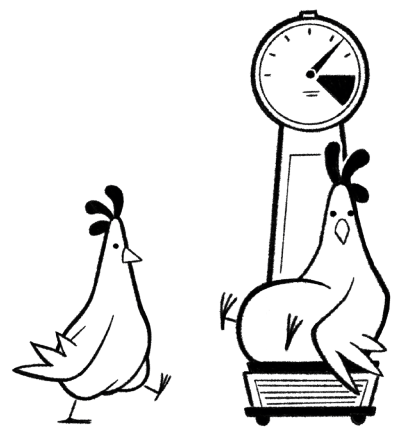
❶ LEARN FROM THE FINEST

You first need to select a sample of your production that satisfies your desired quality level. A sample of chickens that are healthy and ready to be sold will be your starting point of this first phase.

❷ CHOOSE A PARAMETER

Now you want to determine a feature that will allow you to quickly evaluate your production. From my experience in the poultry business, I know that the most efficient way to monitor the chickens' health is to keep an eye on their weight. Collect your sample's weight values and sort them out in pecking order so that you understand their distribution.

❸ SET YOUR GOLDEN RULE

Even though all the chickens from your sample are healthy, this might not be the case in your future production.

You want to set limits that exclude chickens that may not be suitable for the market, discarding a percentage of your production that is more likely to be sick, even in case of false warnings. Keep in mind that the higher your quality standard, the higher the frequency of warnings and the probability of errors.

- Error Probability %
- Upper Control Limit
- Center Line
- Lower Control Limit
- Error Probability %

(5.5 kg, 5 kg, 4.5 kg, 4 kg, 3.5 kg, 3 kg)

HOW TO USE IT

❹ LET'S GET GOING!

Now the chart is ready to be used to monitor your production! From now on your chickens' weights will be collected and displayed on the chart over time.

● In-Control Point

When a value falls inside the desired range, we say that it is "in control". When the graph shows a series of in-control points randomly distributed, it means that the process is stable and you are getting the expected results.

✺ Out-of-Control Point

An out-of-control point is identified when a data value point falls outside the control limits. In this scenario, the process is subject to some kind of unwanted behaviour (special cause variation), and it needs to be inspected.

✺ Unstable Trend

You can also have an out-of-control situation if the points are inside the thresholds. This happens whenever your data points start forming a pattern that is no longer random.
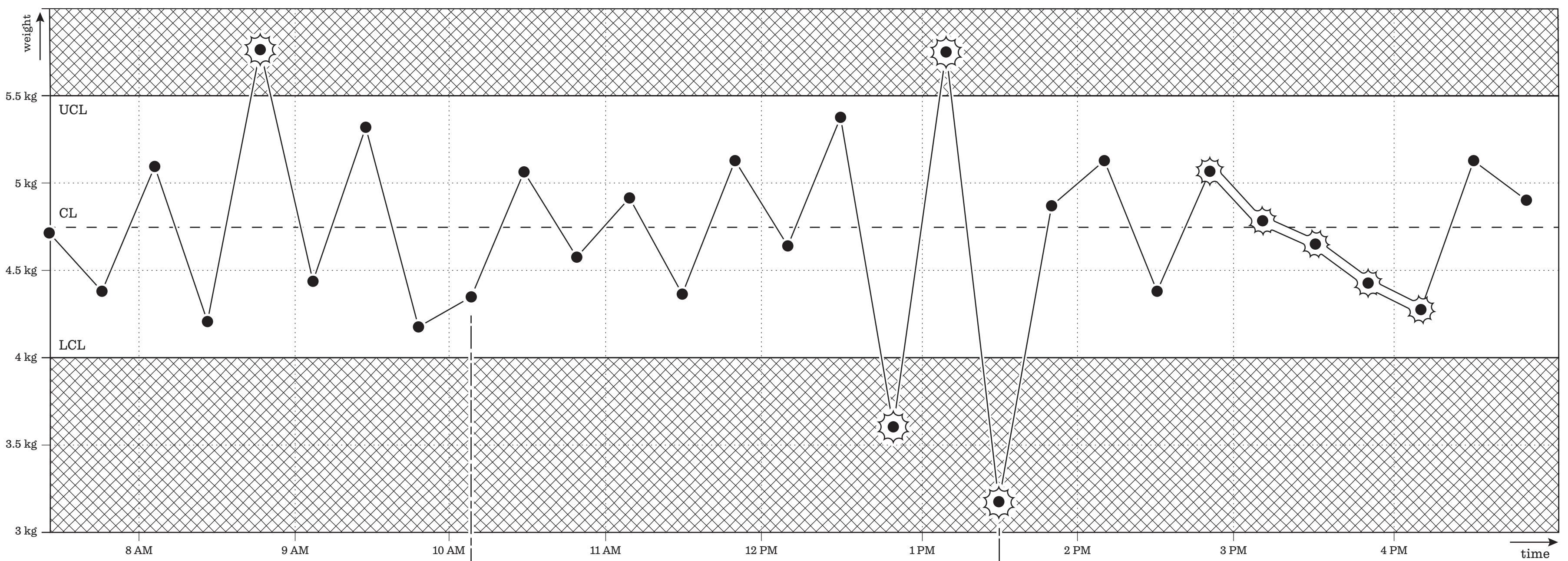
MEANWHILE AT THE FARM...

Always remember that the control chart doesn't show the actual health of the chickens, but only its prediction, based on the weight.

Missed Warning

There's a chance that a data point falls within the control limits when it should be out of the thresholds. The wider the distance between the control limits, the higher the chance of a missed warning.

False Warning

Sometimes there may be some false warnings: this happens when the chart shows that the process is not stable when it is. This error always ruffles a few feathers.

VISUAL EXPLANATIONS OF STATISTICAL METHODS

Control Charts

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