

# Tyranny of Steel

## Chapter 3

### Chapter 3: Introducing New Technology

Berengar continued his exercise routine for some time, taking small breaks to recover when he felt his heart rate rising too high. With a complete and total lack of modern exercise equipment, the tall yet dreadfully skinny young man was forced to exercise the old-fashioned way. This exercise regimen was modeled after the U.S. Army's PT standards. Albeit scaled down to a capacity in which his frail body and weak heart could handle.

As he continued to persevere through a task that was incredibly difficult for the feeble body he currently inhabited; Berengar vowed that when he was able, he would draft blueprints for free weights, kettlebells, and a bench press, which he would deliver to the town's smith and inquire about the feasibility of crafting such items. After all, the technological prowess of this civilization was far from what he would consider being advanced.

Lambert gazed upon his sickly older brother struggle to improve himself from a tower above the Castle's courtyard. A frown was spread across his face as his wicked eyes glared menacingly at sight. This sudden desire for self-improvement did not bode well for his plans. His anger only outmatched his disbelief.

After all, Berengar should be dead, the poison that Lambert had used was effective enough to kill a warhorse, yet somehow Berengar was still standing, healthier than ever. All his scheming had gone to waste. The debts he had acquired to assassinate his elder brother remained unpaid, and if he could not become the heir to his father's title, he would be unable to repay them, which did not bode well for his future.

However, if he were to attempt to use poison again, it would undoubtedly draw the suspicion of others, something he wished to avoid. If Lambert were to succeed his father and achieve his aspirations, he would need to devise a new assassination plot.

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An hour had passed, and Berengar was no longer capable of exercising. His first order of business was to bathe again and get rid of the sweat and grime accumulated over his body during his workout. The servants were perplexed as to why he desired to bathe twice in one day but followed his orders.

After cleansing himself once more, Berengar returned to his room, where he sat at his desk, took out a piece of parchment, and began to design blueprints for several of the early innovations he intended to make to the industry.

Though Berengar held limited authority within his father's land, he figured at the very least he could negotiate with his father about the implementation of such technology. If his father asked where he found such blueprints, he could simply say he acquired it from a trader from the far east. After all, similar technologies should exist in China during this time period. The earlier the Barony could mass-produce steel, the better it was for his plans.

The Barony of Kufstein was set in the Duchy of Austria. Mountains surrounded it, and a large tributary of the Danube river flowed through it, creating fertile valleys. It was exactly because of its geographic layout that the von Kufsteins could maintain their control over the resource-rich region. If not for the natural defensive barrier that surrounded the valley where the people dwelled, then more powerful families within the Empire would surely attempt to seize the region for themselves.

After some time, Berengar had finished the blueprints for one of the most important inventions in steel production. Without it, the Industrial Revolution in his previous life's timeline would have never transpired. It was known in his previous life as the "Bessemer Converter" or the "Bessemer Process." Through this process, one could manufacture 3-5 tons of steel in a matter of 20 minutes.

The Bessemer process essentially functioned by removing impurities in the iron by oxidation. It utilized airflow through the molten material to achieve this. If one lined the interior of the converter with dolomite or limestone, they could produce a greater amount of slag as the byproduct, which could be used as a cheap phosphate fertilizer. Thus this technology aided in not only industrialization but also agriculture.

All of the machine components could be manufactured by a late medieval society, and either horse or waterwheel could power it. Obviously, as technology advanced, he could improve it to be powered by steam engines. However, that was a distant dream; he needed an early model built for now. High-quality steel was currently a rare commodity; with the introduction of the Bessemer process, he could achieve many things with it, the uses for high-quality steel were endless.

Ultimately Berengar would require a Blast Furnace to convert iron ore into pig iron which was then converted into steel by the Bessemer process. Though in this day and age, the Blast Furnace should already be invented. He was certain a resource-rich region like Kufstein would already have one in its local town. If they didn't, he would simply convince his father to build one alongside the Bessemer Converter. He developed a second set of blueprints for the Blast Furnace just in case there was not already one present in Kufstein.

After finishing his blueprints and letting them dry, Berengar picked up the pieces of parchment and carefully held onto them as he approached his father's study. The sun was just beginning to set as he knocked on the sturdy oak doors. Shortly afterward, he could hear the deep voice of his father's reply.

"Come in"

Berengar took a deep breath and exhaled before entering his father's study. Inside the room was a large desk where his father sat behind, going over paperwork. A small library within the room covered the walls, mostly filled with books of direct importance to managing the realm's affairs.

A small oil lamp was lit and sat on the desk, illuminating the increasingly dim room, and more importantly, the parchment on which the Baron was writing upon. Sieghard did not even shift his glance to his son as he focused entirely on his paperwork.

"This better be important..."

Berengar cleared his throat and presented the documents to his father, which he had spent most of the afternoon drafting.

"I'd like you to take a look at these. It is of dire importance to the production of steel within our realm."

Sieghard paused as he heard his son's request and placed his quill down upon the desk. He looked at his son with an interrogating gaze as if questioning whether his time would be wasted by looking over the documents. Nevertheless, he grabbed ahold of them and looked them over once or twice before placing them down and sighing.

"What exactly am I looking at here?"

Sieghard may have been an efficient statesman and a renowned warrior, but he did not mind engineering. As such, he needed an explanation for the blueprints.

Berengar gulped down the saliva which had accumulated in his mouth and began to preach to his father about the beauty of this new invention.

"Father, with this device, we will be capable of producing vast amounts of high-quality steel in a short period of 20 minutes. Not only that, but the byproduct of this device will be able to act as an efficient fertilizer to increase agricultural production."

A look of shock appeared across Sieghard's face as he went over the blueprints one more time. Though he did not fully understand what he was looking at, the prospects in which Berengar boasted about were simply too good to ignore. However, a sudden question appeared in his mind as he voiced his concern.

"Where did you acquire this?"

Berengar was expecting such a question, and as such, spun a large tale of how he encountered some traveling merchant from the far east, who had traded the blueprints with Berengar for a small fee. Though his father was skeptical of this claim, he had heard the stories of how advanced the far eastern countries were and thus decided to act upon Berengar's request.

"Alright, tomorrow I will summon the best engineer in the region; if he can confirm that this technology is legitimate, then I will implement it as quickly as I am able."

Berengar smiled and bowed to his father respectfully; truthfully, this had gone better than he had thought.

"Thank you for listening to my request, father."

With that said, Sieghard picked up his pen and returned to his paperwork

"If that is all, then you are dismissed."

Berengar bowed once more to the proud Baron before departing from his room with a large grin spread across his face. The introduction of the Bessemer process and the Blast Furnace were just the first phases of his plans for modernization. His next goal would be to implement the four-field system and basic irrigation. Something which he would not be able to explain by trading with merchants. Thus, he would have to take time to visit the fields and converse with the peasantry.

Yet those were his plans for the near future; for now, he intended to rest, his body was aching from the intense exercise he had forced himself through this morning, and it would not get any easier going forward. After stopping by the kitchen for a brief snack, Berengar went back to his room to rest. Before he knew it, he had actually drifted deep into sleep, dreaming about his past and current life and the events that unfolded.