

Machines in Motion

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Originally published in Hybrid Fiction, September 2020

Eszter spent her first battle in breathless fear, not of some errant shell or cannonball, but of the engineers. She followed them through trenches choked with smoke and rust-red mud, expecting them to see through her at any moment. Sooner or later, they would realize the new girl wasn't so clever after all. Sooner or later, they would know what she was.

She held the toolbox steady and watched the three engineers work on the humanoid hulk of a fallen automaton. Kúlish buried his hands wrist-deep in the engine's pumps and ducts, his trim goatee wet with condensed steam. Nahlah crouched, her dark wiry body twisted as she angled a screwdriver up into the back of the automaton's neck. Corporal Lujza sat to the side with an armor plate in her lap. Smoke and soot painted her coat the same color as her hair. A scowl creased her face as she laid new silvery thaumic wires into the charred armor plate.

Nahlah caught Eszter's eye and offered her a screwdriver. Eszter rose, and then froze as Lujza grabbed her arm. Lujza shook her head and shoved the armor plate into Eszter's hands. Her mind went blank, but her body was already moving. She tucked the armor under her arm and grabbed a wrench from the toolbox. She had only glanced at the fasteners that would join armor to chassis, so she had to pluck out a handful of bolts and hope she had guessed their sizes correctly. She realized she had no prayer for this, and the thought sent a rush of worry and exhilaration up her spine.

Kúlisch lifted his hands clear of the machine. Nahlah leaned across and slid her screwdriver deep into a gap between engine and chassis, her glove braced against gears. She turned the screw, grimacing in concentration. Machinery clicked, engaged--and jumped. Nahlah yanked off her torn glove and wrapped a rag around bloodied fingers. She stumbled away, and Eszter's shock dissolved into a guilty exhalation of relief.

Eszter wrestled the armor plate into place, and bit back a curse as metal rattled against metal. She shoved down the plate, then forced herself to let go. She dropped in the bolts and wrenched them tight. Lujza elbowed her aside and connected the thaumic circuits with a few final lengths of wire.

Kúlisch snapped a flag in front of the machine's lenses, and the automaton rose: seated, then kneeling, and then standing. It swept smoked-glass eyes across the engineers, then raised and lowered the small-bore cannon of its right arm. Eszter strained to hear its engine, but the cacophony of battle muted it as surely as every other sound.

The automaton took position alongside three of its kin, and infantrymen formed up behind. Eszter tried not to read the faces of the soldiers in their mud-stained white coats and once-blue breeches. Instead, she watched the engineers. They were both staring at her: Lujza

with grim satisfaction, Kúlish with raised eyebrows. Eszter lowered her gaze, gathered the tools, and followed the engineers to their next corpse.

My hands won't shake next time, she told herself.

#

The sunset light stretched out their shadows ahead of them as they approached their corner of the sprawling camp. Eszter watched Lujza's stride, the way the woman's boots slapped the mud on every step, the way she gained her speed from stride instead of haste. Someday Eszter would figure out how to copy that fearless gait.

Lujza glanced backward, and caught her stare. Eszter froze, and the two of them halted as the other engineers moved onward. Once they were alone, Lujza said, "You saw what I did for you back there?"

Eszter glanced down at her hands, her skin raw but whole. "Thank you for stopping me. She was trying to give me the dangerous work, wasn't she? I didn't realize."

"If you have to reach in deep, do it before the engine's fixed. Save your hands for something worthwhile." She narrowed her eyes. "You did well today. I should apologize," she said without a trace of regret.

"For what?"

"For being surprised. I should've expected you to be a fast learner. Jews are supposed to be cunning, aren't they?"

Eszter's blood halted in her veins. There was nobody close enough to overhear, but still she whispered. "Don't speak of it, Lujza. Please! You mustn't let anyone know."

"Why not? You think the army doesn't take Jews? No, I suppose it doesn't. Their loyalties don't lie with Hungary, after all. But our squad has three foreigners and three women in

four people -- nobody cares where engineers come from." She smiled like a hungry woman set before somebody else's meal. "Nobody cares unless someone complains to the officers."

"But you wouldn't do that." Eszter buried her hands in her greatcoat pockets, so Lujza wouldn't see them clench into fists.

"I brought you here, why would I get rid of you?" Lujza's hand descended on Eszter's shoulder. "Remember that." She turned away, leaving a smear of red mud on the shoulder of Eszter's coat.

Eszter's stomach tightened at the thought of following meekly behind Lujza. *She doesn't upset me*, Eszter told herself. *I just need a minute to stretch my legs before dinner.*

She turned aside and meandered among the grey canvas barracks tents. She scarcely noticed the soldiers until a voice called out, "Hey, engineer! Come sit with us!" She instinctively reached up to adjust her kerchief, but all she could do was pull her peaked cap more tightly over her hair.

She found the engineers around their cookfire. Kúlich prodded a pan full of meat, and Lujza opened a flask of liquor. Nahlah sat across the fire, bandages wrapped around two of her fingertips.

Kúlich spoke to Lujza in a Slavic accent, maybe Polish. "You haven't told Captain Sipos about the new girl yet, have you?"

Lujza shrugged. "I'll tell him when the battle's over. For now she's got Bertók's old tent."

Nahlah studied Eszter with a smile like a sugared lemon. "Glad you could join us, new girl." She flashed her bandaged hand. "Don't worry, you'll get your scars soon enough."

Eszter searched for the right words, but she got no chance to speak them. Lujza grinned like a lion defending her kill, and said, "It took you a month to measure bolts that fast. Keep on getting yourself cut up, maybe the surgeon will marry you and get you out of our hair for good."

Nahlah laughed sharply, and she and Lujza began to banter like husband and wife who hated each other slightly less than they hated the thought of divorce. Kúlich offered the bottle to Eszter. While he was sitting down, she could hardly tell he was a few inches shorter than her.

He said, "You stuck through your first battle, good start for an assistant. Brave and stupid, two fine qualities for all of us in the army. Where'd she find you?"

She didn't find me, I found her, Eszter wanted to say. But Lujza would hear it, one way or another. "I lived in Budapest my entire life. And through the siege."

He lifted his eyebrows. "And?"

Eszter shook her head. "And that's all. Nothing left for me there." Nothing left she would accept, at least. The liquor burned her throat like acid and apricots, the way pálinka should.

"All right, point taken." He shared a knowing smile. "But if you don't want to talk about your past, you need some good lies to tell."

She traded the bottle for a hunk of bread and a warm plate of canned beef. Her best meal in months, but she clutched the knife until her fingers hurt. *I can endure this*, she told herself. In the last year, she had starved, she had lost her brother, she had abandoned her fellow Israelites; what more did it cost her to live without pride? As long as she could stay among the machines.

The fire grew low, conversation slowed, and Eszter slipped off to her tent. Alone at last, she shed her coat and threw herself onto dead Bértok's cot. Exhaustion saturated her bones like metal fatigued beyond its limits, but her mind kept ticking. The bolts still rattled in her hands; Lujza's threats and promises still loomed over her head. Eszter rolled onto her side. If she

wanted to sleep, she would need to finish one more task, despite the risk. After all, it was Friday night.

She fished two stubs of wax from her meager pack and lit the candles, her body bent over the flame so no one would see the light. This wouldn't be the first time she worked through Shabbos, but in the old rhythms of her whispered prayer, she might find a little bit of rest.

#

At dawn, Eszter's squad joined the mobile artillery on the south flank. Six-wheeled carts launched shells into the distance, shrouding the ground with sulfur and smoke. Every fifteen minutes, the guns would roll themselves to a new position before the French artillery could find their range and return fire. Usually, it worked.

The engineers let Eszter carry tools, tighten connections, and watch them do the real work. She tried to understand every choice they made. Why won't an 8/5 gear power a three-inch pivot joint? How long do you have to wait between laying down overlapping thaumic wires? How do you identify the replacement modules for the automata's cognitive mechanics? She memorized each question so she could scavenge for answers later among Lujza's leavings.

Another squad relieved them at midday, and the engineers divided up the burden of materiel worth returning to camp. Lujza argued with Nahlah over a disabled mortar, while Kúlish set off with an empty coal cart and the temptation of a moment out from under Lujza's eye.

Eszter hurried after him. "Can I--" She halted, her voice distant and muffled. No, her ears exhausted from the battle. She tried again. "Can I try directing the cart?"

"Of course!" Kúlish beamed. "Here, take the baton, go on. Wave it like this if you want the cart to go faster, like that to slow down. To make it turn, twist like this and then point."

Eszter rolled the baton in her hand. It was a hollow metal tube inlaid with the silver lines of thaumic circuitry. Back in Budapest, Lujza had said that thaumic science was to magic, as chemistry was to alchemy. To Eszter's eyes, the silver plexus was a book written in a language she could not yet read. This, at last, was a Talmud worth deciphering.

Kúlisch said, "A lot of girls try to sign up just because we'll take them. Chasing after some soldier boy, usually. But those girls don't pay attention like you, and Lujza talks like you have a real knack. Think you might join us for real?"

Eszter's heart coiled with hope, a clock wound full. "I will. I've made my choices. And like I said, there's nothing left for me back in Budapest."

"Ach. What happened?"

The mainspring in her chest unwound, its power dissipated. She could not mention the pogrom that took her father, nor the humiliations her brother had refused to endure. But she could tell a piece of truth, and make it sound like the whole.

"Our apartment building burned down at the end of the siege, after the French diggers came up."

Kúlisch grimaced. "I'm sorry to hear it. Still, at least we have the frogs on the run now. It's been fifty years, but who knows? Maybe Napoleon has finally run out of steam. Here, slow the cart down, the depot's right over there."

Eszter reoriented the cart, and after a few tries she sent it rolling toward the coal depot. Kúlisch reclaimed the baton and led her among the quiet tents.

She asked, "Can I really join like this? Don't automaton engineers need some kind of training?"

He shook his head. "It's like working in a factory. Start next to someone senior and learn as you go."

"Even thaumics?"

"Ah, for that you'd need real training. A year, Lujza says. Looking to follow in her footsteps, are you? You may well have what it takes, but you'll have to start at the bottom with us. Don't worry. If I tell the captain you're good with a wrench, that'll be enough to get you started." He swept an appraising look across her face. "I'm glad you're staying. A girl like you would brighten this company up a bit. You're a pretty girl, and an honest one too. Not like some people we know, yes?"

Eszter's heart beat faster, for more reasons than she could name. "I'm sorry, Kúlich. I'm not looking for something like that right now. I just want to be an engineer."

He frowned. "You don't have to obey Lujza, you know. She's only a corporal." He chuckled, shook his head. "Whatever she told you, forget it. I'll put in a word for you with the officers. They won't let us fraternize with soldiers, but they can't keep two engineers apart. My tent's a lot more comfortable than a dead man's, I promise." He took a step closer and looked up at her with his jaunty smile.

Eszter glanced around at the maze of tents, empty of anyone who could hear a shout for help. She extended her arm, but she couldn't bring herself to push her hand against his chest. "Please, don't. You've been kind to me, but you don't know me."

Kúlich dipped his head. "Well, fair enough. Perhaps I'm getting ahead of myself. I hope I didn't offend you." He took a step back and offered a trim little bow, without ever losing that confident smile. "Consider my enthusiasm as a compliment, yes? And if you ever--"

"Kúlisch, you pint-sized bastard!" From thirty feet away, Lujza's voice sliced through the echoes of distant battle. The stout older woman strode toward them, her uniform spattered with coal dust and blood.

Kúlisch turned his smile toward Lujza. "Corporal! Is something wrong? I hope that mortar didn't bite you, I warned you about the bolts."

Lujza shoved him away from Eszter. "Don't play games with me, you six-inch shit. Keep your jealous little hands off of her."

"Calm down, Lujza. I'm not bothering her. Tell her, Eszter. We were just talking, that's all, right?"

Ezster opened her mouth to speak, but the answers fought each other in her throat, and no sound emerged.

Lujza slammed her fist into Kúlisch's stomach, and the air rushed from his lungs with a grunt. Lujza crossed her arms and watched him gasp for breath and then straighten.

He worked his jaw as if a splinter of bone had stuck between his teeth. He glanced at Eszter and then let his gaze fix on Lujza. "My apologies. Lujza."

Eszter dropped her hand from her mouth before Lujza could see it. Lujza turned away from Kúlisch, grabbed Eszter's arm, and guided her away.

Lujza said, "If anyone talks to you when I'm not around, you tell me, understand? Come on now, girl. Put on your gloves, we have scrap duty for the afternoon. You can ask me a few questions while we walk."

The engineer's hand on her elbow made Eszter feel safe, like a treasure under lock and key. *But I need to walk at my own pace*, she told herself. She pulled her arm free. Lujza maintained her stride, and Eszter had to hurry to keep pace.

Lujza glanced back and smiled like a child eyeing an errant marble. "Don't get lost, girl."

A dozen memorized questions hung on the tip of Eszter's tongue, but she held them back. More important than any scrap of knowledge, she needed to make sure that Lujza wouldn't tire of mentoring her.

"Thank you for your help back there," Eszter said. She probably even meant it.

#

The boneyard was a wide low heap of scrap and riches, the size of a house smashed into kindling. Eszter took a spot at one edge and began to sort. Again and again, she took a hunk of mangled metal, studied it, tested it, and placed it one of her own little piles. Occasionally she found a serviceable mechanism, or a fragment inlaid with intact thaumic wires. More often, she pried apart broken machinery and extracted some salvageable component, an unbroken gear or piston. Even pieces with French measurements could be pressed back into service. Mostly, she found scrap metal, and tossed it behind her so a conscript could cart it away to be melted down in some distant foundry. The scrap, at least, might make it back to Budapest.

Lujza sat ten yards away, but the distance might have been ten miles. Eszter worked at her own pace, her gloved hands deep in the guts of the fallen. Every shattered mechanism gave her an excuse to study or to wonder. A pair of warped pistons let her test the interplay between form and friction. A broken gear train outlined the story of all its lost and scattered pieces, and all the things she might someday make it do. At one point, the words of the shekahcha rose unbidden into her head, a sentence of thanks for the world's beauty. She could not recall when last she'd said that prayer.

"You the new girl who's been following Squad Eleven? Eszter something?" An unfamiliar voice broke her reverie. Eszter registered the late-afternoon light, the sound of distant

shells, and the sullen young man in a sergeant's uniform. He rolled a truncheon in his hand, back and forth.

"That's me, yes. Can I help you?" *I have no reason to fear*, she told herself. *My secret is safe, it has to be.*

"Captain Sipos sent me to get you. Come along now." He beckoned with his truncheon.

She glanced toward Lujza, but the older woman shook her head and returned to her work. Eszter was trapped against the iron, with place to go save where this sergeant might take her. She stood, and followed the sergeant back into the domain of men.

#

The captain's tent had four poles, and room enough for bed and office both. Captain Sipos sat at a table strewn with notes and blueprints. He had a bushy face, with sideburns and moustache, pierced by clear blue eyes. "Sit," he said, without looking up from his writing.

Eszter found two chairs, but one had Kúlish already sitting in it, his arms crossed. He offered her an apologetic little smile.

Sipos handed a note to his orderly, who stepped outside and left the three of them alone in the tent. Eszter tried to sit up straight. She wished she had cleaned some of the mud and grease from her clothes. She wished she had a uniform that fit.

Sipos said, "Specialist Lengyel here says he was attacked by one of the other engineers. By Corporal Lujza Rigó. He said you witnessed it. Did you?"

The two stares made Eszter's heart curl up like a snail. "They had a disagreement, sir, but it didn't seem important. I don't know what to say."

Sipos said, "Specialist Lengyel, back to work."

Kúlisch raised his eyebrows and glanced at Eszter, but she focused on the captain's brass buttons. The tent flap rustled, and then fell quiet.

Captain Sipos said, "Soldiers can brawl if they want, but I'm in command of engineers--a gaggle of women and undesirables who need a sterner hand. I decide what's important here, girl, and the important things are these." He ticked off on his fingers: "Discipline among my engineers. Knowing whom I can trust, and whom is unworthy of service. And your answer to my question."

She started to speak, and then halted. Kúlisch had treated her kindly, but for his own motives. If she wanted to rid herself of his insistent smile and insistent questions, she held the tool to achieve it on her own.

"They argued, but she didn't hit him, sir. He's lying." A bitter taste rose in the back of her mouth. She swallowed, and it was gone.

"Very well. I'll do something about this." He wrote another line, signed his name, and then sealed the letter. "But I'm not finished with you. Come closer." He looked her up and down for the second time. "So you're Lujza's latest foundling. There are things I tolerate from that woman, because she's one of our best engineers. She picked you up in Budapest, yes? I grew up in the old town, up the hill in Buda. Where are you from, girl? And what's your full name?"

"Eszter Révay, from Prater Street," she lied, a name and address from outside the ghetto.

"Prater Street? My favorite cukrászda was just around the corner from there. Did you go to the Széchenyi? You have to stand with Jews sometimes there, there's no avoiding it so close to the ghetto. But you'd hardly notice, the bad ones stay behind their walls. Besides, it's worth it for the krémes. You never went? Ah, a pity."

He gestured her back to her chair. "Our little troublemaker Kúlish said you have some real talent. That you could make a good engineer someday, maybe even in thaumics. Is that what you want?"

"It is, sir." A burst of heat and lightness spread through her chest like an engine's first breath of steam. "More than anything."

"I assume you need the army to pay for your training, so if you want to learn thaumic engineering, it'll be a five year enlistment." He shook his head. "You don't know what you'd be getting yourself into, Révay. You're young, you're polite, you're pretty enough, and evidently you're smart; you can do better than waste your youth in oil and mud. Save yourself some callouses, go back home to your family. Besides, if I let you sign up, you'd never get to try that krémes."

Krémes. A pastry she could never afford, from a city she might never see again. This question, at least, she could answer honestly.

"I wouldn't anyway, sir. At the end of the siege, a lot of the diggers came up in the Erszébetvarós ghetto. There's not much left of the neighborhoods around it. And my family is all in the army or gone."

Sipos put a hand against his face, his index finger pressed against the hollow of one closed eye. He took a deep breath, then lowered his hand and started writing another letter.

"Well, if you're certain, I'll keep you on as an assistant until we've pushed the French back past the Balaton. Then we'll send you north for thaumics training. Best of luck and God bless, Junior Specialist Révay. Hungary and the Coalition could use more girls like you. You're dismissed."

Eszter stood up, but a knot tightened in her stomach. Lujza would hold so much more power, now that Eszter had earned a prize worth losing. The walls of the ghetto loomed around her still.

"Sir." Eszter swallowed, her mouth dry. "There's something else, if you have a minute?"

Sipos' pen paused above the paper. "Make it quick."

"It's my squad, sir." She spoke slowly, trying to plan one step ahead of her words.

"There's a reason why Kúlich wanted to get Lujza in trouble. I think they used to be lovers, but now he's with Nahlah, the Arab woman. If you discipline Kúlich, it'll put those two at each others' throats. Or mine, now." *Truth is the seal of the Holy One*, the sages said. But she would not let guilt stop her tongue, not when one more lie might save her.

He pointed his pen at her. "This is why I care so much about how my engineers behave. I was afraid your squad might fall into such things after Bertók died. But if they're just jealous, you all can sort it out yourselves." His pen descended and scratched out a word from his note. "Don't waste my time, Révay."

The words clicked into place like a bolt into its fastener. She could forge the truth, and her heart, into tools of their own.

"It's not just bad moods, sir. Lujza's trying to ruin me. She's started spreading rumors, making up lies. Telling people I'm a Jew."

"I see." Sipos frowned. "Well, perhaps it's time to split up that squad up after all. I'll make sure Lujza knows she won't get away with any rumor-mongering." He crumpled up his letter and started anew. "Go get your things, then give this note to Lieutenant Orosz. He'll find a place for you."

#

Eszter stood outside Captain Sipos' tent as the cannons and sun faded for another day. Back home, in her burned-out apartment and the shattered ghetto, it would almost be time for havdalah. The end of Shabbos, the border between the sacred and the mundane, between Israel and the nations of the world. The cycle of another week, beginning anew.

She could see her tent from here, and she spent a few moments watching a nameless figure start a cooking fire. If she did not return to that tent, she could escape the lot of them.

She would have to abandon what little she possessed: some threadbare old clothes, a tin of friction matches, and two stubs of wax.

It's better this way, she told herself. I want to bring nothing with me.

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