

# A Lineman For the Country

## Dave Freer

The Thuringen Gardens was, as usual, dense with people. After collecting his first priority at the bar, Dougal Lawrie looked about for his second priority: something to sit on that wasn't a saddle. The only empty spot he could see was at a small corner table with a solitary American at it. Dougal could tell that the man was an American by the teeth and the horn-rimmed spectacles. Well—what you could see of the teeth. He had a moustache that would have looked fine on the hind end of Shetland pony.

Dougal's blue eyes took in the scene. It was a case of stand or sit over there. He decided that the rotund morose-looking fellow was either a fighter or, more likely, a windbag. Well, the former didn't worry him, and he'd always found that he could shut up a bore.

He walked over to the small table. "I'll be sitting here then," he said. No point in delaying a fight if there was going to be one. He was tired. It had been a long ride from Halle to Grantville. He'd been on the road for two days. Then he'd had to stand around while Colonel Mackay read the messages, and hope to heaven he wouldn't be sent off again tonight. Anyway, with beer at that price he wouldn't be staying long. Grantville was a boom town and bar prices reflected it.

The solid occupant nodded. "Can't stop you."

Dougal had none of Lennox or Mackay's awe for these Americans. Some of them were doughty fighters, to be sure. Their firearms and devices were near miraculous. But he, Dougal Lawrie, was a Supplicant, like the rest of the *Clann*, even if he had somewhat lapsed in his church-going these days. Too much respect bordered on worship. The covenant made it clear: Worship was due to God and no one else. And after all these years in foreign wars: respect was something you earned. If this American got too talkative he'd give him short shrift. Anyway he had things to think on, and he was looking forward to just relaxing. Being a dispatch carrier in troubled times and places meant most of your attention was focused on the countryside. There was no chance to let your guard down. He'd done that once. Damned near been killed for his stupidity.

After a few minutes of silence the American said: "Well, aren't you going to tell me how wonderful our guns are?" The American's accent was particularly impenetrable, but Dougal was good with languages.

Dougal took a pull at his beer. "Nae. They canna ride dispatches." That should shut him up. He wanted to drink in peace and not sing praises to the wonder of sniper rifles. He'd heard enough of it in the barracks. The average trooper didn't understand that it took more than guns to win wars. It took the movement of men and materiel. And that rested with men and horses.

The slow smile spreading over the face of the American told him he'd guessed entirely wrong. "Well, maybe you Scots aren't all damned fools."

This was fighting talk, even if it was said with a hint of a smile. Dougal tensed. "We're no' stupid. We leave being fools to the *susunnoch*." These Americans spoke English of a sort but they did not have the Gaelic. The American wouldn't even understand the insult.

The American took off his glasses. Placed them carefully in a pocket. "Watch your mouth, sonny. You Scots are more Saxon than I am."

Dougal's eyes narrowed. "*Mo chainnt?*" Seeing the American was obviously trying to decide whether "my language?" was an insult or not, he continued. "You don't have the Gaelic do you? *Canan uasal mor nan Gaidheal*."

The American snorted. "No. I don't speak your damned language. I'm no good with foreign languages." But he'd subsided somewhat. "Ma just used to call someone a Sassanach when she was mad at them. I asked what it meant once. I guess it stuck because she used it pretty darn often."

"So your mother was a Scot? What *Clann*?"

The American shook his head. "Ma was Irish. Came to the U.S. during the troubles. She had no time for the Scottish." He tugged at his horse-tail moustache. "Well. She didn't have much time for anyone."

"Irish, eh? I served with a couple o' the Wild Geese. None of them could drink."

The American took out his glasses again. Polished them and put them on. Drained his glass in one long moustache-foaming draft. "Really? 'Zat so? We'll have another round then, will we?"

Dougal drained his. "Aye. So long as you don't talk all the time. I have nae had a time when I could take a drink in peace for three weeks. And belike yon Mackay will have me off to Halle in the morning again."

The American was already waving his tankard at the barmaid. When she came over Dougal realized this was another old feud.

To work in the Thuringen Gardens you had to have a pretty fair grasp of English. Even the German customers tended to mix in a fair amount of English. It was a source of pride. Showed you were an old hand around here. Lawrie was willing to bet button-nose Hildegard spoke English without effort.

"*Was willst Du, Du verdammtes rundes Schwein?*" Her comment was a source of some amusement with the miners at the next table. It was apparent that the American understood not one word.

"Two beers," he said grumpily, holding up two fingers and pointing at the empty stein.

She looked at him with perfect incomprehension. "*Wie Bitte? Was?*"

Dougal looked at his empty tankard. It was obvious that this game could go on until a man died of thirst.

"*Mach das zwei Krüge. Und wenn Du sie schnell bringst, erzähle ich deinem Freund nicht dass Du diesem Amerikaner Augen machst.*" One of the reasons Dougal Lawrie did so much dispatch riding was that languages came easily to him. It made simple things like haggling for stabling or asking directions easier, and the receiving of oral replies a lot safer.

The barmaid had the grace to look embarrassed for a second. But she was a pert one, trouble looking for a place to happen, Lawrie reckoned. She was quick to recover. She made a showy little moue. "But you already know, mine darling," she said in thickly accented, but pretty good English. This got a shout of laughter and a whistle from the table next door, and let her sashay off smiling, without the tankards.

The American looked at the empty tankards. Sighed. "I never get service. These Germans give me the gyp. We'll have to go to the bar."

"She's bringing us a couple o' pitchers. Beer's cheaper like that. Which is good o' me, seeing as how you're paying."

The American sat back. Shook his head. "Okay. Hey, I can't talk their damned language. So what did she say to me? And what did you say to her?"

Dougal decided that a few beers was worth a bit of tact. "She asked what you wanted." No point in mentioning the rotund pig part.

"And you said?"

"I told her to bring us two pitchers. And if she made it fast I wouldn't tell her boyfriend she'd been makin' eyes at you."

The American snorted. But there was a smile behind that moustache. "And you'd have to figure out who that was tonight." The pitchers arrived. He looked up, startled. "My God. You get service, Scot." He fumbled out his wallet and paid.

Lawrie contented himself with making a mental note of the barmaid. A bit on the skinny side for his taste, but worth remembering.

Lawrie poured his beer, watching the fine head form. "If ye cannot speak German, why don't you

do your drinking across at the Club 250?"

"The beer is lousy," said the American. By the way it was said, there was more. He looked at Lawrie speculatively. He shrugged. "I got thrown out and told not to come back."

Lawrie took a long pull of his beer. Grinned. "Just about have tae get kicked out o' that rat-hole if ye want to be part o' human race."

The American tugged his moustache. "Yeah. But I thought a couple of them were friends of mine. And I organized their phone, dammit. I jumped 'em over the waiting list. I must have sixty of these *New Americans* yattering at me for phones. I haven't got the instruments even where they're inside the existing line network. Anyway. Name's Tanner. Len Tanner, Scotsman. What's yours?"

"While you're buying the beer, ye can call me Dougal."

By half past eleven, on a week night, Dougal could have found a fair number of seats at the Thuringen Gardens. But few tables with as many empty pitchers. It had been Len's idea to keep count. There were a fair number.

Len stared earnestly at him over his glasses and wagged a finger. "'S not guns or newspapers or pol'tics that win wars, no matc . . . matter what Stearns says. 'S communications. The telephone . . . the net. God I *loved* the net."

Dougal knew what the telephone was. Even though Len had made this speech, at more length, six or seven times that evening, the *net* part was still a mystery. But it had been Len's social life. He had fixed telephone systems by day and spent his nights with this *net*. Beer was poor substitute. But Dougal had ridden through firefights and across country with messages too often not to agree about communications. He nodded. "This telephone now, and the radio . . . they could save a lot o' horses." He had a feeling that he'd said that earlier too.

"Ha!" Len snorted so explosively his moustache stirred in the breeze. "I tol' them. But they din' listen. I sh . . . said: Where we going to get replacement telephones from, huh? Like gasoline . . . 'sential supply. Said they couldn't take 'em away. That we'd jus' have to fix. Y'can't fix 'lectronic and plastic crap. Jus' throw it away and get a new unit."

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Quentin Underwood was tired and irritable. Grantville needed that coal mine. He gave it his best for sixteen hours a day on a lot of days, and the committee took up more time. They could at least let him have a few hours sleep. But the trouble was that some of the equipment they'd brought through the Ring of Fire was beginning to reach breakdown point.

The German "new Americans" were good miners, all right. But specialized technical staff was still primarily "old American," or "up-timers" as some people were starting to call them. And in some cases they were few on the ground.

Sure, they were training up new kids, but some things took a long time. So at 11:30 p.m. x c—when they had a goddamned problem, they still called the mine manager. This time they'd had to send a runner up from the blast-face, because the phone system in the mine was down again—and the shift boss couldn't find the telephone tech.

Underwood ground his teeth. He'd *love* to fire her. Of all the people on the mine payroll, Ellie Anderson would be at the top of his personal *downsize now* list. And thanks to the Ring of Fire it wasn't even an option. She was literally irreplaceable. And she knew it. They'd tried new American trainees with her. The men had left saying they wouldn't put up with being spoken to like that. Quentin couldn't blame them.

He drove down the empty street towards the Thuringen Gardens. Tanner hadn't been in his trailer, but he'd been in the beer hall earlier. Quentin just hoped he wasn't too drunk to be of any use. Well, even stone cold sober, Tanner wasn't a patch on Ellie "the terror" on the mine's exchange. Tanner had worked for the local phone company. The town switchboard was electronic. Safety regs had meant that the mine's switchboard was an old electro-mechanical setup, bought from Bristol when they'd upgraded to electronic systems.

Ellie had come with it. And God help them if ever she went. So the mine management shut up and put up. She'd order what she pleased—and they'd have to find it. Mind you, she was really amazing with the damn thing. She'd stand there, in among the clicking switching stacks and turn slowly like a terrier sniffing for rats. Then she'd lunge off, heading straight for the problem. She claimed she could hear when something was wrong.

The Thuringen Gardens was nearly empty, but yes, Len Tanner was still there. Sitting at a table full of pitchers with a lean, weathered looking fellow. One of Mackay's troopers at a guess. By the looks of the two of them those pitchers were empty. Underwood pinched his lips. Tanner, especially when drunk, had a reputation for being big trouble.

"Evening, Len."

The only telephone technician who had been in the office on the day of the Ring of Fire blinked owlishly up at him. "We're going up in the world, Dougal ol' buddy. The mine manager come for a drink with us."

Well. He sounded affable anyway. "We've got a problem up at the mine, Len. Part of the exchange isn't working. And nobody can find Ellie."

Len snorted. "So suddenly I'm wanted, huh? Well get your sorry ass out of here, *sir*. I fall unner Bill Porter these days. You go ask him."

Quentin Underwood hadn't gotten to be a mine manager without learning to be effective. "Get on your feet, Tanner. I've got men underground whose safety relies on that system. You'll either come up with me now or I'll get the sheriff to cart you up there. And you can sleep it off in the cells."

It didn't look like it was going to work. Tanner started taking his glasses off. "Firsht you'll have to get to the sheriff, Underwood."

Then the trooper at the table put a hand on Tanner's shoulder, and said with a conspiratorial grin to his fellow drunk. "We'll be helping the man, eh Len, *if* he buys us a pitcher or two, next time. Anyways, I'm so fu' I canna take another drop."

It was quicker and easier than fighting about it. "Yep. I'll buy you a couple of beers—your call, but I need your help now. This is screwing up the blasting schedule. They're making do with runners, but that's bad for safety."

The trooper smiled. "Weel, now. I'd say a dozen was the going rate, but seeing as there are men in need we'll make it a half dozen. A special price for him, eh, Len? It's a bargain we have then, mister?"

Quentin noticed that Len had pushed his glasses back onto his nose. The man was grinning behind that moustache. He was also beginning to push his chair back. The mine manager knew how to drive a hard bargain. He also knew this wasn't the time for it. He nodded. "Half a dozen."

Len lumbered to his feet. "Ma always said Scots could do a goddamn deal with the Devil. Come on, buddy. Le's go fix his problems." The tech swayed to his feet. And so did the Scot. They looked like a real life version of Abbott and Costello—if you had given Abbott about a foot of moustache.

It wasn't worth arguing about. So what if he had a Scots trooper coming along for the ride? The man seemed adroit at turning conflict to his own profit. Maybe it would be useful farther down the line. "Come on. I've got the mine truck outside."

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It was the first time Dougal had been in one of these American vehicles. He sat back against the seat. A man could get used to this. And it was fast. Damn sight faster than a horse. The lights . . . well they were a good and a bad thing. You could see the road, but you couldn't see into the darkness surrounding it. He'd done too many night-rides not to know how useful it was to be able to see off into the surrounding darkness. Still, at this speed you'd have to have some lights. It was as well to have them good, he supposed.

They came to a halt at the mine compound. The gate guard let them in and Dougal found himself being shepherded into a big windowless room full of stacks of machinery.

Len Tanner looked at it, with his hands on hips, swaying slightly. Sighed. "Go back to bed,

Underwood. I'll try to dig this lot out of my memory. Damned dinosaur."

The mine manager cracked a yawn. "Do your best." He turned to the shift-boss. "Hein. If he needs to go into the mine, will you detail someone to guide him? Keep him away from the blast zones."

The beefy German nodded respectfully. "*Ja*, Mister Underwood. I see to it."

Then the two of them left. Dougal looked around at the setup. Machinery at this level he would never understand. He spotted a chair and moved over to it. "Weel, I'll get out o' your way. Unless I can do something?"

Tanner was already staring up at the charts on the wall. "Nah. Siddown. God, a T-bar system. I thought I'd finished with this old stuff forever."

Dougal sat down. My, but this chair was finely padded. This foam-rubber stuff was a long way up on horsehair. He leaned back. Instinctively, he reached for the mug on the table. It was full and still faintly warm. You didn't stay alive, riding dispatches across hostile terrain, by not noticing things, even small things. "Len."

The technician looked up, irritably. "Yeah?"

"Mebbe you should look at this." He tapped the cup. "Yon mine manager said the technician was usually here of an evening, but that she must have decided not to come in tonight." He touched the cup. "Tis still warm, just. Would any anyone else be in here, drinking a warm drink?"

Tanner felt the cup. Stuck a finger in the brew. Tasted. "Coffee! She's still got real coffee! You're right, Doogs. No way she'd have left this." He snorted. "So much for the goddamned mine management keeping their finger on the pulse of things. Let's go find out if her truck's still here."

As he spoke someone knocked at the door. It was a miner, by the overalls and head-lamped helmet. "Mr. Elsberg sent me, *ja*. Klaus Kleinschmitt. I am der Health and Safety officer."

"Take us to where Ellie parks her work truck."

"Pliss?"

Dougal translated.

"Oh. *Ja*. Come."

They walked across the compound . . . to an empty bay.

Len looked at it. "Oh, shit!" He turned to the Health and Safety officer. "You'd better get a search team. She's down there somewhere. Does she go out alone?"

"Pliss?"

So Dougal translated again.

"*Ja*. It is against the rules. But Fraulein Anderson . . . she breaks the rules. She does what she likes, *ja*. And when we try to stop her, she swears terrible, and still does it. I go to Mr. Underwood, he just throws his hands up in the air." He sighed, and picked up his walkie-talkie. "I report this. The teams will be called out. But there have been no reports of any rockfalls or problems. You want to go anywhere else?"

Len pointed. "Back to the switch-room. I might be able to work out where the break is. She might be wherever that is."

Dougal was amazed at the turn of speed that the American put into his return to the switch-room. Drunkenness too seemed to have been pushed aside. They arrived a good minute before Klaus, who was attempting to talk on the walkie-talkie and follow them. When they got into the room Len grabbed the cup of cold coffee and drained it. "Hope that helps me think."

He then proceeded to prove, to the watching Klaus as well as the Scot, that he could both think and work hard when he had to. He was moving at a pace that had his moustache windswept. Dougal learned that *Weepstone bridge* and *ferret* meant different things to these Americans. Minutes later, Len was peering through his glasses at the map of the risers and cross-cuts.

"The break is hereabouts." He pointed. "On the old first cut. Good chance she'll be somewhere near there. Can you take us there? We might as well fix the damn thing anyway."

"Pliss?"

So Dougal translated.

"*Ja*. You will come and collect the helmets and overalls? And spick slowly, pliss. I cannot understand you so good. I read the lips, and I don't see the lips."

Len tugged his moustache. "Yeah. Well, I'll take my translator. Just need to grab some tools, huh?"

Ten minutes later they, and four other miners, were climbing out of the vehicle into an alcove—in which the mine's telephone systems' maintenance vehicle stood parked.

Len Tanner blew out through his moustache. "Ladder's gone. Come on."

They went up a riser to the original cross-cut. Len, despite his bulk, was leading the way. Dougal didn't enjoy the feeling of tons of earth piled above him. It felt as if the roof was pressing down on him. They hadn't gone far when they heard a yell. At a dogtrot they ran towards it.

She was a mess. Blood on her face amid the dust. She'd been crawling.

Tanner ran to her. "Are you all right?"

The woman had startling red hair and rather glazed eyes. And a totally uninjured mouth. "Fuck me. Yeah, I'm having a real great time. What took you bastards so long?"

"You didn't check in, *Fräulein*," said Klaus, severely. "We didn't know you were down here until Herr Tanner told us."

She waved a hand vaguely. "Oh, piss on your rules. I was in a hurry. If I have to wait for you bastards, I'd never get anything done."

"You must obey—"

Dougal had had enough battlefield experience to know what he was seeing. He squeezed Kleinschmitt's arm and said quietly. "She's been hit on the head, man. Leave it now."

Already two of the team had the stretcher ready. She pushed them aside. "Gimme a couple of shoulders. I've screwed this ankle." She hauled herself up on the arms. "Aw, shit!" She winced. "Not you, Tanner. You go fix it. It's the cable-tray maybe a hundred yards on. A fucking great piece of the ceiling fell into the tray. It, half the tray and the ladder came down with me when I got up there."

So Dougal Lawrie found himself unable to leave the pressing darkness just yet. He, Tanner, and one of the miners went on to fix the fault.

Looking at the splintered stone next to the fallen ladder, Len whistled. "If that whole thing had landed on Ellie, she'd a' been dead," he said quietly.

Dougal found himself a troubled man. If one piece of the roof could come down, could not others? The thought seemed to make the blackness blacker. Give him a moonless night of dodging moss-troopers on the open moor, rather. It didn't seem to affect Tanner. The man looked too round for the ladder—amazingly light that ladder was to carry a man that heavy—but he seemed comfortable up there.

"Bugger." Irritation from the ladder top.

"What's wrong, man?" Dougal hoped he didn't sound breathless. He felt it. Damn fool situations too much beer got you into. That was why he normally stuck with just one or two.

"I musta been drunk when I packed up. Haven't got my wire cutters, frchrissake."

Dougal reached into his gaiter and pulled out his *sgian dhu*. "This knife will cut near anything. Ye can even shave wi' it. I would nae give it to you to cut wire, but I need to get out of this place."

"*Herr* Tanner," said the miner. "Here is the plier of the . . . liddy Anderson. It must have falled."

Len Tanner reached a hand down. "Yeah. Better than the knife. Pass it up."

Dougal saw that the light ladder could actually take the weight of two men.

A minute or two later Tanner came down, dusting his hands. "No point in testing it. No one in the switch-room. Ellie will be in the hospital by now. Let's get outta here."

Dougal was glad to oblige.

But, some fifteen minutes later, when they got back up to the switch-room they discovered he was

wrong. Ellie had a bandage round her head, but she was very present. Her foot was up on the desk and she had a militant look in her eye.

Looking at her in the light, Dougal thought she was a fine figure of a woman. She'd cut and stook peats all day, he reckoned.

"I can hear you got it fixed," she said, cocking her head at the relay-stacks.

Len shrugged. "Yeah. Simple job. Why don't you get them to take you home, Ellie?"

"And leave you and your boyfriend with *my* exchange?" she sneered.

Tanner was principally interested in telecommunications. "Ha. What the hell would I want with this old dinosaur?"

The other part of her statement penetrated to Dougal. "Ye daft besom! We just gave up a guid nights drinkin' tae pull your tail oot o' the mess ye made. I'm minded tae put ye o'er my knee an' gi ye guid hidin'. Have ye no brains or no manners?" He was quite angered and that tended to make his English a lot thicker than usual. Just about impenetrably thick, actually.

"I think I just got cussed out by a master," said Ellie, looking impressed. "What'd he say, Tanner?"

The telephone technician tugged his moustache. "Damned if I know," he said. "Ol' Doogs here can sound off in about six different languages," he said proudly.

Dougal was quick on the uptake. He realized that the way to deal with this particular woman was to be rude right back to her. He'd met a few troopers like that, but never before a lassie. No wonder the mine manager had sounded so uncomfortable about her.

The subject of his thoughts jerked a sardonic thumb at him. "Thought you didn't approve of all these foreigners. That we Americans should keep to ourselves."

Len Tanner looked uncomfortable. "Yeah, well. Dougal is a Scot. And I got used to it."

She snorted. "Realized you made a goddamn redneck fool of yourself, you mean."

Tanner's moustache began to bristle. "Ha. So where is your 'new American' assistant, Ellie Anderson? You can't handle the Krauts either."

Ellie laughed. "More like they can't handle me. I've been through three trainees. I don't mind Krauts, as long as they jump when I say frog. They bitch about my language to the boss."

"Ain't they figured out that your bark is worse than your bite yet?"

She raised an eyebrow. "That's what you think, walrus-face. And you watch your mouth about my switching gear in future."

He snorted. "You want me to be polite about stuff that came out of the ark? I work with state of the art electronic equipment . . ."

Now, by the flames in her cheeks, he'd really gone too far. "Tanner, you're so goddamn stupid! Your electronic rig is *so* superior. This is 'an old dinosaur.' Well, let me tell you this, walrus-face. Within three years that piece of plastic and electronics of yours is going to be nothing but fucking scrap. Something goes wrong there . . . you toss out the whole circuit-board and plug in another. Only you can't make transistors and circuit-boards. And you sure as hell can't buy 'em. But Ollie or Nat Davis's shop can *make* the mechanical switches here, if they have to. This ol' lady is gonna be the switchboard for the town. Hell, for the whole new United States. We've got ten times the capacity we need for this mine, or even this rinky-dink town. This is where it is gonna be at. So you better goddamn learn," she snarled.

"So your switching gear might outlast my switchboard. So what?" Len held up the telephone. "See this? Do you know what I do every goddamn day? Cannibalize broken phones, crap I'd have thrown away before, and try and make one working instrument outa two pieces of scrap. An instrument has an average life span in normal use of maybe five years. Ain't that many new phones around. In three years the network will be half the size. And in ten you might have three telephones working. But your 'ol' lady is gonna be the switchboard for the town," he mimicked savagely. "Big deal. Big fat hairy deal, Ellie."

Ellie stared at him. In silence. "You know, walrus-face, that's the first time I've heard you speak any sense."

"Stop calling me walrus-face!" he snapped.

Ellie snorted. "I'll call you any goddamned thing I please. But it's time I showed you something I've been working on. I figured out that they were going to run out of instruments PDQ. I guess I ain't the most diplomatic person around because when I tried to tell Underwood, he said it wasn't an immediate priority. Fucking jerk."

"Yeah. I tried to tell Bill Porter. He wasn't listening either. People take phones for granted. They don't even think of an existence without 'em."

She pointed at a metal cupboard. "Open that."

Inside stood what Dougal decided could be a fiendish new torture device for the Inquisition.

Ellie pointed proudly to the contraption. "We've got to reverse engineer. Downgrade. They've had to go back to blasting in the mine instead of using the continuous miners, right. Well, we can't make electret sets. So I've been workin' on this."

Dougal didn't understand it, but it certainly impressed Len. "Holy smoke! Edison would have been proud of you! Does it work?"

"Yeah, well . . . The carbon granule part was tricky at first, but I got it licked once I got Ollie Reardon to make me some decent diaphragms. I'm having a bit of trouble with the antisidetone network. But it works."

Len Tanner took a deep breath. "Okay. So I guess I made a fool of myself again, huh."

He didn't sound unhappy about it. He rubbed his hands together. "Heh. We're going to see an increase in subscribers again. Work our way up. Lines all over the new United States . . . Who knows? One of these days we may even have the net itself again. I kinda thought everything I knew about was heading for being history. Makes you feel so damned useless."

Ellie Anderson scowled. "It's not so simple. If I could get the fucks to listen to me. But when everything breaks down they'll want to listen. Maybe three years from now."

Len shrugged. "We can't talk to the bosses. It's not my line and it sure isn't yours. But I'm gonna put in some time up here. Refresh myself on this stuff. The instrument fixing is going to take a back seat for a while." He smiled evilly.

Dougal shook his head. "Weel. My head is starting to hurt. An' you understand this stuff, Len. I understand my way home tae my billet."

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The next day Dougal awoke—as was his lifetime's habit—at first light, with something of a headache, and an idea eating away like a maggot at his mind. Three separate facts he'd picked up last night were connecting in his head.

Firstly, up at the mine was a device which was capable of carrying many more of these telephones than it did now. Secondly, the woman technician had made a telephone itself. It was large and clumsy compared to the phones the Americans had brought with them. But compared to a letter, a messenger and a horse, it was a grand thing indeed. The Americans might not see it as such, but in Jena or Saalfeld—any city in Germany—there'd be a stream of wealthy merchants and notables who would pay very, very well indeed, for such a device. And they'd be happy to take it right now, never mind waiting the three years that Old Americans would accept.

Never mind Jena, for that matter. Just among the new American families there'd soon be a demand if they knew that they could have such a thing. Of course New Americans would want the wonderful light phones that the Old Americans had. It might be a lot easier in one of the nearby towns.

It was however the third point that really was gnawing at him though: Neither Tanner nor the woman at the mine—Anderson—was any good at dealing with Germans. If you came down to it: neither of them was any good at dealing with people. As Mackay's dispatch rider, he understood how vital communications were. But neither of those two could have explained this. And neither of them had the business sense of a rabbit. And neither could deal with authority.

Dougal put his hands behind his head and let his breath hiss between his teeth. He spoke, to varying



degrees of fluency, five languages. He could explain things. He'd had to—especially to men in positions of authority. And he did have the canniness to bargain and deal. This, if he could pull it together, had the smell of the deal of a lifetime.

He stood up. First Mackay. If the colonel had left his warm bed next to that pretty and deadly wife of his, he'd be in Staff HQ.

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He was, along with Lennox. Dougal Lawrie saluted. "Sir. Would you be having me return to Halle today?"

Mackay shook his head. "It's already too late to do anything about it, unfortunately."

Lennox twirled his mustachios. Dougal reckoned he had the length on Tanner, if not the breadth. "Nae purpose, t'whole thing. T'would o' done some guid if we'd had word two weeks ago. But th' barges are already on th' way to Naumberg. Now th' guns'll have tae go by road instead. Through Saalfeld, Kronach, and so on."

Mackay shrugged. "His Majesty did understand the communication problem. The message will have to go back, but there's no urgency. It's a pity we didn't have word earlier though."

Dougal Lawrie cleared his throat. "About that, sir. If I could have a word, sir?"

Lennox eyed him suspiciously. "This is nae' one o' your money-makin' schemes again is it, Lawrie?"

Mackay sat back in his chair, his infectious grin spreading. "He saved us a fortune in horseflesh last time, Lennox. Let's hear it, trooper."

Dougal knew that in some ways this would be his hardest pitch. "Well, sir, if we had yon *phone*"—he pointed to the instrument on the desk—"spread oot across Germany, we'd have done away with this problem."

Mackay smiled. "And trooper Lawrie could spend his time in the beer garden instead of in the saddle. Can't be done, Lawrie. I've talked to Mike Stearns about it. It's something they'd like to do. One day. But they've other priorities."

Dougal took a deep breath. "Colonel. If I could organize such a thing—without taking away frae their priorities, in a private way like—you'd have no objection? You know how many battles have been lost because of poor communications, sir. This could change that. And it would keep me out o' the saddle, sir."

He saw the wariness in Mackay's face. "And if it works, sir, ye'd be able to talk to Julie when you were away."

Mackay laughed and Dougal knew he'd won. "You're my most reliable dispatch rider, Lawrie. You're trouble in a troop, but a good man for detached duties. So if I can help it, you personally are going to be sitting in the saddle, telephone or no. There are places it won't go to and there are not enough of these radio devices to go round."

"Aye, sir. But this would nae need me tae leave your service. There's nowt in my oath that says I cannot have a business interest on the side, as it were."

Lennox snorted. "Y' already have, ye black-hearted moss-trooper."

Lawrie ignored Lennox. Concentrated on Mackay, hoping that the young man would not think too deeply on the affair with the gypsies and their current remounts. "Sir. I've the people who can do the job. They can no' deal with the Germans. They have no' the language nor the local knowledge. If I factor for them, the money will come from the Germans and the skills from these two. And we'll have telephones. They'll aid us in the war. The enemy cannot use them even if they capture the instruments, because the calls will all be routed through Grantville. It's a bargain, sir. A bargain in which Grantville wins, the other towns win, and King Gustav Adolf wins most of all. And ye've still got your dispatch rider. I just have a wee business on the side."

Lennox snorted. "Aye. And we can provide y'r time and horses too, eh, Lawrie?"

Mackay chuckled. "No doubt. But if he doesn't do this, he'll do something else. And we might get something useful out of this."

Dougal saluted smartly. "Thank you, sir. You'll no' regret it. If we can make it work, sir, ye'll talk to Mr. Stearns about a military appropriation?"

This venture was greeted with a shout of laughter from both men. "I knew that you'd be up to some scheme, Lawrie. Get along with you, but see you keep Lennox posted with your movements in case we need you."

Well, it wasn't a flat refusal, anyway. And he had permission to proceed. Dougal was smiling as he walked away.

\* \* \*

He found Len Tanner frowning at pieces of telephone. "My head hurts," Dougal said by way of a greeting.

"Humph." Tanner said, looking up briefly. "So does mine." His voice was carefully neutral.

Dougal realized that what he was dealing with here was a man who was used to people being friendly . . . only when they wanted something. This was going to be trickier than he thought.

"Yon lassie up at the mine said something last night I wanted to ask you about. I've an idea o' a business venture I've a wish to go into. But I dinnae ken this phone business. I need some advice or she could sell me short."

Len Tanner laughed. "Ellie? She couldn't sell a drink to an alcoholic. She's got a nasty tongue and a hell of a temper. But she's rock solid honest, even if she'll snap your nose off for nothing."

Dougal grinned. "Ye sound as if you fancy her." And then, at the thoughtful look on the man's face, he realized he'd been more accurate in jest than he'd been when in earnest.

Len shrugged. "Her bad-mouthing doesn't worry me."

"Well. She is a fine figure of a woman," said Dougal respectfully. There are some lines a wise man doesn't cross. One of those is a fellow man's taste in women.

Len blinked through his glasses. "Yeah. I kinda thought . . . when we were cut off like this. Being the only two telephone techs and having something in common we might get together. Y'know. An' anyway. I've never had any luck with women. But I thought . . ."

Len fingered his moustache. "She said I got no fucking interest in a redneck walrus.' Y'know . . . it took me twenty years to grow this darn thing," he said resentfully, patting his moustache. "Anyway. Tell me about this idea of yours."

Dougal pursed his lips. "Weel. It's things you said last night, you and yon lassie. You got me thinking about not having to sit in the saddle all day. About that switch-room being able to cope with ten times the number of phones. And what you were saying o' phones all over the new United States."

"Yeah. Well, the exchange isn't *all* that big, but it has a hell of a lot more capacity than they're using. But it won't happen for five, maybe ten years. Things have got to get settled and organized first, Doogs. They keep telling us that they've got other priorities. When you put that into my kind of language, that means they've got ten other places to put the money. Me, I think that's goddamn stupid, but they didn' ask me."

Dougal nodded. "Aye. It is stupid. Ye ken, things will get organized a lot faster if we have rapid communications."

Len nodded. "Yeah. Not much we can do about it though. People ain't inclined to listen to me. I've tried to tell Bill Porter. I kept getting this 'we'll get here but we have other priorities right now.' So. We'll just have to wait."

Dougal smiled. "What if we don't wait? What if we just do it ourselves?"

Tanner laughed sourly. "Are you crazy? Nah. I guess you just don't know, Doogs. It's real big bucks you're talking about. Forget it. And forget borrowing it. The Abrabanel's pretty well control venture banking and that means big projects get chosen by the town. Mike Stearns ain't a bad guy, but he's set on a whole list of other stuff."

Privately, Dougal suspected that Stearns could be brought around to it by someone who was a better talker than either Anderson or Len Tanner. But that would not fit in with this Scot's plans. "If

you're not interested in such a system getting started now . . ."

Tanner snorted. "Of course I'm interested. It just can't be done."

The salmon was chasing the fly. Now to set the hook. Dougal held out his hands. "Well, if you canno' do it, perhaps I'd better talk to some o' the students at the high school. They're full of ideas. Also Mister Underwood. I can raise money from the German towns, even if I cannot raise it from the Abrabanels. As soon as I have a working line, I'll have investors queueing. All I need is one telephone to Jena or Saalfeld. I'll have them falling over themselves to buy shares. Well, it has been nice talking. Perhaps we can employ you one day. I'd rather have had you as one o' the owners, but . . ."

Tanner stood up and pounded on the table with a force that jumbled his miscellany of components. "Students! What the hell do they know about practical telephony? You need us! You need a wireman and Ellie's instruments. And forget it. We're not being your employees!"

"Aye? So you're in, then?"

\* \* \*

Half an hour later they were sitting in Ellie Anderson's office, next to the clicking switch-stacks. Len Tanner was being more eloquent than he'd ever been in his life.

". . . look, Ellie. We can either sit around and wait for it to happen and stay takin' orders. Or we can do just do it. We end up with a phone system designed by telephone technicians and not goddamn bean counters."

Ellie looked suspiciously at Dougal. "So what's your share of this deal, you Scots cadaver? What do you bring in to it?"

"Something you cannot. *Ich spreche Deutsch*. And what's more, the notables o' the towns around here know me. They'll assume this is Mackay's business, which means King Gustav Adolf business, no' ours." He smiled beatifically. "Otherwise, if ye tried to do it wi' out me, ye'd have every petty official demanding a bribe or a tax. They'll no' try that on with what they assume is Royal business. Besides, I can deal with people."

Tanner nodded. "He's got a point, Ellie. Neither of us can speak to people. We ain't much good with Germans."

Ellie winced as she moved her foot on the chair in front of her. "Yeah. But what are Underwood and Bill Porter gonna say about this?"

Len gritted his teeth. "We're going to make 'em offers they can't refuse."

She snorted. Shook her improbable red hair. "I don't like the sounds of this. What are we gonna do? Take a cut in pay?"

"Nope," said Len Tanner sourly. "We're going to take on apprentices. New Americans. And we're going to pretend to like it."

Ellie put her hands to her head.

"And I'll do the negotiation for ye," said Dougal, in the very tone that he'd once used to trick Gypsy horse traders. "If it all works we'll be needing them. And I'll convince yon Underwood and is it . . . Porter?" Len Tanner nodded. "Aye, Porter, that ye'll no succeed and if they agree to the terms, they'll get trainees they want. They'll think they're getting the better of you. By the time they ken it is the other way around it'll be too late."

Ellie smiled evilly. "Underwood would agree to hiring us three-quarters of the capacity of this board if he thought his dreams of firing me could one day be real."

Dougal smiled just as evilly in return. "And ye ken, if you train yon laddies or lassies well, why, we'll be able to hire them away frae Underwood. Then he'll have to bargain for our company's services."

Ellie Anderson shook her head and laughed. "Cadaver, I can tell that you'll end up owning the company. So my terms are that you call it Anderson, Tanner and what ever your name is, so people will at least remember we existed." Her eyes were suddenly bird-bright. "Your name doesn't begin with a T, does it?"

Dougal shook his head. "Lawrie. Dougal Lawrie."

Ellie sighed. "Oh, well. I guess I won't be one of the directors of AT&T, after all. There goes another ambition."

\* \* \*

They sat in Len's chaotic trailer, surrounded by half a ream's worth of scrawled paper and the four computers that had been his life, once. Len was painfully aware that the place was a mess. Well, it had been a couple of years since anyone but him had been in here. And since the death of the net, he'd spent little enough time here himself.

"We'd need about twenty miles of three-hundred-pound-per-mile wire. Copper is still quite cheap, thank God. Poles every fifty meters. Insulators. Then we'll need some labor to put up the poles, and the wire. Say a team of five. We're talking months of work."

Len tapped the figures into the spreadsheet. His face got longer as they added new items. Eventually he said gloomily: "It doesn't work, guys. We're about a third over budget. And there'll be stuff we haven't even thought about yet."

Dougal tapped the rough map they'd been working out distances on. "Is it needful that we follow the road? And well, can we not get the farmers to put up the poles?"

Len considered it. He'd been a wireman. "They'd probably fall down in three months. And if we go across country we'd have to clear the trees. "

"Three months is all we need," said Ellie. "Look, our aim is one line to Saalfeld. Get tolls coming in and get investors. There's no way we're gonna have enough money to set up a telephone network." She grimaced. "Especially if every instrument we make is gonna take me a month."

Len knew she could do better than that. "We'd get around that. I reckon Ollie could do most of the parts for one in a day. If he did it production-line style, we'd get a lot more. Those phones sure aren't gonna be cheap. It'll work, though. But the poles, and the time and the labor—we can't get away from that."

The Scot looked speculative. "Do we have to put up poles?"

"Unless we can insulate the wire, yes. And then basically we'd have to bury it. Which would cost a whole hell of a lot more." It's got to be up in the air.

"We couldn't just attach it to the trees?" asked Dougal.

Len shook his head. "Trees move. And they grow at different speeds. And . . ."

"Y'know . . . he's right," interrupted Ellie. "We could do that! We're talking about three months, Tanner. We can start replacing, putting up proper poles—even during that time."

Len tugged at moustache. "It won't look professional."

Ellie snorted. "Jeeze, Tanner! We're trying to get it up and running. The Germans won't know it's not professional, and the Americans—well, why should we care?"

Len sat back. Nodded. "Yeah. I guess we could do that. And I guess we can improvise so long on the insulators. They don't have to be glass as we were planning on. I figure a piece of tire should do the job. There's stuff down at the junkyard that is beyond retreading. But even cutting all the corners, me demanding leave . . . we're still going to be way short. Ellie and me aren't much by the way of savers, Doogs."

Dougal took a deep breath. "Ah, weel." He stood up and started undoing his shirt. "As well hung for a sheep . . . This idea had better work." He pulled out a money belt. "A tribute o' my faith. A mercenary trooper does nae earn much, but I've done a small amount o' horse trading."

He spilled some silver, copper and even one golden coin onto the desk. "My savin's over the last ten years or so. Will we do now?"

Len Tanner looked at the coins. At the weather-beaten Scot. The man wasn't young. He looked at Ellie, and she at him. Back at the pile of coins. The Scot's entire life-savings might add up to three hundred dollars. The two Americans looked at the Scot. Dougal Lawrie was plainly uncomfortable. "It's no' much," he muttered. "But it's what I've got."

"It'll be enough," said Ellie in her don't-even-think-of-arguing-with-me voice.

Len nodded. "Yep." He looked at the pile again. "Equal shares."

"It's no' equal to what you're putting in," said the Scot quietly. "Shares based on what we put in."

"We're *all* putting in equal amounts," said Ellie, harshly. "We're all putting in all we've got. I can find another grand or so."

Len nodded. He could always sell a computer. They were worth a fortune these days. It would be a shock to get more for a machine than he'd paid for it for a change. "Yep. Sounds fair."

The Scot looked embarrassed. "I'm no' dishonest. That's not right."

Len tugged his moustache. "He can take it or leave it, eh, Ellie?"

She nodded.

The Scot reached down and pulled a knife from his gaiter. Slit the stitching on his belt and squeezed out a golden coin. "A ducat. My last resort. If ye're going to do that, I canna hold this back, can I?"

\* \* \*

The caravan was made up of a load-bed and the rear axle from a rusty scrapped truck. Ellie called it Fort Knox. They'd built it up to about six foot with rough timber and roofed it over. It had four low slit windows, just above the metal of the load-bed, and a ladder to a manhole at the top. As far as Len Tanner was concerned it wasn't secure enough. The forest still had loot-hungry deserters and other perils. Wolves and bears, too. At least those wouldn't steal the wire. They might eat the three of them in their narrow bunk beds, though.

The caravan's two oxen were an added aggravation. Len longed for a truck. But then he longed for even the relative comforts of Grantville. The only "comfort" he had was the new prototype AT&L carbon granule telephone, with the Tanner-built antisidetone transformer. It, and its battery, had pride of place in the crowded caravan.

The task had so far taken a week. It was more than just following the marked trees and poles that Dougal had had put up where there were no suitable trees. Every new wire attachment point was numbered. Len would attach the phone, call in, and Ellie would record resistances. If the line went down they'd be able to tell exactly where the break was by the resistance on it. It was tedious, painstaking work. Len was at the stage of wishing for some excitement. Wishing for better German linguistic skills, too. Dougal had been with them until two days ago, but the Scot had had to return to Grantville. The bulk of Mackay's troop were taking part in an exercise in Saalfeld, merely miles away. But Dougal was posted back to Grantville.

Dieter, the assistant Dougal had found him, was so eager it was painful. And he spoke fair to middling German-English. Len found he was coming to like the boy. But he was getting mighty suspicious about this *Waldross* term the kid kept using when talking to Ellie's trainee, Lilli. Still, he'd even managed to learn a few words of German. It was different when you wanted to. Having a purpose, having a dream, had made the year 1633 in Thuringia a great place to be. It had changed somehow from a curse to a place of opportunity. It had become a United States that had a place for him too, even if it meant learning a foreign language and working his hands raw at repetitive manual labor. Another four days should see them in Saalfeld, their first target city. A lot of business from Grantville was going that way these days.

They'd just settled in for the night when boredom suddenly became a very desirable thing.

The door-bolt was literally ripped out of the wood. And through it came barreling saber-armed men. Len never even managed to get to the shotgun beside him. Instead he was wrestling with a sword-arm. Then bar-fights came to his rescue. He grabbed a tunic and head-butted. He could actually feel the nose break. But someone else had seized him from behind. More hands, strong ones, and profuse German swearing. He kicked savagely and was rewarded by more cursing.

Ten minutes later he and Dieter were tied with their own precious wire as well as rawhide thongs and dragged outside the caravan, to where more men were throwing kindling onto the fire. Len was conscious. Dieter wasn't.

A pair of riders came up through the darkness. Two of the attackers hastened to hold bridles once

they dismounted. The others saluted them respectfully. Len wished like hell he understood more German. One of the men who walked into the firelight looked as if he'd just stepped out of a palace rather than the darkness of the Thuringenwald. His clothes and cape were impeccable. His boots gleamed like mirrors in the firelight. He looked down an arrogant aristocratic nose at the scene. The other . . . well, he was one of those invisible people. Everything from his dress to his face radiated *ordinary, forget me*. They walked over to the prisoners. The elegant one looked at them in such a way that Len Tanner began trying to remember prayers. He snapped something in German at them.

"I can't speak German. Ich nix sprechen zee Deutsch."

The look this earned him from the elegant one didn't bode well. "So. You are one of these American interlopers, *ja*?"

"Just what are you doing here?" demanded the plainly dressed man in perfect English.

"He is a spy, Weiman. *Ja*. Or a guard. Here to watch over the route of the guns. I think we will have the truth tortured out of him." It was said in English, while the elegant nobleman watched him under half-lidded eyes.

I'm expected to understand. To shit myself. Like it could get worse. But he knew it could.

"I'm a technician. I don't know anything about your guns. We are putting up the telephone line through to Saalfeld for King Gustav Adolf." As soon as he'd said it, looking at the man's face, Len knew he'd screwed up, badly. This man wasn't a bandit. Or even some local aristocrat. This was someone who both feared and hated the King of Sweden and Captain General of the United States. Whatever he was doing here was obviously aimed at hurting the king.

"You have just ordered your own execution." He leaned forward and grabbed Len's moustache, tugging. "I will singe Gustav Adolf's moustache via you. Captain Von Streml . . ."

The plain man held up hand "Wait, Graf. I wish more information from the prisoner."

Len knew that "Graf" translated roughly into the English "Count." It was apparent the count was not accustomed to being told to wait. But it was also apparent that this man Weiman held the whip hand. The graf stayed the order.

Weiman turned to look at the two prisoners. "This telephone. I saw them on my visit to Grantville. You can make them?"

Len knew a lifeline when he saw one. "Between the two of us, yeah."

Weiman turned back to the graf. "I think the Emperor might like these men alive."

The Emperor! That had to be Ferdinand II of the Austrian Habsburgs he was talking about, Gustav Adolf's most bitter enemy. And earlier that day he'd thought 1633 was a time of opportunity. Well, if he could talk his way into letting him call Grantville . . .

"We need our gear in the caravan. And look if the line gets broken the machines back in Grantville will ring an alarm. And if we don't call in every morning Colonel Mackay's men will come and check. You'll have to let us call in."

By the look in the eyes of Weiman, he hadn't succeeded. "We can deal with anyone who comes out. Most of Mackay's troops are not in Grantville. So, no, you will not call in and by great cleverness give some warning. You will now show us this telephone. A small device, Graf, but it allows them to speak across great distances."

Only when he was taken back to the caravan with a couple of flaring brands Len realized that the AT&L carbon granule telephone was also a casualty of the fight. "It got smashed." The heartbreak in his voice made the count laugh.

"You can stay in here and enjoy it, *ja*." he said. He snapped something in German and Len found himself flung onto the caravan floor. A few moments later they tossed Dieter on top of him. The young new American groaned. Well, at least he was still alive.

The troops nailed the door in place.

\* \* \*

It was a long, long night. Dieter had regained consciousness quite soon, much to Len's relief. There

wasn't much he could have done for the boy, tied up like this. Outside they could hear several of the graf's men making use of the fire and devouring their precious rations. Their beer too. The fireside conversation grew louder. Of course it was all in German. Eventually Len had to ask Dieter. "What are they saying?"

The young man's voice was bleak. "They do not like the new United States, *ja*? It takes their peasants, their ancient rights. It weakens them. And now the graf, he waits for the big shipment of the new guns for Torstensson. They will ambush them here tomorrow. If they can, they will steal them for the Austrian Emperor. If not they will destroy them."

Len ground his teeth and went on with bending and flexing his bonds. Maybe they'd break. Not that that would do them much good. "And we just happened to be in the wrong place at the wrong time." He sighed. "Listen Dieter. You are an expert telephone tech. Between the two of us we make telephones. You got that, boy? That's what I told them. That's all that is keeping us alive right now."

Len began easing his way along the broken remains of the telephone. In the ragged light of the brands he'd seen something among the ruins.

The battery.

Finding it in the dark, with his hands tied behind him was another matter. But eventually he located the squareness. And then, managing to sit up, keeping hold of it, against the back wall, to find the insulated cable. Getting it to his mouth was something that would have been best left for circus acrobats.

Len tried not to think about what biting the wire was doing to his teeth. And then he had to maneuver some more. Trying to manage a short behind your back, when your hands were tied was exhausting. And very difficult.

A spark told him he'd managed that short.

"What are you doing?" hissed Dieter.

"Tryin' to call home. I just hope Ellie's on the board, not your bit of talent."

Spark spark spark—spark . . . spark . . . spark—spark spark spark . . .

The battery died sometime after dawn. It had been a long night, and Len had no idea if the line to Grantville was intact. Or if anyone would hear it in between the sound of the switches.

\* \* \*

The wagon train trundled forward toward the graf's ambush. From the slit window of his prison Len and Dieter watched horrified and helpless. Oxen don't move fast. To Len, these seemed to be moving glacially. Sixteen heavy wagons especially built for transporting Torstensson's new gun barrels. Guns that could spell the difference in the war, neatly under canvas covers. And there didn't even seem to be any outriders. At the moment the up-grade was the image of tranquility. It was going to be murder. And the aftermath, if those guns got to the other side . . . would mean that the artillery advantage that the Swedish forces had enjoyed would be over for a while. Men, money and materiel still weighed on the side of Emperor Ferdinand.

Len couldn't handle the waiting. The guards might come and beat him up but the hell with it. He yelled. So did Dieter, adding his bull-like young voice to Len's.

No one came in. But the sound wasn't carrying to the wagons.

Len saw the smoke-puff at the forest edge before hearing the gunshot. Saw the cuirassiers begin to charge out of the forest. Closed his eyes. He could hear the pop of pistols.

The thin bright sound of trumpets made him open his eyes again. The pop of cuirassiers' pistols was replaced by the heavy, solid massed sound of shotguns. Lots of them. Looking at the wagons now, Len saw that the canvas—if it had ever been canvas—was ripped. Firing in massed volley from behind the rampart of cannon-barrels, the Grantville militia was tearing the Austrian cuirassiers apart. There was a red head in among those on the lead wagon. And riding down the hill from the direction of Saalfeld were the bonnets of Mackay's Scots.

Len grinned at Dieter's bloody face. The young man grinned back. Len hoped Lilli wouldn't mind a couple of missing teeth. The two settled back to watch the Austrian raiders being shredded.

\* \* \*

Len massaged his wrists, his mind in some turmoil. Ellie had not only left her switch-room but had actually kissed him. Well, that was when she and Dougal had kicked in the door to the caravan. Now, she stood and shook her head at the smashed ruins of the AT&L Mark One. Awkwardly, he patted her shoulder. "We can make more."

She shook her head. "Maybe one day. But you came up with the real answer, Len. We've been over-engineering. We thought coming down to a Bell-type instrument was stepping down. Sure, it was a long way down from electret microphones and transistors. But it wasn't far enough. Any one of the machine shops can knock together a Morse-key in a couple of minutes. We need to go back to the telegraph. We can have the telegraph covering towns from here to the Baltic in six months."

Len sighed. "I guess the Internet is a way off, huh? But I suppose you could be right."

Dougal nodded. "Aye. That she is. We were talking about it this morning. Look, you Americans expect to talk to people immediately. The rest o' the world—we're glad if we can send a message within three weeks. This telegraph will do a grand job."

"And once we've got the lines, well, then the step to telephones is a much smaller one, Len."

"Yeah. I guess. So did you figure out it was Morse code I was sending?"

She scowled at him. "You made that damned noise in my exchange for nearly ten hours. And I couldn't even tell you shut up. Three longs, three shorts, three longs. Over and over again. Why didn't you tell us what was going on?"

Len shrugged. "That's all the Morse I know. Besides, my hands were tied behind my back."

Ellie smiled. It was a slightly nasty smile. "Bet you can't say that in a year's time. You'll even dream in Morse."

Len shrugged. "If that's what it takes to make AT&L fly . . . I will." He pointed to the rout below. "So how did you organize this? I mean the militia I can see, Mackay's troopers back from Saalfeld."

Dougal rubbed his butt. "There were horses before telephones, Len. And I've got a mort of an investment tied up in you. I couldnae let that go tae waste now, could I? It's going to cost you, mind. I have nae been in the saddle for months, and I'm damned sore."

Ellie shook her head at the third partner. "Lawrie, you're a fraud. Len, he led the scouting party, rode back to Granville and then rode cross country to Saalfeld to find Mackay. He's been through about six horses, and been in the saddle just about nonstop since last night."

"Aye, but she was the one who got yon Stearns and his wife tae come up and listen to the tappin', to get it into his head where you were and why we needed tae scout it." Dougal grinned. "It wouldnae have been worth his life not to come up to the mine. Ye ken we've got some good out of this. Mike Stearns saw the value o' the idea no more than five minutes after Becky. We've got backing for the telegraph."

Ellie put an arm over Len's shoulder. "You're something of a hero, Len Tanner. Everyone in town is already talking about this." She pointed across at the hastily set up aid station. "Dieter is telling the militia nurse quite a tale by the looks of it. Story is going to grow, boy. You're going to be a popular fellow. Not bad for a man who didn't have a friend in Grantville three months ago." She looked at him quizzically but with an unusual tenderness. "And all it cost you is a black eye and maybe a couple of ribs. And blistered fingers."

Len blew through his moustache. "The truth is, Ellie, I did it to save my own skin, as much as anything."

Dougal grinned. "What they dinnae ken their hearts won't grieve over."

"And you, Len, are going to keep your mouth shut and let the lying Scots company spokesman do the talking," said Ellie firmly.

Len looked speculatively at Ellie. She'd kept that arm over his shoulder. "You wouldn't like to repeat that kiss, would you?"

Ellie actually blushed. "Not with that damn moustache, Tanner."



Len put a reflexive hand to it. Sighed. "Hey, Doogs . . . ya said that knife of yours was sharp enough to shave with. Lend it to me, will you?"