

The Slow Road

Jasper Willingham cranked the old rototiller engine again, and then for the third time. It started and ran rough for a minute or so, but then settled down into a modest roar. "Better get a new muffler," Jasper said aloud. "Neighbors will have my head."

With a pleased smile on his face at his successful refurbishing of the old Sears rototiller, Jasper gripped the control that tensioned the drive and fast walked the tiller to where the new garden was going to be. He stopped, dropped the drag bar down and squeezed the handle again, the tines of the tiller beginning to cut the turf.

It took three hours of steady work to complete the first pass of the tiller over the garden area. Jasper's hands and arms were numb from the vibration of the tiller. It wasn't much, but it was a start. Only the top three inches of the ground were turned, but the grass was incorporated into the soil. Using half a dozen soaker hoses he'd picked up one or two at a time at yard sales the previous year, Jasper began to water one section of the new garden.

With the goal of the day done, except for moving the hoses a couple of times, Jasper went into the small, two bedroom park model mobile home he, Millie, and the bank owned. He said a little prayer when he saw Millie waiting for him with lunch on the table. He still couldn't believe a woman like Millie had married him in the first place, and still continued to love him.

He'd put her through some rough times, but she'd stuck like glue and pulled him out of those bad times without ever complaining. Jasper stepped up to her and gave her a quick kiss on the lips.

Millie smiled. "What's that for?"

"Just because I love you," he said, going to the kitchen sink to wash up for lunch.

"I love you, too, Sweetie. Now come have your lunch. You look tired. Perhaps you should have just done half today."

"No," Jasper replied, sitting down to a California BLT on seven grain bread and a glass of milk. "The sooner the better. We're catching a lucky break in the weather. I'm hoping to have the garden plot ready for winter before it actually gets here."

Jasper took a bite of the sandwich. The comment was automatic. "You shouldn't use so much bacon on my sandwiches," he said.

"You let me worry about that," Millie said. "It's not a BLT if it doesn't have enough bacon. And I know you like them like that."

"Of course I do, but you shouldn't indulge me. Bacon is expensive. Especially bacon this good." Jasper took a long drink from his glass of milk. It had taken a long time before he could drink powdered milk, but he'd finally made the transition.

It had been Millie that found the powdered whole milk. It was much better than the non-fat powdered milk. It was a little more expensive, but it was well worth it in Jasper's opinion. They were still saving money by using it over fresh whole milk.

After the lunch, which Jasper made himself eat slowly, rather than wolfing it down the way he used to do, he moved the soaker hoses to the second half of the garden. Until they could get a well and pump, they were going to have to really conserve on watering the garden. But it was important to get the soil ready for winter.

"Honey, will you give it an hour and then turn off the water?" Jasper asked when he came back into the house. "I've got to get to bed."

"Of course," Millie replied. She was finishing up the kitchen cleanup. She wiped her hands on a dish towel and hung it on the refrigerator handle before she walked over to Jasper. Much as he'd kissed her earlier, Millie kissed Jasper. "I'll be sure and get you up in plenty of time."

"Thanks. I'll see you at nine."

Millie watched Jasper go toward their bedroom for his shower and bed before he had to go to work that night at eleven. She sighed. He really wasn't a nighttime person and struggled with getting enough sleep in the daytime to pull the graveyard shift he'd taken for the shift differential. It wasn't much, but it added a few dollars a week to his check. Every little bit helped.

After taking her sewing machine and sewing basket out of the closet in the second bedroom, Millie began working on embellishing some of the blue jeans she had bought at the thrift shop with her sewing money. It was quite a bit of work, but she could sell the fancied up jeans at the consignment craft shop for almost three times what she put into them out of pocket. It didn't really amount to much of a salary per hour, but she liked to sew, and it was income.

She almost didn't hear the telephone ring, with the ringer turned down low, and the sewing machine going. Millie hurried over to it as soon as she realized it was ringing. "Hello?" she asked a bit breathlessly.

"Mrs. Willingham?"

"This is she."

"Millie? It's Sara. Down at the consignment shop. I just sold the last pair of jeans you had here and I have a customer asking for more. When do you think you'll have another pair or two ready?"

Millie smiled. "I'll bring you three pairs this afternoon. And I should have a couple of bandana tops done, too."

"Good! The tourists love your stuff. I'll see you this afternoon."

When she hung up the telephone, Millie was humming softly. After a glance at the kitchen clock she went outside and turned off the water to the garden, before resuming her sewing.

Millie finished the work, not hurrying so she didn't short the quality of the work. She had delivered the clothing to the consignment shop and returned by five, after a stop at the grocery store. "Soon," she said to herself, as she picked over the fresh food. "Soon, we'll be growing our own."

She quietly cleaned house when she got home, had her own supper, and had Jasper's breakfast of granola, toast, coffee, and milk ready when she woke him at nine that night. It took him a few minutes to come awake, and a few more to get dressed and ready for his breakfast.

As usual, he was quiet during the time, as was Millie. He needed the time to get adjusted to waking up at the hour. After a kiss good-bye, Jasper picked up the lunch box that Millie had prepared for him, and the Aladdin thermos of strong tea he took with him each night to his watchman's job at the furniture factory.

He left at ten, always wanting to be able to get to work on time, even if he was delayed for some reason. Millie finished up in the kitchen and took her shower before turning in for the night. She'd be up the next morning to fix Jasper's supper when he got home the next morning about eight.

After his morning time supper of vegetable beef soup, Jasper got on the computer, one of the few things he and Millie had really splurged on. They could have bought a much cheaper computer. Even a new desktop. But for the same reasons he and Millie were in the midst of many other projects, they opted for a laptop. Used, but very capable. With one of the bundle deals on cable, telephone, and internet, they saved enough to pay for the high speed internet portion.

Both used the computer often. Mostly to find information that would improve their lives, or save them money, or both. They invested in an all-in-one printer/fax/copier, a couple of extra laptop batteries, several pen drives, a high capacity external backup drive, a small uninterruptible power supply and a foam lined aluminum case that cost as much as the computer.

The computer was religiously kept in the aluminum case, which was kept in their fire-resistant metal filing cabinet, along with the accessories, unless it was being used. They wouldn't use it connected to the internet or AC power when it was storming, or threatening to storm.

Despite the expense, which they paid with their tax refund the previous year, had probably already paid for itself in savings.

His research on gardens done for the moment, Jasper went out to till the new garden plot again, this time going down a full six inches in depth over the entire area. He started the soaker hoses again, and used another hose to water the trees, vines, and bushes he and Millie had planted the previous year. Learning about orchard work was one of the first things they'd done on the computer after they got it.

Again, with careful shopping in the area, done mostly through the computer, they found bargains on almost all the things they planted that spring. It would be a few years before the nut trees began to produce, but the dwarf fruit trees should be producing in two more years. They had quite a selection, including several grape vines.

The gaps in the hedges that had developed for lack of care by the former property owner had been planted with thorny blackberries and equally thorny wild rose bushes. Jasper and Millie planned to replace all the hedges with the two alternatives. The neighbors on each side encouraged the hedges, though they didn't want to do the work themselves. Both the blackberries and the wild roses made good hedge.

The wild roses would be a source of rose hips, to ensure the family had a good supply of vitamin C and the blackberries would produce a salable crop eventually. There would be enough for personal use for the first few years.

The strawberry tower had done very well. They should produce a good crop the following year, based on the techniques Millie had learned on the internet and used to make the five tier tower. The berries and grapes were Millie's pets. Jasper had done the digging work when they were planted, but Millie had done everything else.

Millie had to call Jasper in for his lunch. He never had thought of himself as a gardener, but he was already enjoying the efforts. The fruits of the labors would just be that much more enjoyable.

As he walked toward the small patio at the back of the trailer, Jasper looked around with pride. This was a nice, old, residential section of the city. The lots were large, though the houses were small. There was still much left to do to complete his and Millie's long range plans.

The smile faded for a moment, as Jasper wondered if there would be time to do everything, before... The smile was back before he stepped into the trailer and went to the kitchen to wash his hands.

"Alvin called while you were outside. He said he'd be here early Saturday morning with the manure for the garden."

Jasper's smile broadened into a grin. "Did he say how much he had?"

"Three loads. Maybe four."

"Yes!" Jasper said, swinging his fist up to shoulder height in a joyful gesture. He grabbed Millie and swung her around twice before kissing her soundly.

Millie was laughing. "All this over manure?"

Jasper laughed, too. "You read the same things I have. Manure is good. It will give us a really good start on the garden. I am really glad Alvin's kids love those horses so much. Buying that much packaged manure... Well, we just couldn't do it."

“Well, put the manure out of your mind while you eat lunch. The two aren’t compatible.” Millie set the platter of three bologna and onion on seven grain bread sandwiches on the table. Their place settings were already there as was the pitcher of milk.

Jasper poured a glassful of the milk and handed the pitcher to Millie. “What was your day like yesterday?” Jasper asked as he took the first sandwich off the platter.

The two enjoyed their quiet lunch together, the only meal they shared during the week, discussing their individual days when they were apart physically, or separated by different sleep schedules.

As they were finishing up, Jasper asked, “You would have told me, but did Greg Anderson call about the well?”

Millie shook her head. The well and pump project wasn’t going as well as Jasper had hoped. Greg was an old drinking buddy of Jasper’s, and was none too reliable when it came to his side business of jetting down shallow wells for yard and garden irrigation.

“We just have to wait for him, Honey,” Millie said quietly. “He’ll do it when he gets around to it. At least he does a good job, when he does do it.”

“True. He has a pretty good knack at that stuff.” But Jasper frowned. “I don’t know if I like the idea of dowsing, though. The Good Book says it’s the Devil’s work.”

“We don’t have to let him dowse, Jasper,” Millie said softly.

“He won’t do it without,” protested Jasper.

“Honey, we can’t save everyone. I won’t do it, and I don’t want you to do it, but I suppose it is Greg’s choice. He’ll have to make his own peace with the Lord.”

Jasper was nodding. “I get a little carried away, sometimes, I guess, since I became reborn. I wish Greg would get straightened out.”

“We’ll say a pray for him this Sunday,” Millie said, closing the issue.

The next three days went much the same. Saturday came and Millie went off to her part time job at the consignment shop, taking a few more items to put on consignment with her.

Jasper met Alvin in the alley, opened the gate in the sturdy, tall wooden fence that had been Jasper’s first project on the property and had Alvin dump the first load of manure from the dump bed equipped one-ton truck. While Alvin went for another load, Jasper used a shovel and the garden cart he’d put together from junked bicycle parts and plywood to move the first load.

When Alvin dumped the fourth, partial load, Jasper thanked him and gave him the gas money promised. "See you in a couple of weeks, Jasper. We'll be ready to raise the new barn then."

"Okay, Alvin. You know you can count on me."

It was hard work, and Jasper was tired when he spread the last of the manure on the garden area near the alley gate. But Jasper fired up the rototiller and began to work the manure into the garden soil. It was getting dark when he finished. He put the tiller in the small garden shed as Millie pulled the old Chevy truck into the driveway.

The truck was another of Jasper's small victories. Four years previously, when he was in recovery and Millie's little Toyota was on its last legs, he'd made a deal with the garage that worked on the Toyota from time to time. In exchange for the use of the garage, and some technical help to repair a wrecked truck from the junkyard, he'd work for nothing as long as it took to fix the truck.

It had taken a year of evenings and Saturdays to get the truck in tip-top shape. In Jasper's eyes it was better than a new truck. He could fix anything on it, using junkyard parts similar to the ones he'd done the repairs with.

The frame was better than new, that was for sure. It was a one-ton frame, strengthened and gusseted, though the bodywork was from a three-quarter-ton truck of the same year. The bodywork was about the only thing that wasn't from other heavy-duty vehicles. Although a Pontiac muscle car couldn't be called heavy duty, the Super Duty 455 Jasper pulled out of one and rebuilt for the truck probably qualified.

Since he'd started with a bare frame, Jasper had been able to incorporate five fuel tanks. Admittedly, two of them were small, only twelve gallons each, but the total capacity was over a hundred gallons for an un-refueled range of over fifteen hundred miles.

He'd even used his newly developed basic welding skills to cut down another one-ton pickup frame and make a matching trailer for the truck, incorporating three more small fuel tanks under the bed to extend the range of the truck by another five-hundred miles when pulling the trailer.

It had taken Millie a while to get used to driving the truck after only haven driven the Toyota her entire adult life up to that time. But she learned, and came to appreciate the capabilities of the truck during that first bad winter after it was finished.

It had been his first success after stopping his drinking and was still one of the sweetest. Only the purchase of the property and trailer, after three years of soberness and two years of a steady job, was sweeter. An understanding home town banker, and Millie's father's admittedly reluctant co-signing of the note had permitted the purchase of the property for back taxes and then the trailer to put on it.

It had been the right place at the right time. The previous owner had let the property run down after the house had burned, and then quit paying the taxes. The trailer had been another bit of luck. They'd been looking at mobile homes, but they were a bit out of reach.

But with the constant looking and watching the various free sales papers, Millie and Jasper had found a forty-foot park model trailer with two slide outs. It had turned over during transport during a wind storm. Some of the sheet metal was damaged, and there was quite a bit of minor damage that looked worse than it was. It had been a steal.

The banker added the cost to the original land mortgage loan without question. He went to the same church as Jasper and Millie and had watched Jasper's progress. He wanted the family to be successful.

Millie and Jasper had plans to begin double paying on the mortgage, but that wasn't yet possible. The trailer was, hopefully, a short term solution for a long term problem. They both hoped to eventually build their dream house on the lot.

Jasper met Millie at the front door with a kiss. "Oh, Sweetie," she said, "You look so tired. Did you just now finish?"

After a huge yawn, Jasper nodded. "But it is done. Spread and tilled in. The first half soaked and the second half soaking. I'll turn the water off after we have supper."

"Well, come on inside," Millie said, lifting the KFC bag. "I'll have supper on the table shortly."

Saturday evening was about the only time Jasper and Millie ate out, or ordered takeout. Both usually had full days on Saturdays, just as this one had been, and they needed the relaxation time. Saturday night was also their private time to be together.

Sunday morning dawned bright, but blustery. Jasper took his few extra minutes in bed and savored them, lying beside his wife. But church was at ten-thirty and they were never late. They did have time to get up slowly and have a leisurely breakfast before getting dressed for church. As always, they were there early and had a chance to socialize with fellow church members.

The rest of the day was spent as they believed the Sabbath should be. Resting. That didn't preclude a great deal of internet research, in their eyes, and both used the computer, in turns, throughout the day.

One of the things that Jasper had been planning to do was accomplished. He'd read a couple of PAW stories on the preparedness forums of which he and Millie were members. He downloaded a copy of MP-15, an old Civil Defense booklet of fallout shelter plans. One of the plans had been described in a story and it had struck a chord with Jasper. He thought it would be just what he and Millie needed. When they could get around to scrounging the material with which to build it.

Jasper didn't think too much about being in a nuclear war, but they needed better shelter in case of the local natural disasters occurred. Especially tornados, earthquakes, floods, and severe winter storms. The park model trailer, while fine for general living, would be no match for any of the natural disasters, if, "or more likely," Jasper told himself, "when," one or more of them were to happen.

But it was one of the long term plans. At least he now had some working drawings he could study, modify as needed for their use, and start a list of required materials he could start looking for and acquiring.

The task accomplished, Jasper turned the computer over to Millie. She wanted to look for some additional patterns for her sewing, as well as some canning recipes for future reference, when they started getting produce from their orchard and garden. She had the most recent Ball Blue Book, as well as several other reference works.

She didn't have a pressure canner yet, but it was on her list of thrift market and yard sale items she kept for the summer season. She'd seen one early that spring, but just didn't have the money for it at the time. Now she had some money from her kitchen budget set aside to get one if it was a reasonable price. She'd already picked up a couple of cases of used jars.

There just wasn't that much storage room in the trailer and even the small metal yard shed Jasper had torn down for it and rebuilt was nearly full of the tools Jasper had been collecting over the years, a piece or two at a time.

They were about ready to turn in early when the telephone rang. It was Greg. He wanted to do the well the next Saturday. Jasper listened carefully to Greg's voice on the telephone. He sounded sober. That was a good sign.

"Okay, Greg. I'll have things ready Saturday morning." Pleased to know they would be getting the well and pump, Jasper still felt a bit of unease. Part of the payment was providing Greg with a case of beer and a barbeque meal. The barbeque was fine. Jasper just didn't like having the beer on the premises. His greatest fear was he would let Millie down and start drinking again.

By the time Saturday morning came around Jasper had steeled himself for the event. Millie had pashawed his worries when he had voiced them to her. "You will do fine. Greg isn't one of your old friends that keeps trying to get you back to that life. I think Greg envies you your success at quitting and getting on with your life.

While Millie prepared the items for the grill and the side dishes, Jasper set up their small grill. He'd recovered it from the trash on one of his periodic salvaging runs he took looking for such items. It had been perfectly good. Jasper had seen a nice new stainless steel grill in the back yard of the house where he'd found the grill.

With the grill needing only lighting and waiting for the charcoal to burn down to coals, Jasper put a six-pack of the beer on ice for Greg. He was pacing off the area for the future shelter area when Greg pulled up and stopped at the alley gate.

Jasper waved and headed back to open the gate. Greg backed his pickup along the rear driveway, careful not to get off of it into the new garden spot. He stopped at a likely position and got out of the truck.

Greg and Jasper exchanged hearty handshakes and Millie came over to say hello. Greg was more than a little shy around Millie, knowing he'd been partially responsible for some bad times for the couple. Her accepting his presence was reassuring.

"Let me get my rods," Greg said, going to the cross bed tool box on the truck. He returned to the area between the garden plot and the trailer.

Jasper and Millie exchanged glances as Greg began to crisscross the area near the garden with the L-shaped wires held before him. "You do want it here, near the garden, don't you?" Greg asked, stopping at a spot where the wires were crossing.

"The pump can push the water better than it can pull it. I'd kind of like the well to be closer over here..." Jasper walked over near where he'd been pacing off the shelter area.

"Oh. Okay," Greg said. "This one was good, but there could be... yep," Greg continued as he walked back and forth, the wires crossing and uncrossing as he weaved his way toward Jasper.

"Same stream," Greg explained, swinging his arm in a line from the first spot he'd stopped to where he was standing. "Anywhere along this line is good."

In Jasper's eyes it was a nearly perfect spot. It was almost exactly where he'd wanted to the well to be, without consideration of the dowsing. "It's good," Jasper said.

Greg headed back to the truck. "Help me with the pump, will you?" he asked Jasper. Between them they carried a five-horsepower gas engine driven two-inch self-priming water pump to the spot. It was in a cage that supported a old time red hand pump plumbed into the intake of the pump with a tee and check valve.

"You lay out the small hose from the tank in my truck and unload the pipe and strainer and stuff in the box right at the back of the truck bed. I'll dig the hole."

"I don't mind helping you dig," Jasper quickly offered.

Greg shook his head. "No offence, Jasper, but this has to be just so. I know exactly how to dig it."

“Okay,” Jasper replied, going to the truck to take the two twenty-foot sticks of Schedule Forty PVC pipe off the pipe rack of Greg’s truck. The ten-foot long slotted PVC strainer was in the bed of truck, over the wheel well on one side of the water tank.

Jasper looked into the box sitting behind the tank. It contained some two-inch pipe fittings and cans of pipe cleaner and solvent welding cement. Greg looked up from his digging. “Bring over the drill stems and the two-inch hoses.”

The drill stems were five-foot lengths of more two-inch schedule forty pipe with a male adapter on one end and a female adapter on the other.

After he’d carried the things over Jasper watched Greg finish up the hole. There was a short, shallow trench connecting a hole about the sized of the shovel to one two feet square and eighteen inches deep.

Greg laid an old bent crowbar across one corner of the bigger hole and set the pancake strainer that was on a short piece of pipe into the hole. The elbow at the top of the pipe rested on the crowbar, holding the strainer off the bottom of the hole about four or five inches.

Using two inch flexible suction hose with quick connects Greg attached the strainer to the pump. He laid out the second hose and connected it to the outlet of the pump. “Turn on the water at the tank,” Greg said and Jasper quickly did so.

Greg opened the valve on the discharge end of the water supply hose and began to fill the hole and trench. While it was filling, Greg had Jasper help him solvent cement a cap to one end of the strainer and a coupling to the other. There was a short piece of the two-inch PVC pipe in the truck with one bell end and one smooth end. They added that two-foot piece to the strainer.

They cleaned the smooth ends and the bell ends of the two twenty-foot pieces of two-inch PVC and Greg laid them out the way he wanted them. The hole was full of water and Greg put a little water in the hand pump and pumped it until he had water up to the intake of the engine driven pump, explaining to Jasper, “It’s a self priming pump, but this is quicker and easier.”

Picking up one of the five-foot long drill stems, that had a home made sand bit on it, Greg had Jasper screw it into the threaded elbow on the end of the long flexible hose. “Okay, Jasper. Crank the pump.”

The pump engine started on the first pull and water began to flow through the system. When it reached the bit a bit of water sprayed, but not much. Jasper and Millie, who had come out to watch, were amazed as Greg lifted the drill stem, pushed it down and turned it one-quarter of a turn to the right. He lifted the stem and turned it back left before pushing down again and turning it to the right. It was only a couple of minutes before stem was all the way down in the ground.

“Kill the pump.” Jasper did so and Greg lifted the drill stem back up. “Unscrew it.” Jasper did and Greg then had him hold the first stem down low as he screwed another five-foot

length of the drill stem onto the first. Jasper stood up and screwed the assembly into the elbow while Greg held it. "Crank her up."

Jasper started the pump again and Greg began to repeat the process of push and turn, lift and turn back. "Okay, Jasper," Greg said as soon as he was back in rhythm, "You need to use the square point shovel there and clean out the bottom of the hole. That's what is coming up out of the drill hole."

It took a few shovel attempts but Jasper soon had the technique of lifting out the cuttings slowly and letting them drain a little before dumping them beside the hole, in a different pile as instructed by Greg. Jasper also adjusted the water flowing into the hole to keep it full, but not running over.

They were on the fifth drill stem, about twenty-two feet down when the discharge from the drill hole changed. Before the cuttings had been pretty much basic dirt. Now there was a significant amount of sand mixed in. Greg had Jasper start a new pile.

During the sixth drill stem the sand became coarse and more predominant. Greg asked Jasper to start yet another pile of the drill cuttings. "See how the water drains out of that, instead of pooling on top like the early stuff?" Jasper nodded. There was a significant difference in the soils.

"We could probably stop here," Greg said when he had the sixth drill stem all the way into the ground, but I'd like to go at least another five feet. Perhaps ten."

"What ever you think best," Jasper said.

They went the full ten feet. Jasper saw the cuttings turn back to fine sand. The water wouldn't drain out of it. "That's it," Greg said. "Kill the pump."

The two began to lift and remove the drill stem a piece at a time. "What's going to keep the hole open?" Jasper asked, beginning to get worried.

"The water. Or, more accurately," Greg said, "The sediment and water. It's why I recirculate the water rather than use all fresh. Beside it taking way too much water to do using fresh and making a royal mess, fresh water simply doesn't hold the hole open very well. That's why regular drillers use a 'mud' when they drill. For these shallow wells just the sediment from the surface is enough to keep the hole open. If need be I have some Quickgel in the truck. I'd add a cup or two of it if we were going through all coarse sand. Now we don't want to wait too long though, before we put in the screen and pipe."

Jasper nodded and picked up the prepared well screen and lowered it into the drill hole when directed by Greg. "Hold that sucker tight," Greg warned. He spread solvent cement on the smooth end of one of the twenty-foot pieces of pipe, and the bell end of the screen assembly. Then with a motion that Jasper found amazing, Greg hoisted the pipe to a vertical position and slipped the end of it into the bell of the pipe Jasper was holding. He gave it a slight twist as he seated the pipe in the bell.

He began to lower the pipe down slowly and then gave it to Jasper to hold again, down low. He added the second piece of pipe, which stuck well above the ground when the strainer hit the bottom of the drill hole.

While Jasper steadied it, Greg used a hacksaw to cut the pipe off several inches above the ground. Jasper put the piece of pipe back in Greg's truck as Greg cleaned the upper end of the well pipe and solvent welded a threaded male adapter to it. Greg took the elbow, detached it from the hose and screwed it onto the well, using RectorSeal #5 pipe dope.

"The other long hose," Greg said. "Connect it to the valve on the tank and bring it over to the pump."

Jasper hooked the second long two-inch flexible suction hose to the intake of the pump. "Isn't this the wrong way?" Jasper asked. "We'll be pumping out of the tank into the well, won't we?"

"Yes," Greg replied with a big grin. "But believe me, this ain't no well yet. Just a pipe in the ground with a screen. We're going to make it into a well. Now, fire up the pump at an idle."

Jasper did so and saw the water slowly boil up out of the ground much as it had when they were using the drill stem. "Start backfilling, using the coarsest sand," Greg said as he watched the flow. Jasper wasn't too sure how much of the sand was going back into the hole, but Greg kept him after it until all the sand that had come out of the hole was back in it.

Greg stopped the pump and changed the elbow on the top of the well for a threaded cap. He had Jasper put the next best sand in the drill hole, and then the dirt. Greg began removing hoses from the pump and Jasper got a little worried.

"Okay, that's good," Greg said when all the drill cuttings were back in the hole. He put the elbow back on the well and connected it to the intake of the pump, moving the discharge hose away from the pump area.

Using the hand pump, Greg primed the well and then started the engine driven pump. He had Jasper move over to it and when Greg gave him the signal, Jasper killed the engine and Greg turned a ball valve mounted on a tee in the intake line of the pump. Jasper could easily hear the air whoosh as the water drained back down into the well.

Thankfully, Greg explained. "We pumped clean water in slowly while we put the coarse sand back. That filtered any fine stuff out of the screen and up while the largest particles of sand kept falling. We have the coarsest sand available around the screen for best water flow. I capped it while you refilled the hole so it wouldn't drive the dirty water back into the screen."

Greg closed the valve and had Jasper start the pump again. It took a few seconds to prime since Greg hadn't used the hand pump to prime it. They did the same thing several times and Greg said, "This is making a well out of a hole in the ground. Some of the guys around here just punch the hole, put the screen and pipe in, and backfill. They don't flush it or prep it in any way.

Maybe you have a well and maybe you don't. I don't walk away until she's pumping the best I think she can. This pump and release surges the formation kind of like a frac process does on an oil well. Okay. Let's see what this thing can do."

This time when Jasper started the pump Greg walked over to the discharge hose. A full two-inch diameter stream was coming out of the hose for an inch or so before falling to the ground.

"The bucket," Greg said, nodding toward the bucket in the back of his truck. Greg filled and emptied the bucket a few times, running a stop watch each time. The bucket was filling in six to seven seconds. "Over twenty-five-hundred gallons an hour," Greg said. "Not the best I ever got... That was a full thirty-six-hundred gallons. But this is a good well." Greg brought the hose up to his lips and took a sip of the water. "Not too bad tasting."

Jasper tried it and agreed.

"Have Millie make some sun tea with it. If it's nice and clear it's really good water. If it's dark, well, I'd have it tested, but I doubt you'll want to treat it for irrigation use. If you ever want it for drinking water, I'd see what the tests say and act accordingly."

"Thanks, Greg," Jasper said, shaking his hand.

"Let's get this cleaned up. I'll be ready for that barbeque by the time we're done."

It took a little while to get everything loaded back on Greg's truck and the holes filled up. "You say you have a pump to use?" Greg asked after he closed and latched the tailgate of his truck.

"Yep. In the shed." Jasper showed Greg the three-horsepower gas engine Sears lawn pump he'd picked up at a garage sale and rebuilt. "It pumped out of a tank after I fixed it," Jasper said.

"Should work fine, if you got the seal in properly. You want to hook it up now?"

"Don't have the stuff. I'll get it next week and hook it up next weekend. I like that flexible suction hose you use. Where'd you get it?"

"TSC. I use it for both suction and discharge, because I use the hoses interchangeably. You don't really need it for discharge, though I would suggest you get it for the intake."

Jasper nodded. "I'll make a manifold and run a bunch of water hoses."

"You need plenty of discharge. Run the pump at slow speed if you've only got a couple of hoses going. If the pump housing starts getting even warm, you aren't getting enough flow to keep the pump cool. Really have to watch this kind of pump using garden hoses."

"I'll keep that in mind. Here's the money for the materials." Jasper took out his wallet and gave Greg the cash he'd promised for Greg's out of pocket expenses. "Come grab a beer, Greg. I'll get the steaks on the grill."

"Steaks! I was expecting brats or chicken. Not steak."

"Means a lot to us to get this well in," Jasper said quietly.

"Aw! No big deal. I punch these in all the time."

Millie took out a bottle of Greg's favorite beer from the cooler, opened it, and handed it to Greg when he walked up to their small patio at the back of the trailer.

"Thanks, Millie," Greg said shyly.

"That is quite a process you've come up with," she said, fussing a little over the food set out on the picnic table.

"Once I figured it out, it is pretty easy. There's lots of guys doing it. But I think I do it better than anyone else." There was no false modesty there. Greg had a point. He did have a good system. He'd never had a failure. At least, not when he'd been allowed to drowse.

Jasper and Millie were surprised and pleased when Greg limited himself to four beers while he was there. He seemed to thoroughly enjoy the steaks, baked potatoes, and boiled corn, helping himself a little sheepishly to a second steak."

"That's fine, Greg," Millie assured him. "I got two for you."

Jasper yawned about that time and Greg finished up his meal. "Thanks for having me over, guys," Greg said, turning to the couple. They'd carried the leftovers and the rest of the beer out to the truck. Jasper was standing with his left arm around Millie.

"No," Jasper said. "You're a good friend. Thank you for helping us out." Jasper grinned then. "We'll save a bean or two from the garden for you."

Greg laughed and climbed into the truck. Jasper closed and locked the alley gate when Greg pulled out. He yawned again as he and Millie walked back to the trailer to begin that cleanup. Jasper marked off one more project on his mental list. Getting that well was a key element to their continuing preparations.

Jasper got the pump connected and running on Thursday. Alvin had called and scheduled a wood cutting run for Saturday. The barn raising was put off until the next week. Jasper smiled when a disappointed Alvin said he just couldn't depend on his family. Jasper got a pickup and trailer load of cut and split wood for helping Alvin, whose son, who should be doing it, lazed around the house.

Alvin met Jasper at the trailer, Jasper having stopped coming in from work just long enough to pick up the food that Millie had prepared for him for the day. Jasper took a quick nap at lunchtime and was able to work safely until they quit just prior to sunset. They had been cutting up the trees they'd downed and trimmed out early that spring. The day had been spent cutting the wood to length and splitting it with Alvin's portable hydraulic splitter.

When they climbed wearily into their respective trucks, both men were tired but satisfied with the day's work. Jasper had his pickup and pickup trailer loaded to the gills. Alvin's one-ton dump bed was loaded to overflowing, with the heavy duty tandem axle mesh sided trailer almost full to the top of the sides. There was another load for Alvin to pick up on Sunday, but he would do that alone, knowing Jasper really didn't like to work on Sundays.

Millie had picked up a ride to work since the truck wasn't available, but waited and did some additional work at the Consignment shop while she waited for Jasper to pick her up. They stopped and had dinner at a café, Jasper barely able to stay awake during the meal. Millie drove the truck and trailer home when she insisted Jasper was too tired and she needed the practice with the trailer.

Jasper unloaded and stacked the wood Monday morning before he turned in again to get his afternoon sleep for the graveyard shift. He and Millie didn't have a wood burner yet, but they fully intended to get one at some point and wanted plenty of seasoned wood for it. The wood was stacked on a metal rack Jasper had built and covered with scraps of tarps that he'd salvaged.

The following Saturday Alvin's relatives showed up and he called Jasper early Saturday morning to ask him to help with the barn. Jasper and Millie packed lunches and headed for Alvin's. They were a bit amused at the confusion of the group and Alvin's exasperation with them. Alvin took Jasper and Millie aside and quietly apologized.

"There is no need, Alvin," Jasper said. "We'll do what we can to help. If we can't get finished, I'll come next Saturday and help you finish up. Millie works next Saturday."

"I feel like I owe you for coming out into this mess."

"Oh, no," Millie replied. "You've been good to us. We owe you a great deal and want to help here. We'll be doing some construction ourselves one day and need the experience."

"Well, that's a switch. Half my family thinks I should just hire this done. But I really want my family to learn to work together. There are some bad times ahead of us and I don't know if my family will be able to live through them without my help. I need them to be able to help themselves as much as possible."

Jasper had never heard Alvin speak about bad times ahead. He seemed to have plenty going for himself and his immediate family. Alvin and his wife both had good jobs. They had the place in the country where they kept the horses for the girls and a very loud motorcycle for their son.

Millie and Jasper exchanged glances when Alvin wasn't looking. Was Alvin a closet prepper?

One of Alvin's relatives came over and Alvin turned to Jasper and Millie again. "If you're still willing to help, I guess the rest are ready now."

It took the rest of the morning and all afternoon and evening before the new horse barn framework was up and secured, and the roof and external sheathing applied. There had been a break for lunch, but it had been a short one. But Alvin did take everyone that helped out to dinner.

Tired, but full of good food, Millie and Jasper went home, wondering if they might have not only a friend in Alvin, but a fellow prepper that might be an ally in the future if the future brought some of the things Millie and Jasper thought it might.

That winter Jasper was finally able to conclude a deal he had been working on for several months. A small factory near the outskirts of town had been shut down for years and ownership of the property had been in dispute ever since. Jasper had no intention of trying to start the factory back up. What he wanted were the materials that made up the building.

The ownership had been established and the owner wanted the property, without the old building. Jasper got the salvage rights and eight months to clear anything he wanted from the building before it was destroyed and the remains taken to a landfill.

Every spare moment Jasper had for that eight months was spent stripping the building of copper wire and copper plumbing to pay for the laborers he hired to carefully dismantle a portion of the structure itself. He took truck load after load of masonry block and brick to the property. He had to hire a high lift, long reach forklift to get some of the structural steel from the roof system.

A self-contained high lift work platform, also rented for a couple of weeks, allowed Jasper's workers to take out almost all of the metal framed glazed windows that went around the building just below the eaves.

The only breaks he took during that time, other than observing the Sabbath and Christmas, were three hunting trips with Alvin, each one a quick one. Alvin would have loaned Jasper a rifle and a shotgun for the trips, but Jasper and Millie decided it was time to arm themselves for future hunting trips they would do on their own.

Jasper researched defensive guns as well as hunting guns on the internet. He and Millie ruled out the high dollar semi-auto main battle rifles because of expense, and the lightweight combat carbines because of their less versatile cartridges. Jasper wanted something in a versatile, powerful cartridge that would do for hunting, but had at least moderately good defensive capability. Alvin suggested a military surplus bolt action, but Jasper found an alternative on his own.

He narrowed the rifle choice down to either a used Savage 99 lever action in .308 Winchester or a used Marlin 1895 Cowboy lever action rifle in .45/70. As much as he liked the old west appeal of the Marlin, and the short and medium range power of the .45/70, he decided on the Savage 99. The .308 was more versatile, and according to some of the preparedness forum entries on the internet, it could use an adapter to shoot .32 ACP pistol rounds for small game that the .308 was too powerful for.

He paid a bit more for the gun than he wanted to, with Millie's approval, but there just weren't that many around that were for sale. People with Savage 99's seemed to really like them and didn't want to sell.

Jasper didn't know how lucky he was to find the rifle with an original Pachmayr Low-Swing side mount scope mount. The original scope was fogged and would have cost more to repair than the used Bushnell scope Jasper got in another deal. Again, due to his research on the internet, Jasper had a receiver sight added to the rear of the action to use with the existing front sight when he wasn't using the scope.

For the two duck and goose hunting trips, Jasper, with Millie's help, picked out a twenty gauge Stoeger side-by-side coach gun. It would be Millie's last ditch defensive arm and she wasn't too sure she could learn to use a pump and a semi-auto was out of the question.

Having talked to their Minister, Millie and Jasper decided that recreational shooting was okay on the Sabbath, so they took a couple of Sundays in a row to learn to shoot both weapons, in plenty of time for Jasper to go on the hunts.

Though they went hunting fairly close to where they lived, it was easier and cheaper to stay overnight two nights to get in two full days and one partial day of hunting. It was well that they had the time, for it wasn't until the Monday of deer hunt that Jasper got his doe.

Alvin helped him dress it out, and it was with some pride that Jasper took the dressed meat home to Millie for her to finish cutting up and freeze. She had studied up on the internet while Jasper was gone, just in case. Jasper would prefer to have jerked most of the meat, but they just weren't in a position to do it, so it went into their small freezer.

The duck and goose hunting went great. Jasper was able to get his limits each day. They were able to keep the field dressed birds in Alvin's ice chest until they got them home. The birds, too, went into the freezer, which was full by Christmas. Jasper had gained a great deal of confidence about being able to supplement their food supplies by hunting. The following year Alvin had invited Jasper to go rabbit and squirrel hunting with him.

The Stoeger shotgun would have been adequate for the rabbits and squirrels, but Jasper wanted Millie to have something besides it with more firepower. He found a well used Ruger 10/22 through the newspaper ads and picked it up cheap. The stock had been broken, and the barrel was rusty. Millie and Jasper invested in a new barrel and stock, along with a few factory ten-round factory magazines.

The rifle had come with an even dozen high-capacity magazines. Jasper checked the prices on the internet and smiled when he got the price down to less than a third of what everything would have been new, even considering the new barrel, stock, and magazines. The guy was craving a new Bushmaster M-4 and was selling everything else he could to get the money for it. Jasper picked up a couple of nice field knives and a very good compass in the deal.

Jasper and Millie put back a couple of boxes of the .32 ACP for use in the Savage, as well as an initial purchase of ammunition for each of the weapons. They then began to buy a box of twenty-two rim fire, .308, and twenty-gauge ammunition every month.

The garden was a moderate success that first year. Millie and Jasper were still learning. But they were intent on growing as much as they could in the space they had using the least amount of commercial fertilizer and pesticide. They were using the companion growing method they'd learned about on the internet. The strawberries did so well that the pair put in another five level tower of them in the front yard.

And Jasper began hauling dirt. He kept the trailer hooked to the truck all the time, much to Millie's unvoiced dismay, so he could stop any time he had time at the local sand and gravel pit. As long as he loaded it himself, which he usually did, he got the dirt for free. The sand and gravel he was going to need he had to pay for. But they loaded it into the truck and trailer for him.

As time rolled around the following fall for the garden to get another layer of manure, there were piles of dirt, sand, and gravel here and there on the property. Stacks of cleaned used brick and block were along each hedge along the sides of the property. They had recovered lumber piled on top. The windows from the salvaged building were stacked, layer by layer separated with lumber, in an out of the way area and covered to protect them.

Millie found a canner and more jars in time to fill up all available storage space with home canned vegetables from the garden and jar after jar of strawberry preserves. They still gave away the majority of the produce from the garden for lack of a way to process and store it.

While the weather was still nice that fall Jasper dug away the sod from the area where they were going to build the double wall shelter shown in the MP-15 pamphlet Jasper had down loaded. The design was for the shelter to be set down in the ground a couple of feet, but with the high water table and possibilities for floods, Jasper used some of the dirt to fill in where he'd dug the sod away, and build the level up over four feet high.

He used plenty of water to keep the soil moist as he layered it in place. It was going to take a long time to finish, so instead of renting a one man tamper, Jasper bought a well used one from the rental agency and worked on it until he got it running. That let him tamp each four inch lift of soil as he built up the area for the shelter.

Realizing that it might be a good idea to have some of the other projects he and Millie were planning raised higher than the surrounding ground, he expanded the area he was building up. It took double the amount of dirt he'd planned on, and two months of extra time, but he had a

large area of compacted soil four feet higher than the rest of the property, the edges protected by interlocking retaining wall blocks.

He thought about digging the footings for the shelter that fall, but Millie talked him out of it. He didn't dig primarily for fear the edges of the trenches would slough away in case of bad weather. Millie didn't want him doing it because he had lost so much weight that summer and was always so tired. She just wanted him to slow down some.

But she worried as much as he did about what they were seeing on the news nearly every day. If there wasn't a major natural disaster going on somewhere, there was a new battle between old foes happening. And the weather was so unpredictable.

There were times that summer when the rain had just poured down and others when the irrigation well saved the garden from total loss. Since the shelter was some months from being completed, Millie and Jessie headed for the shelter in city hall when tornadoes threatened that summer. They simply rode out the one minor earthquake shock they felt three days before Thanksgiving.

Thanksgiving was quite a celebration. The two had much to celebrate. Most of the food for the meal was from their garden and Jasper's hunting trips. Things were even relatively peaceful and there were no major weather problems or natural disasters to worry them.

That changed before Christmas. Southeast Missouri suffered the worst blizzard and ice storm on record just before Christmas. The area shut down for four days. Jasper's truck was one of the few vehicles capable of traveling through the mix of snow and ice. He chained up all four wheels before the storm hit and with the Minister riding shotgun, delivered food and water to trapped parishioners of their church. They wrapped several of them in blankets and took them back to the church for the duration.

Jasper had shut off the water to the trailer and drained the lines to keep them from freezing underneath. He then took Millie in to the church to help out, as well as be safe and warm. He wasn't too worried about the trailer. Their underground propane tank was half full and the furnace in the trailer didn't require electricity to operate. He turned down the thermostat to its lowest setting to keep things in the trailer from freezing, and still not use up too much propane.

Jasper didn't limit his help to his own church members. The county Sheriff's deputies asked his help to get to some outlying citizens of the county to again deliver food and water, and to bring people in to shelters that didn't have heat for whatever reason.

When the worst of the situation was over Jasper was able to make quite a bit of extra cash using the truck with the snowplow he'd built for it. He bought a commercial dispenser for the bed of the truck to spread ice control material on parking lots after he'd scraped them with the blade. Even with the cost of the spreader he came out well ahead.

He was still going after most of the city and county vehicles shut down for lack of fuel. Between the loss of power and lack of deliveries to those stations with generators, there was

simply no fuel to be had until the main roads cleared and the trucks could run again. Jasper's one hundred gallon plus capacity kept him going.

They shivered for a while, until the temperate rose after Jasper turned the thermostat back up when he took Millie back home. They looked the place over and there were no signs of any damage from the wind and cold.

Jasper and Millie had a quiet Christmas at home, exchanging only small gifts. They were trying to avoid the commercialism of Christmas and get back more to the religious holiday it was supposed to be. They did gladly accept the Christmas bonus the company gave all the employees, including the watchmen.

The New Year holiday came and went. With it came a small increase in salary for both Jasper and Millie. Millie was getting a few cents more an hour for her alternate Saturdays, and Sara offered her Wednesdays as well. She gladly took it. They were doing okay, but every penny helped. There was no way to substitute anything for the concrete that was going to be needed for the shelter and Jasper hadn't found a way to trade for it. They would have to pay for it out of pocket and it wasn't going to be cheap.

Besides getting the garden in that spring, Jasper began on the shelter. He used the rototiller to loosen the soil he'd so carefully tamped down the previous summer and dug the footing by hand. Jasper had hoped to get rebar from the building he'd salvaged, but that had not worked at all. But the steel shop in town needed some extra help for a month that spring and Jasper took rebar in pay.

When he had the footings dug and the reinforcement in place for the monolithic floor and footing pour, Jasper and Millie tightened their belts and Jasper called the concrete company. It took all the spare cash they had at the moment to get the concrete required for the footings and floor of the shelter. But finally the concrete was in and curing. Jasper kept a close eye on it and kept the fabric spread over the fresh pour damp as instructed by the concrete workers for the time needed for the concrete to cure.

They did without most of the simple pleasures they permitted themselves that cost money that summer. By early fall the concrete was ready for Jasper to start laying the blocks for the two parallel walls that enclosed the shelter. After each lift had time to cure, Jasper shoveled in the dirt, sand, and gravel mixture he'd been accumulating and tamped it down after wetting it.

It went slowly, and Jasper had to stop during the winter. It was another bad one and they had to scrimp again to buy propane, though there was nothing like the blizzard and ice storm of the winter before. There was more snow than usual, though it had come intermittently and hadn't caused much problem. But the snow melt had the ground saturated when the spring rains started.

Once again Jasper put in more than his share of time helping out church members and the county deputies take care of people that couldn't take care of themselves during the floods. They weren't bad and didn't affect Millie and Jasper's place at all, but Jasper had to rest up for two weeks, doing only the watchman job and taking care of the garden. He finally was able to start working on the shelter again. It still went slowly, but it went steadily.

The thick, earth filled walls were at the correct height, which was a couple of layers of block higher than the original design. The shelter was small and Jasper wanted it as high inside as he could reasonably make it to cut down on the claustrophobic feel. That was also the reason he painted it white inside when it was finished.

He had to rent the high lift, long reach forklift again to set the structural steel in place that would support the earth covered concrete roof of the shelter. That done, they had to wait to come up with the money for the concrete for the roof. But they had plenty to keep them busy.

Millie helped Jasper place and lightly tamp brick floors for the greenhouse they were going to build against the south facing side of the shelter. Jasper had picked up two medium sized polymer stock watering tanks from TSC and buried them down with the top edges just above the floor level, back against the wall of the shelter.

When the floor was in place, Jasper began building a wooden framework with the salvaged lumber. As the structure took shape, the salvaged metal framed glazed windows were installed.

The windows were in pretty good shape considering their age and going through the recovery process. Jasper had to replace a few broken panes of glass and re-glaze a few more as he installed them.

The garden was producing well, as were the two strawberry towers. There was still no fruit on the trees, but they were healthy and doing well. The next year would tell the tale for them and the grapes. The nut trees still had a few years to go, except for the original paper shell pecan that was at one edge of the front yard. It produced a few nuts every year, but not as many as it should. Jasper was studying up on why.

Though there was no roof on the shelter yet, just the decking to support the concrete when it was poured, Millie began stacking the cases of glass jar canned foods she was producing on shelves that Jasper had built for her with some of the salvaged lumber. They kept another of the old salvaged tarps over the shelves in case of rain leaking through the forms of the roof.

Jasper had made sure to get his hunting license and migratory waterfowl tags again and went hunting with Alvin several times that year. Millie found the help she needed on line to learn how to can meats. Most of what Jasper brought in went into pint jars that were added to the vegetables in the shelter.

The green house was finished by winter time, but Millie and Jasper didn't try to start a winter garden that year. Jasper still needed to make the growing tables and install a wood burning heater.

They got a break that winter. As usual every few winters there was an exceptionally mild one. They still had plenty of masonry blocks and bricks, and Millie and Jasper decided to expand their outdoor garden beyond the confines of the garden plot. Jasper built raised growing beds

using some of the block and bricks, incorporating gravity feed deep soil irrigation pipes in the beds using the pipe that he hadn't sold to finance the labor on the salvage job.

With the new raised beds and the greenhouse, the regular garden could be used for space intensive plants like corn and potatoes, both of which the two of them loved and wanted. They were able to increase the useable space by planting the various melons they liked at the back of the garden, along the fence, and train the vines up the fence on rails that Jasper had attached for that purpose. Jasper used some of that year's load of manure from Alvin to sweeten the raised beds for the following year.

Some of the blocks were used to make a four bay mulching assembly, making it easy to turn the mulch when needed. It would eventually be used on the raised beds and in the greenhouse, with the yearly manure delivery going to the regular garden.

Christmas that year found the family a soon to be real family. Millie was two months pregnant. They'd always planned on children, and tried, but had never been blessed until that fall. Both were ecstatic, despite the realization that a baby meant a lot more expenses in their lives. They adjusted their plans accordingly.

The only major expense they allowed themselves, besides preparations for the baby, was the concrete for the roof of the shelter. It was poured the first good day that spring and allowed to cure properly before Jasper rented the high lift, long reach forklift to lift the large box he built and filled with earth up and down so he could spread the fill material on the roof, inside the outer, extended block wall of the shelter.

Jasper had laid down drain lines around the perimeter of the roof and covered the entire roof with plastic sheet before he filled the area in. One of the changes he'd made to the shelter design had been to build stairs up one side of it so they could use the dirt covered roof of the shelter for additional garden space. That would come later.

For the moment, Jasper replaced the sod he'd cut before starting the process and stored, keeping it damp year round. It hadn't fared well, and it took the entire amount to piece out the roof of the shelter with good sod.

The next low cost project Jasper started was to lay down another brick floor on the raised section of the property next to shelter on the side facing the garden. Using a combination of block, brick, lumber, and salvaged sheet metal he'd made a deal for the previous summer, Jasper built a new yard shed over that winter between Christmas and spring, when he wasn't otherwise engaged. The material from the old shed was incorporated into the new, the contents of the small building stored in the shelter temporarily.

He built a less elaborate shed on the north side of the shelter and began stacking the firewood he got every year helping Alvin in it on the brick floor. The final addition to the outside of the shelter were worm beds with rabbit hutches built over them, under the stairs that went up to the roof of the shelter. The area could be fully enclosed if the temperature got too cold for the rabbits and heated with a tiny shepherders stove that Jasper built out of scrap steel.

Millie lost the baby in the second trimester and she and Jasper mourned the loss, and then carefully packed away all the baby things they'd already accumulated and put them in the shelter. Millie had been advised not to let herself get pregnant for at least two years.

Perhaps because of the loss of the baby, Millie eagerly took on the responsibility of the rabbits they had been planning on raising for their own use and to supplement their income. Jasper managed the fish in the two stock tanks in the greenhouse, using the worms to feed them. The worms fed on the droppings from the rabbits. The rabbits lived on items from the garden most of the year, with rabbit food fed to them when fresh food wasn't available.

Just as she'd not been able to take game when she went along on a couple of Jasper's hunting trips, Millie couldn't bring herself to butcher the rabbits. She was okay handling the carcasses after Jasper had butchered and cleaned them. Some she canned and some she sold, just as she did the fish that Jasper's fish tanks started producing.

After checking the town statutes, Jasper found out that chickens could be raised legally in the area of town they were in. A bit reluctantly, out of anticipation of the neighbor's possible squawks because of the squawks of the chickens, Jasper built a moveable chicken pen and henhouse. The chickens got some of the worms, too.

But the birds weren't too noisy, and the thick hedges dampened the sound to each side and the solid alley fence dampened the noise to their across-the-alley neighbors. The neighbors didn't seem to mind as long as they were able to buy the fresh eggs and chickens the Willinghams were now producing, along with the generous gifts of fresh vegetables during the height of the garden harvest.

Just as scheduled, the fruit trees began to bear that summer. It hurt Jasper initially to thin down the fruit as it began to show, but the experts on the internet were adamant that the process was critical for good yields and the good health of the trees. All the thinned fruit went right into the mulch bins.

That fall Jasper came home to find Millie nearly at the point of collapse from having been in the kitchen nearly constantly for several days, canning produce. He vowed to prevent that from happening again and immediately began to construct an outdoor kitchen for use during the canning season.

There were still plenty of bricks and blocks from the building salvage project and feeling guilty about Millie's condition, Jasper built something more elaborate than he might have otherwise. He did acquire more fill dirt and built up the area to the same height as the shelter mound. Though he ran a gas line from the propane tank to the outdoor kitchen and installed a couple of propane side burners, the main cooking apparatus was the wood stove with oven that Jasper built from plans he found on the internet. He had to buy the firebrick for the stove, but decided it was well worth the money to make it easier on Millie.

Besides the wood stove and oven, and the side burners, Jasper piped water to the structure and put in a small sink that drained into a bucket that could be emptied into the cleanout for the sewer line at the back of the trailer, or used to water the garden. There was a large flat work

surface for the food preparation activities. The entire structure had half height walls and a roof. The area between them was fiberglass screen to keep the bugs out but allow circulation.

Fortunately he'd built the thing so the additions he decided on in the middle of the project worked right in with almost no modification of the original construction. At the south end of the brick structure Jasper mounted a large C-band parabolic dish he got for free from one of the neighbors that had switched to cable vision. He cleaned it and painted it with reflective paint.

Above the focus point of the dish Jasper built a large multiple tray solar dehydrator. It had screened sides, enclosed at a distance with light plywood to allow air circulation all around the trays. A piece of heavy metal was suspended at the very bottom that the reflector focused the sunlight on, heating it up to provide low heat to help dry the items on the trays.

At the north end of the outdoor kitchen Jasper built a small wood burning pit that was piped to a tall smoker assembly. They would be able to smoke and cure some of the meat they were producing. All the hickory wood that was Jasper's cut of the firewood he and Alvin cut every year was consigned for use in the smoker.

The smoker didn't get used at all that winter, though Millie and Jasper were able to get a few trays of fruits dried in the dehydrator. The next year both additions got as much use as the canning kitchen. Jasper bought a heavy duty manual meat grinder and ground up the entire deer he took during hunting season and made jerky strips out of it with a kit from Cabela's.

Without any really expensive projects going, Millie and Jasper had the money to buy a whole hog and a half of a beef which they processed by jerking, canning, curing, and smoking, with Jasper making sure he did his share of the work.

The entire electrical system in the US was getting old and overloaded. Millie and Jasper began to find themselves out of power on a fairly regular basis. They shopped and shopped for a small generator, but just could not find one with the capability they wanted for a price they were willing to pay.

They spent more than one night in the shelter when the power was out during a one-hundred-plus degree heat wave. With the thick walls of the shelter the temperature stayed below seventy even during the sustained heat.

With the nearly unlimited irrigation water they had available their garden and orchard thrived even with the high temps. Millie bought a second canner that summer and several more cases of jars, with the additional money they had available from her new side business at the consignment shop, since the money wasn't going to big projects.

She had run across a home business idea on-line and fell in love with the idea. She talked to Jasper about it and they saved up for three months to purchase a #10 can lid sealing machine, along with a case of cans, and some blank computer labels from the website. The business was packaging small gifts in the cans and selling them. A person could select items at the consignment shop to put in the can, or bring their own items to be canned.

Millie also sewed items to can for pre-made gifts. The business wasn't all that lucrative until the sealer was paid for, but after that it was gravy. And the side benefit was that Millie and Jasper began dry canning much of the food they dehydrated and jerked, using oxygen absorbers in the cans for long term storage. They didn't bother with the fancy computer generated self stick labels for their own canning, just marking the contents and date of the canning directly on the cans with an indelible marker.

They were also finally able to make a couple of double payments on the mortgage, though it was for only two months. They went into 2008 in the best physical shape they'd either ever been in, and also the best shape financially. They didn't have much of a savings, but they were able to set aside a small emergency stash of cash for just-in-case emergencies.

They were producing most of their own food, buying only staples at the store. Millie had always wanted to buy in bulk to save money, but had never been able to do so. They always seemed to need a little of a lot of things all the time.

But now, with food put by, Millie began grocery shopping only once a month, for the staples they needed. She had been buying the powdered whole milk that Jasper liked from a long term storage food source and after talking it over with Jasper, they invested in a Country Living grain mill and bought a #10 can of hard red winter wheat for Millie to start experimenting with.

She had baked bread from time to time using commercial flour, but they usually bought the seven-grain bread both of them liked. It took a while and another can of the wheat for Millie to get the hang of making the whole wheat bread in the outdoor kitchen wood fired oven. But they finally switched over completely to the home made bread from home ground flour. They bought a six-gallon Super Pail of the wheat for immediate use, and another for storage.

Millie baked once a week, and with the nutrition of the bread, they had one day a week where they ate only a whole loaf of bread apiece, and had only water to drink. Both seemed to be healthier as their diet had changed over to home grown foods.

Jasper and Millie both liked honey in their hot tea, and had been buying the small containers for a long time. But the more they read on the internet about the benefits of natural raw honey, they became convinced that it was what they wanted to start using.

Both wanted to get beehives to ensure good pollination of the garden and orchard, but Millie was allergic to the stings and they couldn't take the chance. The garden and orchard were doing fine with the natural bee population so Jasper started looking around the area for someone with honeybee hives that would trade raw, unprocessed honey for labor. If he could get several five-gallon buckets of it, they would have enough to last them for years.

He finally found someone through Alvin. It didn't surprise Jasper very much when Alvin went along and paid cash for four buckets of the honey when Jasper collected his after working part time for six months around the man's large farming operation doing odd jobs and mechanic work. The honey was stored in the shelter. Millie would transfer a little each month for use that month, from the bucket to a stainless steel honey canister that Jasper had found for her.

The two years had passed since Millie's first miscarriage and she and Jasper again let nature take its course. If she got pregnant again, fine. If she didn't, well... that was God's will. They were trying.

And it worked. Millie again found herself two months pregnant at Christmas time. And it was going to be twins. Jasper began looking for a decent paying day job so he could be with Millie during more normal hours.

He had been applying for a job with the county maintenance crew every time an opening came up for several years. But Harry Harleson had been a county commissioner for years. He and Jasper had been mortal enemies since high school. Jasper was sure that Harry kept him from getting any county job.

Harry lost his seat on the commission amidst a stew of accusations of wrong doing. Jasper's application was approved for a job on the county maintenance crew a week after he put it in for the newest open position. Not only was Jasper pay going to be significantly higher, he would get medical and retirement benefits.

But Millie and Jasper gave up on ever building their dream home. They were going to have to do something. The forty-foot park model trailer was soon going to be too small for the family.

The two had long talks about the situation and finally came up with a plan. Again, it certainly wasn't their dream house, but it would be much better than what they had. Never one to laze around, except on Sundays, after the animals were taken care of, Jasper started two new major projects.

Millie had been after him for a long time to find a day job, since the graveyard shift was so hard on him. He was putting in the same number of hours, with the projects going, but he began to look a bit better and wasn't as tired all the time the way he had been before, despite the equal hours of work.

The first project Jasper hoped to finish before the birth of the babies and it got both financial and time priority. They were going to need a vehicle with a rear seat once the babies came and Jasper and Millie knew exactly what they wanted. And Jasper knew how to get it. The same garage where he had built the pickup was more than willing to get his part time help for the use of the garage for him to build a new vehicle.

It went well, and quickly, as Jasper was basically building a rig identical to the pickup, except it would have the body of a Suburban when he was finished. Another reinforced and gusseted frame from a wrecked pickup. Another Pontiac Super Duty 455 engine. Another five fuel tanks. The Suburban body was a year younger than the pickup, but the design had not changed cosmetically in the two years

When he was done two weeks before Millie's due date a person looking at the vehicles from the front wouldn't be able to tell which was which. Since the raw material was available in the form of another wrecked one ton pickup, Jasper went ahead and made a second trailer, also

nearly identical to the first one he'd made for the pickup, including built in fuel tanks to extend the range of the towing vehicle.

When he wasn't working for the county, getting all the overtime he could get, or working on the Suburban, Jasper was preparing the property around the park model trailer for additions to be added to the trailer.

The work would be done in several stages, as money and time permitted. Jasper and Millie's goal was to have the first half of the construction done before the babies turned two and the second half done before they were three.

They managed the feat, even on the accelerated schedule they adopted when Millie got pregnant with their third child a year after the twins were born. Jasper was able to apply all his spare time to the house project after the Suburban was done. Always the horse trader, Jasper acquired most of the materials he needed for the construction by trading labor for them, though the garden, orchard, and animals were making enough to help defray some of the cash costs.

Jasper got the footings poured and the piers and foundation built for the expansion on all four sides of the existing park model trailer. The ends were only being extended slightly. No living space, just the same exterior treatment the entire structure got as it was completed.

The space enclosures were basic good house building with twelve inch insulated walls and a hipped roof that covered the entire three sections of the house, with a generous overhang all around.

But the additions for better security were the main components of extra expense. Using techniques that Joel Skousen had developed that Jasper read about on the internet, Jasper added a bullet resistant half height wall from the ground to the level of the bottoms of the windows. The addition tapered from twelve inches thick at the bottom to eighteen inches at the top. It was made of steel studs and steel horizontal structural elements and went around the entire structure. The cavity made by the sloped structure faced with steel siding was filled with three-quarter inch minus washed gravel.

The conventional windows were covered with Lexan sheets, that while not bullet proof, would maintain their integrity if holed by a bullet. The bullet might break the glass behind the Lexan, but there would still be a window. For additional protection Jasper made working shutters for the windows that could be closed from the inside. They were made of three one-quarter-inch panels of tempered steel sandwiched with two layers of five-eighths marine plywood.

Again, not bullet proof against heavy rounds, they would stop smaller rounds and shotgun blasts. Jasper wasn't worried about bullet holes in the area above the gravel wall. They could be easily patched. Glass windows couldn't, thus the Lexan, which could. The doors were built in the same manner as the shutters, with additional shutters that could be closed over the doors.

The slight reverse taper of the projectile resistant wall coupled with the wide overhang of the steep pitch metal roof resulted in a striking looking dwelling that still met all building codes.

Besides being protected fairly well from projectiles all around, Jasper plumbed in some used pipe and sprinkler heads on the roof and under eaves. The roof and walls could be washed down with water in the event of a natural fire, or an attack with Molotov cocktails.

The innocuous looking vents in the top layer of the three full block plus cap block foundation wall and gravel wall were built by Jasper to swing open easily from under the house so they could be used as gun ports. There was the normal steel access door in the foundation in the back wall for under-house access, but there were also two trapdoors in each of the new front and back sections of the structure to access the area, just as there were two places to gain access to the attic for minor, lightweight storage.

Though they kept the propane furnace that was in the park model trailer, Jasper installed an outdoor wood burning furnace to provide heat for the completed house. Even the homebuilt redwood hot tub on the new covered rear wooden deck didn't use propane. It was wood fired.

The construction, when completed, gave Jasper, Millie, and their children five nice bedrooms, two full baths plus the original small bath of the park model trailer, as well as two storage rooms, a real laundry room, and a large living room. All at a tenth of the cost of having a much smaller and less protective home built, even a manufactured home.

Jasper and Millie had an open house for their few friends after the final touches had been added to the house. Though simple and plain by almost all standards, the house impressed their friends for the fact that they had done it themselves, for a ridiculously low cash outlay, though they didn't know exactly how much. They just all knew what Jasper did for a living and he couldn't have had much to work with, especially after the babies were born and Millie gave up her jobs to stay home with them.

The only comment approaching negativity was one about how small the back yard was now with all the garden and yard buildings. Jasper smiled an inward smile. Alvin's wife didn't have a clue. It was more than worth it for Jasper, Millie, and the children.

Alvin took Jasper aside and asked for a tour of the rest of the place, without his wife along. Jasper had a quick word with Millie and slipped out the back door with Alvin. In the years that they had been working together gathering firewood, hunting, and the occasional helping hand at Alvin's, Alvin had never really looked over the property.

Jasper looked at Alvin about halfway through the quick tour. Alvin's mouth was open and he was looking around in awe. And that was before Jasper took him into the "storage shed" shelter.

Alvin was acute enough to recognize the thick walls and right angle turn into the space for what they were. Elements of a fallout shelter. Just before they went back inside the house, Alvin stopped Jasper and said, "I don't want to sound superior or something, but how did you do all this? I make ten times what you do and I don't have a fraction of what you have, in terms of taking care of myself and my family. You have a full fledged fallout shelter, for heavens sake!"

“You know me, Alvin,” Jasper said softly. “I just take things as they come and do what I can, one project at a time.”

“And work hard all the time. I don’t think I could do it. But I’m worried about the future. The world situation. Global warming. All that. I can’t get Alice interested. All Lance cares about is his motorcycle and iPod. The girls love the horses and take good care of them, but what will I do if things go bad? Look at what happened when the subprime lending market collapsed. I lost almost a million dollars I had invested. It cut my net worth in half.”

“I don’t know what to tell you, Alvin. I’d certainly be glad to help in any way I can, but I sure don’t know what to tell you about getting your family on board. It’s never been a problem with me. Millie has been right there, pitching in, right from the start.”

“Yeah. You’re lucky there. She’s a trooper.”

Jasper was 31, Millie 30, and the youngest child was two at the time of the open house. Much to Millie’s relief, primarily fear of Jasper having a heart attack, Jasper slowed down some, to spend more time with the children. They would start home schooling the twins in another year.

But Jasper was Jasper and he needed a project to work on. They’d never found a suitable generator and Jasper wanted reliable, constant power for a few things. What Jasper did was begin to accumulate cheap LED lights and used deep cycle batteries whenever he could get his hands on either. Then, as finances permitted he bought solar battery trickle chargers for the batteries. He set up a battery with solar trickle charger in each of the buildings, to provide light when needed.

He also wanted power for the computer so he set up another system in the house to use with the 12 volt power cord that came with the computer. He added several of the LED light fixtures in the house and shelter, with their own batteries and solar trickle chargers.

Though they only used a little propane in the house kitchen range and hot water heater, when Jasper found a used thousand gallon aboveground propane tank he traded for it and made arrangements to have it moved to the property. He set it directly over the buried tank and slowly began to fill both, buying a hundred gallons of propane a month, year round, until both tanks were full.

The tank had come from a farm and had a wet leg so Jasper could fill propane tanks from the new tank. He began to scrounge some up, cleaning and painting them, getting those that needed it recertified and modern valves installed until he had almost another five hundred gallons of propane in portable tanks ranging in size from twenty pounders to one-hundred pounders. He didn’t really have a use for them, but the opportunity had presented itself, so he took advantage of it.

He did find a use for some of them, losing several in the process. The blizzard and ice storm of several years previously had been called a once in a thousand years storm. The one the area got the winter of 2011/2012 put it to shame.

With Millie and the children safe and sound at home, Jasper, in his position with the county, again helped out getting supplies to people and people to shelter using one of the county trucks until it ran dry. Alvin was in the process of getting a new truck and had sold the Dodge one-ton with dump bed, so didn't have anything that would move during the bad weather. Jasper picked Alvin and his family up and took them into town to the shelter.

Jasper trusted Alvin to drive Jasper's pickup, so took him home to pick up it and the trailer so he could help with the rescue efforts. When they were taking a break at one of the shelters Alvin told Jasper, "I always kind of felt sorry for you having such old vehicles. I had no idea what you had were in such good shape and so capable."

Jasper smiled. "They do okay."

They dropped the conversation when a very tired looking deputy came over and asked them to deliver some hay to one of the local farmers, and pick up a family that got stranded on the highway trying to make it in to the shelter. "We just don't have anything left suitable for the jobs."

Jasper and Alvin split up and carried out the tasks they'd been asked to do. They kept it up for five full days, with the sad task of picking up some bodies of people that had died because of the severe weather.

Alvin was a bit green around the gills when they dropped the bodies off at the county morgue, each one having brought in three bodies in the trailers.

Millie was glad to see Jasper get home, but they'd been snug and secure. Millie still worried about Jasper's heart due to his father's chronic heart problems, and Jasper's several years of hard drinking.

Fuel had jumped to over five dollars a gallon since Jasper had helped during the last blizzard. He submitted a request to have the fuel he'd used in his two vehicles replaced. The county, thankful for the help, agreed. It was two months before Jasper got the fuel, but he did get it. The same couldn't be said for a few of the small propane tanks he'd handed out to people that had run out of propane because of running their furnaces at full blast for such a long time.

But both vehicles were full when the gasoline became available. Jasper kept them that way most of the time. So with the thought of future supplies of fuel in mind, Jasper went shopping for an inexpensive gasoline tank and stand. He couldn't find one so went to TSC again. They had one. The manager of the store was one of the people that Jasper had helped and cut him a good deal on the tank, stand, and dispenser.

With the tank set up near the propane tank, Jasper had the truck delivering fuel to the county put his two hundred gallons in the new tank, plus three hundred more that Jasper paid for out of the money he knew he would be making during the clean up.

He misjudged the situation slightly and he and Millie ran tight on cash when Jasper couldn't do as much of the cleanup for individuals, which paid better than the county overtime, which Jasper was putting in doing cleanup on behalf of the county.

But he had it and kept the tank topped off religiously the same way he'd always kept the vehicles topped off. It was easier now, since he could refuel at home every day and get a gasoline delivery every month to keep the tank between half full and full.

As bad as that winter was, the summer turned out to be much worse. Jasper had never really believed much in global warming, especially with the recent severe winter weather, but he was starting to change his mind after the temperatures began hitting the one-hundreds in late June and didn't drop significantly until late September of that year.

He spent quite a bit of overtime for the county delivering water and ice to many of the same people that he'd delivered food and water to during the blizzards. He also brought many of them in to cooling shelters if they had no air conditioning or couldn't run it when the power was out. Which it was often, again.

Then that fall he did much the same thing due to heavy rains that began to cause flooding in the area, including his residential neighborhood. The property was on a gentle upslope from the street. At its worst, the water came to within two inches of getting into the house and over the deck, and just covered the garden with an inch or so. The alley was right at the upper level of the flood water. At least it wasn't a raging flood. The water was moving, but slowly, as it rose.

Millie sweated the rising water out. Even if the water did get into the house, she could still take the children across the deck, onto the outdoor kitchen mound which was an extension of the shelter mound. There was still more than a foot of freeboard for the outdoor kitchen and the shelter.

Jasper honored his duty for the county and worked, taking only enough time to raise a sand bag revetment in front of the entrance of the shelter, giving another two feet of protection to the shelter itself, above the mound.

He didn't think that would happen, for before it reached the floor level of the shelter the water should be running over the alley and down that side of the slope. There just wasn't much way for the water to rise more than a couple of inches higher than the alley. He also moved the chicken tractor and henhouse up on the small open area of the shelter mound to keep them out of the water.

The rains continued for a week, with the flooding lasting for several days after the rain stopped. Jasper was only getting home for a meal and few hours of sleep before he went back on duty. The flooding had played havoc with the county roads and all the county crews were putting in overtime to try to get them repaired as the flood water slowly went down.

Millie killed over a dozen snakes that found refuge on the family islands. She didn't even try to differentiate between helpful snakes and the dangerous cottonmouths that were common in

the area. She also drove off several larger, less dangerous animals, though she did kill a couple of possums and raccoons that became aggressive when she tried to herd them back into the water.

They lost much of the garden, as the flood came during the height of the harvest, but with their stored reserves they didn't want for food. They chose to eat on the stored foods and sell or give away the small amount of produce they got after the water went down and Jasper was able to mud his way through the garden in tall rubber boots to recover everything he could when he finally got a few daytime hours off.

With all the overtime Jasper was making, Millie was able to make two more double mortgage payments and still have money left to have a nice Holiday season that fall. They talked it over and decided to build up some cash reserves again, putting the increased salary from Jasper's promotion to crew chief of one of the maintenance crews.

Millie was still able to pick up a Super Pail or two every month of long term storage staples. And though they'd always kept plenty of toilet paper in the house, Millie began to double buy it at the buyer's club they were now members of, and stacked it in the attic of the house. There was plenty in the shelter and Millie and Jasper both thought with the rodent proofing Jasper had done when he built onto the park model trailer, plus poison out in the attic, the paper products would be safe from rodent and bug infestations.

Jason had two more projects he wanted to do, while there was still space in the back yard. He'd guttered the roof of the house, piping the run off toward the street, since the rear of the property was higher. He hated loosing that much water, so rented a tiny excavator and dug a hole to put in a seven-hundred-fifty gallon stock water tank for a cistern to catch the roof runoff.

That was one half of one of the projects. The other half was an identical cistern buried beside the well. Jasper had obtained a couple of small electrical centrifugal pumps that didn't cost too much to run at the low volumes they pumped. The system allowed Jasper to run the gas engine pump to fill the garden cistern and do the actual irrigation with one of the low flow pumps out of the cistern.

The other pump was in the roof catchment cistern so the water could be pumped to the garden cistern or directly to the garden for irrigation if more rain came than the cistern would hold without pumping it. And it gave a couple of options that Jasper liked to have for their water usage.

The city water system was very old and in the past year the water had been off several times for repairs to the system. It didn't bother Millie and Jasper much, as they had stored water in addition to the hand pump on the well if they needed it.

But the quality of the water worried Jasper, and especially Millie, both that of the city lines and the well. After researching it on the internet, they decided to get a Crown Berkey drip water filter with the black filter elements. They got a big discount when they bought four sets of eight cartridges for the filter. They should last for years, as neither the city water nor the well water was actually bad. They just wanted that extra bit of protection for the water they drank and cooked with.

The other project was a sanitation project. Jasper had equipped the shelter with a good high capacity chemical toilet. They'd used it from time to time in the shelter and Jasper always emptied it into the city sewer cleanout at the back of the house. He wanted an alternative, since if the city water system was old, the sanitary sewer system was ancient.

He didn't want to install an outhouse. They were no longer legal for one thing. What he did do was fill another area of the yard near the north hedge and dig a pair of outhouse pits side by side, and line the sides of them with hollow concrete blocks. He made metal covered, tight fitting lids for them.

If the city sewer ever failed for any length of time, Jasper would dump the chemical toilet into one of them until it was full and then switch to the other, allowing the first to compost the human waste to useable form. Then he'd empty the first, ready for use when the second one was full. That was assuming they ever generated that much human waste.

To aid in keeping odors and insects down, Jasper built a large bin with concrete block to hold the sawdust he began collecting when he and Alvin cut wood. Each time he emptied the chemical toilet he would add a thick layer of the sawdust to cover the waste.

At the end of the assembly along the hedge, Jasper used the last of his salvaged blocks and bricks to make a trash burner. He didn't dare use it, as it was as illegal as the outhouse holes, but it would be there if the time ever came when he needed it.

The only thing Jasper now really worried about was the loss of the city sewer system for a long period of time. The outhouse pits to dispose of the chemical toilet waste would work well for that specific purpose, but the gray water was another story.

Jasper and Millie researched several solutions for the gray water but none that were cost effective for them would work in their situation. Jasper talked to the city inspector and determined that private septic systems were, in fact, illegal. The wording was such that Jasper was sure he found a loophole.

He should be able to install a system, but not connect it to the sewer line from the house. He might have to fill the tank with dirt, but that wouldn't be that much of a problem to clean it out and connect it to the house if it was ever needed.

Despite having been friendly and helpful during the construction of the additions to the trailer, the inspector put his foot down on installing the system, especially in the front yard, which was the only place Jasper had left to put it. Jasper began to accumulate what it took to put the system in anyway, he and Millie deciding it was better to have the option than not.

Millie couldn't believe it. Jasper began to slow down a bit more. There were no more major projects. The house was the one they probably would retire in. Jasper continued to get some overtime, but he was spending plenty of quality time with the children and still taking care of their tiny homestead as they had started to refer to it. He'd never not helped with the children

or canning, and so forth, but it had always been at the whim of his work and the necessary completion of whatever project he happened to be working on.

With things going so well at the moment Millie found herself praying hard each Sunday that the life she and her family were living would continue. Such was not to be.

Natural disasters first and foremost in their minds as they had built up their preps, the state of the world was always in the backs of their minds. Tensions had grown and then receded, on no real schedule, but no major shooting war besides that in Iraq had erupted. The family had dealt with the natural disasters that had occurred in the area, including the one moderate earthquake.

The next one wasn't moderate. It wasn't the "Big One," but it was a big one. And Jasper was caught right in the middle of it, working on a county bridge over one of the many drainage ditches that kept the one time swamp fertile cropland.

Jasper felt the ground begin to move and dropped the hand tools he was using to work on the bridge into the bottom of the cherry picker basket. He almost got the basket clear of the bridge before the end he'd been working on slipped from the bulkhead and fell. Almost. The edge of the bridge caught the basket, knocking it down into the water and tipping the truck over despite the properly deployed outriggers.

The movement flipped Jasper out of the basket and he landed awkwardly and hard, right at the edge of the water. The ground shook for nearly a minute and there was nothing the crew could do to help Jasper. The shaking collapsed the edge of the ground where the truck had tipped, allowing the truck to fall on top of Jasper.

As soon as the shaking stopped the rest of the crew grabbed shovels and jumped down into the ditch to dig Jasper out from under the cherry picker truck. Though their radios were still working, and they called in the accident to the country hospital it was four hours before an ambulance could reach the accident site. And it was on the wrong side of the downed bridge.

It took another hour to rig lines to get a basket stretcher over to Jasper's side of the ditch and bring him back to the ambulance in it. He was in pain most of the time, but conscious and managed to get a cell call through to Millie to tell her to stay home with the children while he was being taken to the hospital. Only when things were safe should she try to get to the hospital to see him.

Their definitions of safe were a bit different in the situation. Millie bundled the children up in the Suburban and made her way to the hospital. It took her five hours of searching for passable bridges between their home and the county hospital. She and Jasper had learned about BOB's from the internet and kept enough supplies and equipment in both the Suburban and pickup to take care of the entire family for two weeks.

Millie and the children arrived shortly after Jasper did. His left leg was broken in three places, two of them compound fractures. His right leg also had two compound fractures. Jasper's right shoulder was dislocated and he had a concussion.

The doctors wouldn't let the children in to see their father, but allowed Millie a few minutes with him before he was put in the ICU so they could deal with his concussion. The children were well behaved and stayed quiet at the nurses' station while their mother was gone. Millie took them down to the cafeteria after she'd seen Jasper.

Greg showed up not long after they family sat down to get a bite to eat. "How is he?" Greg asked, coming over to Millie's table.

"Too early to tell, but the doctor that talked to me said that as long as there weren't complications with the concussion, he should be all right. The legs may give him some trouble, but there is no doubt about him being able to walk again."

"Is there anything I can do, Millie? I'd like to help. He's the only real friend I have." Greg was on the verge of crying.

Her heart went out to him. He was a good hearted soul. Greg just couldn't control his drinking. At least not all the time. Jasper had commented a couple of times that Greg was drinking considerably less since he'd put down the well for Jasper. He was trying to clean up his act.

"Could you watch the children for me for a few minutes so I can go to the bathroom in peace?"

Greg's eyes widened. "You'll let me watch the kids?"

"It's just for a few minutes and if you don't mind."

"Of course I don't mind. Sure. Go ahead."

Millie didn't realize how badly she needed to be alone until she was. She started crying and couldn't stop until she knew she needed to go back out to the children.

The children, despite their young ages, had been well brought up, and were familiar enough with Greg from his occasional visits to Jasper that they were behaving themselves beautifully for Greg.

Still, he looked up thankfully when Millie came back, her eyes a bit red, but not crying.

"You've got angels here," Greg said, getting up from the table.

"You should be around them when they're teething. They may be little darlings, but they sure aren't angels." Millie said, picking up the youngest. She patted her bottom and asked, "A few more minutes? Darla needs changing."

"Okay," Greg said, sitting back down. "Like I said, they're angels."

When Millie got back, Angel One was in a determined, though surprisingly quiet, battle with Greg to get as much Jello on him as could be done.

“Junior,” Millie said softly, and Jasper Junior immediately quit struggling and his lower lip started quivering. When Millie didn’t purse the action he was back to his smiling self in a few moments. Millicent was just sitting there quietly. But Millie knew her little twin girl. She was getting close to exploding.

“Greg, I want to get the children down in the hospital shelter in case there is an aftershock. Normally I’d just go home, but I want to stay close to Jasper, too. Would you help me retrieve a few things from the Suburban and get us set up in the shelter?”

“Sure, Millie. Anything.”

It took a little while, but Millie got the kids settled where she could keep an eye on them and their favorite traveling toy in the shelter, and still lend a hand to those still straggling into the hospital shelter.

Greg didn’t want to take up space in the shelter, so he camped out in his truck during the night. He came in to use the bathroom the next morning and watched the still sleeping children again while Millie went upstairs to find out how Jasper was doing.

He was awake, in a moderate amount of pain, but the doctor on duty assured her that the concussion turned out to be nothing to worry about. He’d come out of it not long after Millie had left the day before.

Millie was allowed to stay for a few minutes. When they were alone together Jasper urged Millie to get him checked out. “Millie, I don’t want to be taking up bed space. There must be hundreds of injuries. I don’t want to be a burden on you, either, but I’d rather be at home recovering.”

Millie was adamant. “Not today, Honey. Maybe tomorrow.”

It was actually three days that they, Millie and the Doctors, could force Jasper to stay. Mostly due to his stubbornness, but also because Jasper was right, the hospital needed the bed space, Millie checked him out on the fourth day. Greg had been staying close during those three days and helped Jasper get into the back of the Suburban so Millie could get him home.

Millie had made arrangements to get a wheelchair for Jasper to use at home. Greg loaded it into the back of his truck and followed Millie home. Fortunately cell phone service was back up in areas and Millie was able to get Alvin to come over to help Greg get Jasper into the house.

The next day the two men came back and cobbled together a ramp so Jasper could get in and out of the house in the wheelchair. Jasper fretted during the entire process, watching from the front porch. He said not a word in complaint, but he knew he would have done the ramp all different than Alvin and Greg.

Jasper was not a very good patient. Oh, he didn't make it unduly hard on Millie, but he did make it hard on himself. He was always trying to get up and do something, despite the two broken legs. The shoulder had been put back in place the first day at the hospital and it was healing nicely, so he was able to use the wheelchair to at least get around inside the house and out the back, as long as he stayed on the mounded areas.

He got off once, to try to water the garden and had to drag himself back up the retaining wall while Millie got the wheelchair up it for him, scolding like a wet hen the entire time. At least that was the way Jasper remembered it.

But finally he resolved himself to the situation and let Millie do what she needed to do, and he did what he could, mostly entertaining the kids when Millie needed to be unencumbered. Greg lent a hand with the garden and the animals, as did Alvin, each one coming over for a couple hours every other day, on alternate days.

Knowing how much going to Church meant to Jasper and Millie, Greg showed up that first Sunday the Church had services after the earthquake and helped Millie get Jasper into the Suburban and then the Church. He sat quietly in back during the service and again helped get Jasper back to the house.

Millie saw the Minister take Greg aside on the second Sunday and thank him on behalf of the Church for helping one of its members, and then welcome him to the Church on his own if he chose to come after Jasper recovered.

Which Jasper finally did. And went back to work with the county. The lack of work, despite the benefits the county had, strapped the family for cash, but they managed, due to the production of their little homestead and their stored preps.

It took some time before they were again able to add to the preps, though they were able to maintain the existing level. They sold everything they could produce that they didn't eat themselves for the cash to keep up on the payments for the house and utilities.

But slowly things improved again for them, if not the world situation. About the time the Midwest recovered significantly from the earthquake, so did the Willingham family, financially. The children were old enough to do a little in the garden, and help with the animals, and occupy themselves when Jasper and Millie needed to be busy with the constant chores the homestead required.

Back on their feet with some disposable income, and needing new tires for both vehicles and trailers, which all used the same rim and tire, Jasper worked another of his horse trades, working at a local tire place on Saturdays, taking tires and several extra rims in lieu of pay.

He replaced all the tires on both vehicles and trailers, with two spares each for the Suburban and the pickup, and one spare each for the trailers. Then he did the same thing again, twice, getting one complete duplicate set of mounted tires for the vehicles and a set of tires, alone, without the extra rims.

And he kept the tires he took off. They would be good for a few thousand miles if things went on for a long time, the way Jasper thought it might, or would be a good item for trade since they were a standard size, though larger than standard equipment on most trucks.

The threats of possible war with China that Jasper and Millie had been seeing on the forums for all those years were becoming apparent to many more people now. Not only did the government begin to prepare for a real shooting war with China, many individuals and families began to do so, too. Not like the old time preppers, or even like Jasper and Millie.

Millie and Jasper became expert dry canners, putting up #10 can after #10 can of staples they bought at the buyers club, always using oxygen absorbers to preserve the life of the product. Seeing the writing on the wall, they used every other penny of disposable income to buy the critical items in Super Pails from commercial processing plants.

It soon became almost impossible to find canned tuna and canned chicken in the regular grocery stores. When a new shipment came in, it was usually gone in two days. So was bottled water, coffee and toilet paper. Shortages became the standard and rationing by the stores began to become common. The practice was struck down almost immediately by the courts. "People had a right to buy what they wanted," the decision said. "One individual could not limit another individual."

The federal government immediately instituted rationing for most of the same items the stores had done on their own. It stopped the family's purchases of Super Pails. Any one purchase of a pail was more than their allotment of that good for a month. The sale of #10 cans of LTS food skyrocketed, and so did the prices. Millie and Jasper quit buying in bulk and concentrated on getting all of their allotment and canning what they didn't use immediately.

One of the things that came under rationing was tires. Jasper sweated out the situation for several weeks after the announcement, but no one came calling to insist Jasper turn in everything but the old set of tires. He was set for the duration for tires.

Jasper and Millie's attempt to increase their gasoline supply didn't go as well. They were able to get a second tank, but supplies were scarce enough and prices high enough, that all they were able to get in the second tank was an additional two hundred gallons. Their ration of gas held them at the five-hundred-gallon level in the one tank, a little over a hundred and forty gallons in each vehicle plus trailer combination, and the two hundred gallons in the second storage tank. Since they began to limit their use of the vehicles significantly, they were able to replace the amount of fuel they were using, but couldn't increase the stocks.

They were able to fill both the underground five hundred gallon propane tank and the above ground thousand gallon propane tank. With no more propane than they used on a regular basis, the two tanks would provide them with several years of supply.

When it became obvious that guns and ammunition might become hard to get, Millie and Jasper talked it over, but decided to stick with what they had. They doubled their monthly purchases of ammunition until it came under the ration rules. They then got the maximum they could get each time period. It was less than half of what they had been buying monthly. But the

years of steady buying had put several thousand rounds of three main cartridges and shells they used.

They decided they were as prepared as financially possible. The only thing they worried about was if the Chinese used chemical or biological weapons. They had no preps for such an event, except the shelter could be sealed, though there was no way to filter anything but fallout out of the air drawn into the shelter.

But their tension was relieved when FEMA equipped the county field workers with bio/chem suits and respirators. The workers were able to get the items for their families at greatly reduced cost and Jasper jumped on the chance to equip the family. The children were still too small to use masks, but the discount was good for the child protection packages the company that supplied the adult materials had available.

One of the rationing surprises was the restriction of diesel use to critical uses such as agricultural and trucking operations. The use of diesel in private vehicles was prohibited. There was a huge outcry, for even the farmers were not allowed to use their private vehicles if they ran on diesel.

Only necessary ag, commercial, governmental, and industrial vehicles were allowed to obtain diesel. Only for trucking was the usage not also rationed. However, any truck found idling for more than ten minutes in temperatures higher than 32° F. the driver was fined for a first offense and had his or her license pulled for a second offense.

Even bio-diesel was controlled. All producers, even private ones, were required to turn in all the fuel they produced, for government use, and were paid what was actually an attractive rate, even though it was under regular diesel prices. It was used almost exclusively by the local regulating agency in their diesel vehicles.

Jasper said a little prayer of thanks. He'd considered putting diesel engines in the pickup and the Suburban, but had opted for gasoline engines because of the initial expense. Plus he was a good jack-leg gasoline engine mechanic. He didn't have any diesel experience at all at the time.

Millie and Jasper talked things over, several times, for long times, about Jasper trying to enlist in one of the military services. He felt the draw to help defend the country.

Millie was supportive, to a degree, but she was worried about being able to take care of everything on her own. Even if Jasper used his service pay to hire help for Millie, they would be significantly worse off than if Jasper stayed home.

It turned out to be a moot point. In talking casually to one of the local recruiters, just to get some information, Jasper found out that he wouldn't be able to pass any of the service medical exams, due to the extent of his injuries. Though he was able to work the somewhat physically demanding county job, at his age, the recruiter told him, none of the services would take him. Many county jobs were considered part of the strategic structure of the US. Road maintenance was one of those. It was the reason Jasper had been able to get the bio/chem. protective clothing. To Millie's lasting relief Jasper gave up on the idea of military service.

Jasper Junior and Millicent turned nine, but were already at the fifth grade schooling level due to Millie and Jasper's diligent home schooling regimen. Even Darla, a year younger, was comfortable at the fifth grade level classes, having been exposed to most of the schooling her brother and sister had, even while getting her own, lower grade education.

Going into the sixth grade level, Darla did as well as Junior and little Millie, so Millie just kept them at the same grade level from then on. Unfortunately the local school system did not allow homeschoolers to participate in school extracurricular activities, but Millie and Jasper's church had many social programs going on in the community and the three children's social skills educations were not shorted. They also participated in city and county non-school affiliated sports programs.

With the shortages that began to occur, and the high prices, thievery started to become more common. Greg took a second job as a security guard at one of the local grocery stores. When Jasper asked him about it, a little amazed that he'd been able to pass the drug alcohol screen, Greg admitted he'd quit drinking right after Jasper got hurt, to be able to help out if Jasper or Millie needed him.

He'd become a regular sight at their church and often stopped at the homestead and rode the rest of the way out to church with Jasper and his family on Sundays.

Jasper's north side neighbor died that year of cancer and the house became available. The family wanted to rent out the house to someone that would take care of it. When Jasper told Greg about it he talked to the lady's family and made a deal to move in for very reasonable rent for the area now.

Greg still did his regular job at the factory, the part time guard job, and drilling shallow irrigation wells. The call for the wells had really gone up as utility rates had. With food rationing, more and more people were putting in the newly revised Victory Gardens and were willing to pay the modest cost of one of Greg's wells. He was at least able to continue to get the supplies he needed.

Jasper began to go with him to help on the wells whenever he could and had a decent side business himself of refurbishing small pumps to sell to Greg's clients. Millie and Jasper both felt a bit better about having someone they could trust living right next door to help them keep an eye on the place.

Greg had never been much of a hunter, but after going with Jasper and Alvin a couple of times he started to hunt on his own. He did field dress the game, but always brought it to Millie and Jasper to process for him, giving them half of everything he produced, since he couldn't use it all. They reciprocated with enough produce from their gardens and orchards for Greg to eat better than he ever had in his life.

Jasper and Millie officially invited him to use the shelter any time the need might arise. He took them up on the offer a couple of times when tornadoes threatened that year, for the first time in a few years.

Greg had a tendency to spoil the kids and Millie and Jasper asked him not to be quite as extravagant with them as he was wont to be. He tried, but one would have thought they were his kids if one saw them with him, without Melissa and Jasper around.

What had become considered inevitable finally happened. China declared war on the United States with surprise attacks on the ports of Long Beach and Seattle. The ports were taken almost without a shot being fired.

The Chinese hadn't used their own massive shipping capability, as long had been predicted. All the troops came from their quarters in container ships registered in just about every country except China. That included a couple of US flag ships.

But the second wave was all Chinese shipping. All turning toward one of the two ports from their recorded routes in the Pacific. They were very spread out initially, making it much more difficult than anticipated to sink them.

The ships had seemingly unlimited supplies of light and medium surface to air missiles in the top layers of the container stacks. Losses of US attack aircraft were heavy. The few US Coast Guard ships stationed on the Pacific that had the capability to destroy ships were quickly taken out by submarine launched torpedoes. Much of the US fleet on the west coast were bottled up in port by lack of fuel were kept there or destroyed by the same subs.

The same anti-aircraft missile system that was taking out ship attack US aircraft was wreaking havoc on the anti-submarine aircraft the US had on the west coast.

With the prearranged cooperation of Aztlan separatists, California from San Francisco south was quickly brought under tight control of the Chinese as the US forces were crippled from behind by the activities of the Separatists.

Chinese troops that had been secretly moved into Northern Mexico over several months poured northward, with active assistance by Mexican Federal Forces. Only the actual military bases in the Southwest US were not over run. They were circled and contained with nearly continuous air and artillery bombardment Chinese air force and artillery units pre-positioned in Mexico that moved northward at high speed on fleets of Mexican semi trucks.

Las Vegas was taken over, and the areas of the Southwest south of I-40 to the Texas state line was under Chinese control a month into the battle. Incursions into Texas had been attempted but were viciously repelled by US military and Texas National Guard forces with the enthusiastic assistance of volunteer civilian forces armed with personal weapons, led by officers of the Texas Rangers.

It never became clear if the attack on the Seattle port was a diversionary attack, or the Russians had failed to move in China's behalf when Seattle was taken. Either way, the Chinese were driven out of the Seattle area with nearly total loss of life to the invaders.

China called for a ceasefire. They said they had what they wanted and all hostilities would cease if the US gave up the territory already lost. It was implied heavily that the war would go nuclear if the US didn't agree.

It amazed literally millions of US citizens, and in fact people around the world, that there was anyone at all in China that thought the United States would agree to the demands. China ceased to exist as a nation the following day when the President released the nuclear arsenal to his Generals and Admirals.

The Chinese managed to get off most of their arsenal of nukes, launching as soon as the launches of American weapons became known, a couple of minutes after the launch. Perhaps it was what Russia had planned all along. Perhaps they just decided to try to take advantage of the situation. They launched on America as well as on Europe, and threatened the Republics with the same fate if they didn't come back into the Russian sphere of influence.

Jasper, Greg, and Alvin were all working when the announcement of the attacks was made. Millie was at home, teaching the children how to bake the bread they ate.

Power and communications systems went down a few seconds after the announcement. Millie hurried the children into the shelter, just as they had practiced, and got all three of the weapons out of the locked metal case Jasper had made for them in the shelter. And waited.

Greg nearly had the well finished he was putting in for one of the people in the same community development that he and Jasper lived in. Knowing the importance of water perhaps more than most, he calmly, but quickly finished the job, taking the time needed to work the well the way he always did, before he loaded up and left. He doubted he'd ever get paid for the well, as the home owner was at work and Greg planned to collect that weekend. But there was one more well of water available for the community to use.

After going home and parking the truck, Greg looked to the northwest. It was much too far to see if Whiteman Airbase and the empty missile silos were getting hit. But it was the area that worried Greg the most. Jasper had told him that they would almost certainly get fallout from the base if it was hit.

He quickly put on his security guard uniform, just because, strapped on the gun belt and removed his pistol from the lockbox in the bedroom night stand. The pistol went into the holster. Greg gathered up all the food in the house in a couple of garbage bags and went over to Jasper and Millie's. He tried the house first, but when there was no answer he went around to the shelter.

Greg knew enough not to rush in the shelter. He stopped and called out. "Millie! Kids! Anybody home?"

Millie showed up in the doorway with the Ruger 10/22 held in one hand, a look of relief on her face. "Greg! Yes, we're here." She looked past him. "Have you... Have you seen Jasper?"

Greg shook his head. "I wanted to drop off my food and then I was going to go look for him for you."

"No, Greg. You need to stay here. Jasper can look after himself. There is too much of a chance you won't be able to get back."

"But Jasper..."

"Please, Greg. I know Jasper would prefer you to stay. If he wasn't to make it... Well, you're family to us. I'd rather have family here than out there," Millie said with a small head motion toward the outside of the shelter.

"Okay," Greg said after a moment's hesitation. "Just tell me where to put this stuff and what you want me to do."

Millie helped Jasper put away the groceries and then said, "About all we can do is wait."

Greg found it hard to wait and Millie steered him over to where the children were playing a learning game. He joined right in. Millie was free to worry in peace.

Jasper and his crew were just finishing up some pothole repairs when county dispatch called and told them about the attack announcement. Jasper had a hard time keeping the members of his crew from panicking. All he knew to tell them was to head for city hall after they stopped at the county maintenance shed.

He barely had the county pickup stopped when the dump truck with the cold patch and tools in it, and the bumper truck both came to sliding halts. The men jumped out and headed to their respective vehicles. The old diesel vehicles the county had, had started right up. The same could not be said for the much newer vehicles the crew members each owned.

Not a one of them started up and the panic was beginning again. "Get in the back," Jasper said, never doubting that his truck would start. It violated safety rules for anyone to ride the back of an open vehicle like that, but Jasper decided it was worth getting written up for.

He dropped each person off in turn, and headed for his own home. He tried several times to contact county dispatch on his handheld radio to tell them what he was doing, but the radio wasn't working. "EMP probably," he said aloud. He did see a couple of old model vehicles on the road, but there were far more stopped in the middle of the street, already abandoned.

Twice Jasper picked up people with children and took them to their homes, or city hall, if they decided to go there, after he mentioned the shelter in the building. Groups of men, or lone men, Jasper carefully avoided on his way home.

He made it there more than an hour after the announcement. Millie fell into his arms and sobbed a couple of times, but quickly regained her composure. Greg shook Jasper's hand solemnly. "Thanks, man. I don't know what I would have done if you hadn't allowed me to come here."

"You would have been fine," Jasper said. "You could have gone to the city hall shelter."

"I'm not sure they would let me in. It's probably going to be women and children only there. And definitely no guns. I don't like that."

"Well, Greg, since you are here, would you mind helping me outside with a few things before fallout arrives, if it does?"

"Sure, Jasper you just tell me what you want me to do."

The first thing Jasper did was point to the stack of rescued tarps in the garden shed. "I want as much of the garden covered as possible, the raised beds first."

"That'll kill the plants, won't it?" Greg asked.

"Nothing to harvest at the moment and if we get fallout I want the ground protected for future planting. It's worth losing what we might harvest if we don't get any fallout."

Working together efficiently, they threw the old tarps over the raised beds, waiting them down with anything heavy they could find, and then began doing the same thing with the regular garden. Reluctantly they tromped down what they needed to, to get the tarps to lay as flat as possible. When they ran out of tarps, Jasper broke out a partial roll of thin plastic sheet goods and they finished the garden with it, constantly looking skyward for any sign of fallout.

Millie called them in to a quick lunch made mostly from the items Greg had brought over. Jasper and Greg had just gone back outside to see about finding some way to try to protect the animals. Jasper looked toward the street and saw Alvin pull up and stop. He had his whole family with him in his crew cab truck. The back of the truck was piled high with boxes, and Jasper guessed that the trailer was, as well.

Alvin had a panicked look on his face as he ran up to Jasper. "Please, Jasper! My family! I don't know what to do! Just the shelter, please? For my family... I brought food. We have food."

"It's okay, Alvin," Jasper said. "You and your family are welcome. You... You didn't bring the horses or dogs, did you?" He looked to see if there was another vehicle pulling a horse trailer but didn't see one.

"No. Just us. I knew there wasn't anything I could do for the animals. I turned them all loose to fend for themselves."

"Okay. Well, get you family and bring them to the shelter. I'll tell Millie."

Greg went with Alvin to help usher them past the house and to the shelter while Jasper filled Millie in. Millie never hesitated. She made Alvin's family as welcome as she had Greg as they came in.

Alvin was talking intently to Lance, his problem child, at the entrance to the shelter. Jasper wasn't sure what he was telling the young man, but he hoped whatever it was would keep what Jasper still considered a boy in line. It apparently didn't help enough to get Lance to help Alvin, Greg, and Jasper unload the pickup bed and trailer. They took everything into the house, the fine ash and dust of initial fallout beginning to arrive on the last trip.

They ran into the house, dropped the boxes they were carrying, and went to the shelter, pausing just outside the door to dust off thoroughly before they entered the shelter proper. Jasper opened the rabbit hutches and the chicken coop to let the animals out to fend for themselves. They couldn't take them into the shelter with them. The task done and Greg and Alvin cleaned up, Jasper cleaned himself off.

Alvin began apologizing to Millie for showing up the way they had. Millie quickly put his mind at ease that it wasn't a problem and then began working with Alice and the girls, to try to bring them out of their near catatonic state. Alvin began to help and Greg went to Junior, Millie, and Darla and helped keep them occupied so they wouldn't get scared because of the way the adults were acting.

Lance had found a chair and was listening to his iPod with his eyes closed, apparently without a worry in his head.

Jasper, worried about the extent of the fallout, was debating what he might have done without so he could have picked up a Civil Defense surplus radiation meter. At least he'd printed off the instructions and scales to use to make a Kearny Fallout Meter, and had the necessary parts to put one together.

The can he needed, the aluminum foil, and the carefully dried and packaged gypsum board pieces, were in one of the supply cabinets. He went to a quiet corner of the shelter, where there was good light from the battery powered LED lights and began to work at putting one together, after pulling the plans from the fire resistant file cabinet that had been moved to the shelter, along with the old laptop and printer. Jasper had bought the kids a newer used laptop for school use during one of the times they had a little extra money.

It took several tries, but Jasper finally had the thing assembled so he thought it would work. He quickly took it to the outer door of the shelter and set it down. He'd check it in an hour and see what kind of reading he got.

With Alice and the girls quiet, taking naps in the sleeping bunks in the far corner of the shelter, Jasper got Alvin to go over the supplies he'd brought with him. As soon as Jasper took out the laptop from the filing cabinet, Lance came to life and came over to them.

“You got high speed, man? I need to get on to check my e-mail. Tell the guys where I am. My cell phone ain’t working.”

Jasper was astounded. He looked over at Alvin. Alvin, slowly and carefully explained once again to his son that there was a nuclear war going on and things like cell phones and the internet weren’t working.

“Yeah, sure. But let me use the ‘puter when you’re done.” Lance walked off again, putting the ear buds of the iPod back into his ears.

“I’m sorry,” Alvin said to Jasper, his head down.

Jasper just shook his head and began to enter the items Alvin told him he’d brought into the supply spreadsheet that Jasper and Millie kept updated as their situation changed. It took some time, and Jasper was relatively impressed with the supplies Alvin said he had. At least for the probable duration of the shelter stay there wouldn’t be any problems with food supplies. If it was a longer shelter stay than Jasper thought it would be, there might be problems after they left the shelter in terms of long term supplies.

Nobody really slept much that night, except for the children. Alice finally seemed to be managing her fear and asked to help Millie with anything she could do. “To keep her from going crazy,” she told Millie.

Other things, like the lack of a proper fallout survey meter crossed Jasper’s mind that first night. Like what would he have done if he hadn’t enlarged the original shelter plans from the original eight foot by eight foot inside size of the plans to sixteen feet by twenty-four feet inside. Even with the extra support posts for the double width, there was still almost six times the space they would have had. There simply wouldn’t have been enough room for everyone now in the shelter. How would he have handled that?

Jasper checked the Kearney meter every hour or so, logging the reading and resetting it every third reading or so. According to the meter, they were getting a fairly steady 100 r/hour during the night. The reading went up and down some, but was staying relatively steady at that level.

But it began to fall late the next day and continued to fall as the days progressed. Jasper referenced his stored information and risked a little exposure to take the occasional look around. No one, not even their other neighbors, seemed to be around. He didn’t leave the property, but there were simply no signs of life.

He also didn’t see the rabbits and chickens he’d turned loose. He could only hope some had survived somewhere close so they could begin meat and egg production again after they left the shelter. With the fish tanks in the ground inside the greenhouse, Jasper didn’t worry about them. He always kept some commercial feed available for all the animals and used a bit of the fish food to keep the fish going until they could get out and start harvesting them on a regular basis again.

The days dragged on and Jasper thought he might actually have to put Lance out of the shelter, but each time the young man did something, Alvin would talk to him and Lance would be okay for a couple of days.

Everyone was thankful that Jasper said they could start going outside for a few hours a day after twenty-one days in the shelter. The Kearny Meter was indicating radiation levels below 0.5 r/hour. Everyone had to sleep in the shelter, but they were able to go outside.

To his surprise, Jasper found perhaps a half of his chickens and both bucks and five of the twelve rabbit does he'd turned loose. He looked up the LD-50 dosage for both animals and discovered that rabbits were at 800r, twice the resistance of humans. Chickens were two and a half times more resistant than humans, with an LD-50 dosage of 1,000r.

He found the rabbits living in the hedges. Their natural instinct to burrow had helped them survive. The chickens had fended for themselves Jasper knew not where, but when he went looking for them around the property he'd find one here and there. Some looked the worse for wear, and one of them died after he penned them back up. Egg production was very slow at first, but the chickens that had survived did much better than Jasper ever dreamed they would. He let two of the hens set broods, to get the number of layers back up. They would need all the eggs and chickens they could grow in the future. The same with the rabbits. Jasper had incorporated enough genetic diversity to be able to keep cross breeding the animals successfully. As he'd done with the chickens, he kept a higher percentage of breeding does back than he had in the past, to maximize future meat production.

The gardens were carefully uncovered, and everyone handling them washed thoroughly to get any remaining fallout they picked up from the tarps off their skin and out of their hair. As it was, everyone except the children suffered mild radiation sickness from the exposures they got shortly after their trips started out of the shelter.

Jasper stayed pretty much right on the property. Greg and Alvin surveyed the neighborhood. Only one other family was still in the cul-de-sac neighborhood. Those on the through street that backed Jasper and his side neighbors were also all gone, except for three families close to Jasper and Millie's property.

Each had put together makeshift shelters and though they survived, all were weak with radiation sickness.

Alvin went back to his place with Greg, using Jasper's pick-up. Though his truck had made it to Jasper's, Jasper couldn't get it to start. It was going to need some new electronic ignition parts.

Alvin couldn't keep the devastated look off his face and both Shania and Christine started crying, as did Alice, when he and Greg got back. All the horses and the dogs were dead. Alvin let his family assume they'd died from the radiation, and some had. But there were signs that at least two of the horses had been butchered and probably eaten. One of the dogs had been shot.

Alice let out a small scream and collapsed when Alvin had to tell her the house and barn had both burned to the ground. They had lost everything they owned, except what they'd brought with them to the shelter.

Millie and Jasper exchanged quick glances and then Millie, with the girls, rather useless help, got Alice into the house and into one of the bedrooms so she could lie down, without being in the shelter to remind her of her losses.

Greg was commiserating with Alvin when Jasper walked up to them after having restacked some of the boxes in the house to make the room for Alice. Alvin looked up at Jasper. "I know we can't stay here," he said. "But I don't know what to do."

"It's manageable," Jasper said slowly, thinking as he spoke. "I suspect there will be vacant houses, with no one around to collect rent. We should be able to get you something really close. Close enough where we can be a help to each other. Actually," Jasper added, looking at Greg. "You said the house south of me was abandoned."

"Uh... not abandoned, I think. I didn't break in, but I looked in the windows. There were several dead people lying around. I think the family just stayed there and died of radiation sickness."

"Oh. Didn't know that," Jasper said, shivering a little at the thought of people just dying, without trying to help themselves in some way. There was the shelter in city hall. Jasper and Millie, despite all their problems in the early years had managed to make do. Why hadn't people with real money. Like Alvin, though of course Jasper didn't say that.

Jasper put that out of his mind. "Well, I don't know them that well, we didn't socialize. They just bought some meat, eggs, and produce from us. But I did learn they didn't have anyone else, except themselves. If they are dead, I don't see any reason for you not to use the house, Alvin."

"We can't tell them about the dead people," Alvin quickly said. "Alice and the girls... They'd never live there if they knew."

"Okay," Jasper said, looking over at Greg and getting a nod, "We'll take care of the bodies over the next couple of days while you approach Alice about moving in there in a few days."

"Okay," Alvin said. "I can do that."

"Let's go check it out," Jasper said. He caught Millie coming out of the house and told her where they would be.

Jasper had to break a small pane of window glass in the back door to gain access to the house. He and Greg both gagged at the stench inside the house. They went to the shelter and got their county issued respirators before they continued. They brought several of the tarps back with them and rolled the bodies up in the tarps so they could handle the bloated bodies.

Neither could keep the tears from their eyes when they carefully removed a dead baby from its dead mother's arms and wrapped it lovingly in its blankets. It took most of that afternoon to move the bodies out beside the hedge north of the house. Jasper didn't want the bodies buried next to his blackberries and wild roses. They left the windows wide open to air out the house when they went back to Jasper's.

The next day Greg and Jasper disappeared again, with only Millie knowing where they went. They took the rototiller and two shovels to dig the admittedly shallow graves for the three adults, two teens and baby they'd found in the house.

That afternoon they took Alvin over to look at the house. "It's going to have to be okay," Alvin said. "Almost no smell left. And with the way Alice is going to insist on cleaning the place anyway, I don't see a problem."

The three went back to Jasper's house. Jasper found Millie in the kitchen in the house. Only he could tell how upset she was. She wouldn't let it show with Greg and Alvin, and Alvin's family there.

"What is it, Sweetie?" Jasper asked, putting his hands on her shoulders.

"Oh, nothing really that important," she said softly. "I opened a can of dehydrated strawberries to use for snacks for the children and Lance ate almost the entire can."

Jasper felt himself frown. The sooner Alvin's family was in the other house, the better. Apparently Millie felt the same way. She pitched in and helped move Alvin's family's stuff over to the other house and even helped Alice and the girls scrub it down to Alice's satisfaction.

Reluctantly, Alice and the girls went through the clothing they found in the house and decided that they would use what would fit, despite it being someone else's clothing, and not that much to their taste.

Jasper saw the relief in Millie when they had the house and property back to themselves. Except... Neither Greg, in his house, or Alvin and family in theirs, had a good way to cook. Both houses had been updated shortly after the new millennium and the old propane appliances replaced with electrical. They both had shelter over their heads, and clothing, and food, but that was about it.

Jasper and Millie discussed the situation, the discussion being a short one. There wasn't much they could do except allow them to use the outdoor kitchen to prepare food with, and the wood fired hot tub to take their baths in.

Alice and the girls had no experience with cooking on a wood stove and Jasper had long ago made a cover for the propane burners to use the space for workspace. Jasper and Millie weren't ready to just open up the propane and let Alvin's family have at it. So Millie did most of the cooking. If it hadn't been for Alvin putting his food down with his family, she probably would have been doing all the cleanup, too.

Somewhat begrudgingly, Alice, Shania, and Christine did the dishes after the meals those first few days. Apparently they didn't like it enough to get Alvin to search for some options. Jasper left Greg and Alvin to their own devices, glad to have the time with his family without what really were good friends. He actually mostly worked in the garden, clearing the growth that had come up that spring and died from the radiation and lack of care under the tarps for the three weeks Jasper was in the shelter.

The plants in the greenhouse had suffered, but Jasper and Millie were able to save many of them, and had fresh salads to go with their fresh meat and stored vegetables. They were able to harvest much of the fruit from the trees and vines, but everything was carefully washed before it was processed and the wash water disposed of in a hole Jasper dug with the rototiller. The water drained away, leaving any fallout particles in the pit that would be covered up the next year after any possible radiation particle contamination was over.

Jasper didn't ask where Greg and Alvin came up with the bags of charcoal they had stacked in the back of Greg's truck when they returned one afternoon. Both men were obviously shaken. It was only when Jasper began helping them unload the charcoal at the two houses that he saw the three bullet holes in the truck's sheet metal.

Greg finally told him he and Alvin had been loading up the charcoal out of one of the hardware stores the city had when someone came running up and started shooting at them. They dropped the bags they were carrying and jumped in the truck to drive away. Neither man had been hit by the gunfire.

"So people are protecting the remaining resources," Jasper said. Greg had to agree. "Any sign of city or county work crews cleaning up or anything?" Jasper asked Greg and Greg shook his head.

Feeling a duty to the county that he'd been working for the last few years Jasper talked it over with Millie and they decided he should at least try to make contact with the county government and see if he could help out in some way.

Jasper was just pulling away from the property when he saw Lance zip past him on his motorcycle. Alvin had agreed with Greg, Jasper, and Millie that the bike should be kept in reserve for scouting uses and quick transport when one of the heavier vehicles wasn't needed. It was quite obvious that Lance wasn't happy with that. They never saw Lance again, or ever got word as to what might have happened to him.

Alice was distraught for months, leaving Shania and Christine to do all the work to take care of themselves, Alvin, and her. Millie took pity on them and taught them the rudiments of cooking and housekeeping under harsh conditions.

Jasper didn't find any sort of government in operation anywhere in the area. He did run in to pockets of people that had survived, and were living the lives of scavengers. After the first attempt of one of them trying to get his truck away from him, and Jasper had to shoot one of the

attackers with the Savage he'd taken to carrying with him everywhere, he started staying close to home again.

The only exception to that was the small trading center that developed in the biggest of the city parks. He would go there each Saturday with what little surplus they had from fresh production of eggs, chicken, rabbit meat, and vegetables from the greenhouse. They never traded away any of their stored provisions, keeping them for their exclusive use.

Jasper always went alone, and never let anyone get a chance to follow him back to the source of his wealth, the homestead. There were plenty of people that tried. Once Jasper stayed out two days before making it back home. He wasn't that far away, and was able to talk to Millie on the pair of FRS radios that Alvin had given them, since they had a few rechargeable AA batteries and Alvin didn't, and continued to feel he owed Jasper a great deal for what he'd done for Alvin and his family.

Greg furnished the materials from somewhere to build two outhouses after the city sewer finally filled up all the existing storage area in the system, including the access manhole in Jasper's street. There was enough lumber for a conventional outhouse for Greg's place, and one for Alvin's. Jasper and family continued to use the chemical toilet. Jasper used the rototiller and a shovel, and with Greg's help, slowly dug out the hole and trenches needed to install the septic tank components so they would have flush toilets again. They would be flushed with a bucket once each day, but they were flush toilets.

It allowed the family to begin living in the house full time again. They just had to carry water from the hand pump on the well inside to have water. Jasper had plenty of buckets for the task, not even counting the several that Greg and Alvin used to haul water with from the pump.

Alvin and the rest of his family opted out of the bible study sessions Millie put on for Jasper and their children each Sunday. Greg had asked to come and was happily included. All drew great comfort from the Good Book, in spite of their circumstances.

Jasper continued to refuse to go on the salvaging trips Greg and Alvin occasionally took to find things they simply couldn't live without. He refused any of the minor bounty they came back with, the idea of taking things that other people might need rather distasteful to him. The house Alvin had moved into, wasn't quite the same, as there were plenty of other houses available, since the death toll had been so high.

But some of the other things... Jasper sighed as he thought about it. Greg and Alvin, and Alvin's remaining family really didn't have much. They were a needy bunch. Greg had always done very well for himself, even when he was drinking, and Alvin had been worth almost two million dollars at one time. Now Jasper was the rich one, with the ability to feed himself and his family, and have enough to barter for what they couldn't produce.

Jasper traded for gasoline mostly, with a few manufactured goods that would help him maintain the family's lifestyle. One of the things he'd never got that he'd always wanted, was a James Washer with ringer for washing clothes when there was no power to run the regular washing machine.

What he did have was wash tubs and a couple of large cast iron kettles he'd acquired over the years. Like he'd never seen a tarp he didn't like, there was never a large wash tub that didn't catch his eye, begging him to take it home. So he did a little research in his computer files and found the article about washing clothes with a rubber plunger.

Until he could make an improved one like the one in the article, the regular plunger would have to do, after sanitizing it. Monday was wash day, and Jasper helped Millie get the water heated in the cast iron kettles and transfer it to the wash tubs where she presoaked, then washed, washed again, rinsed, rinsed again, and finally wrung out and hung the laundry on the clothes line she'd always used more than the propane fired dryer, in order to save money.

Greg was more than willing to do his share, so Millie just had him add his clothes to the pile and they went through with the family's. Of course Jasper and Millie offered the use of the system to Alvin and his family, but Alice declined to use it. Alvin was always on the look out for fresh clothing for every member of his family, as they would only wear something until it was dirty and then throw it away rather than wash it the old fashion way.

Millie had no compunction against going through their continuing discards to find things that her family could use now, and in the future.

The war had been over for almost a year when Jasper ran into a Minister without a flock passing through the city on horseback. He'd stopped at the trade camp to try to find some food in return for labor.

Jasper took pity on him, and trusting in his instincts, took Minister Jacobson back to the homestead for a hot meal, comfortable bed, a wash, and washed clothes. Greg met him and took a real liking for the man. Greg offered permanent housing and a hand with his food needs if he would stay in the area and set up a church.

The timing was good, since his mare was about to foal and he wanted a safe place to stay until mare and foal could travel, so Minister Jacobson took Greg up on his offer. Jasper contacted all the former members of his church he could find and they soon had a going church with more than thirty families attending, a third of which had belonged to the same church Jacob and Millie had before the war.

Along with the church, the community was wanting a school for their children. Millie, with her experience home schooling volunteered, and soon was holding classes three days a week at the large, abandoned house that Greg had scouted out for such use.

Greg had stocked up on well supplies just before things went bad, due to the call for irrigation wells for Victory gardens. He put one down at the new school, and another at the church, with Jasper's now expert help. Jasper helped to build out houses with pits for each, too.

All the church members contributed what they could, but Jasper and Millie basically kept the Minister fed, with others helping him with other non-spiritual needs.

It wasn't long after the church and school were going well when FEMA showed up in the city. It wasn't the FEMA of prewar. That political entity had essentially collapsed of its own weight in the early days after the war. These FEMA members were census takers; address, birth, and, death, registers. They took an informational survey to determine what was needed in the areas and reported it back to St. Louis, the new national capital. For whatever reason, it had escaped nuclear devastation, and was much nearer to the physical center of the nation.

As things slowly started getting better, the jackals that preyed on human misery started coming out of the woodwork. Like everyone else at first, they'd scratched to survive, looting and killing when they saw no other way to obtain what they wanted.

Jasper had constantly warned Greg and Alvin about their salvaging operations. They were going to eventually run into someone that wanted the stuff more than they did, legitimately or criminally.

It happened a week before the second Christmas after the war ended. Jasper heard vehicles coming at high speed and shooting about four in the afternoon while he was out tending the animals. He carried the Savage all the time now, and had it slung when he heard the commotion approaching.

Jasper could never figure out why Alvin led the gang straight back to his home, and Greg was already unconscious when Alvin made the decision, so Greg couldn't tell Jasper either. But bring the gang to his house, Alvin did.

Jasper got to a point where he could see what was going on as Alvin stopped Greg's truck and ran into his house, shooting over his shoulder. Two Jeeps, looking like rock climbers from before the war were right on Alvin's tail. Two men jumped out of each Jeep and ran into the house after Alvin.

Jasper had a family of his own to think about and carefully made his way forward to try to help Alvin and his family. He was too late for anything but shoot the two attackers that weren't already dead.

Alice, Christine, and Shania lay dead on the floor, with Alvin dead as well, laying on top of Alice. Two of the attackers had died as they entered the living room from outside, shot by Alvin before he died. Jasper didn't hesitate. He shot both of the other men where they stood.

He checked all the bodies for life before he went back out to check the vehicles. All were definitely dead. In all his years of hunting and dressing out meat had Jasper had never seen so much carnage.

When he went out to Greg's pickup, he found Greg slumped unconscious against the passenger door. He had dried blood on his face, but he was breathing. Jasper checked him carefully and found a bullet crease on the side of Greg's head. It was where the blood had come from, and was what had caused the loss of consciousness. There were no other injuries apparent.

Jasper ran to get Millie and the first-aid kit. Millie didn't ask what was going on. She just helped Jasper Greg to the house and began to tend to him. Jasper ushered the children out of the way. They knew the tone of voice and hurriedly made their way to the living room and picked up school work to begin working on it.

He had to be sure. Jasper checked all the bodies one last time. They were dead. Jasper finally thought to check the back of the truck. Lumber. Eight foot two-by-fours, a couple of dozen of them. And sheets of half inch plywood. Also twelve. And three old fashioned pitcher pumps in relatively good condition.

It was apparently what Alvin and his family had died for, and Greg had been injured for. Jasper went back to check on Millie and Greg. Millie said, "I cleaned the wound. If he comes out of it, I think he'll be alright. Just depends on how much the brain was jostled when he was shot."

Jasper nodded. "Okay. Do what you can for him. I've got something to do." His trusty rototiller and shovel allowed Jasper to dig two shallow mass graves. One for the attackers, one for Alvin's family. They were all buried near the north hedge, just as the original family had been.

It was the next day, after Greg had regained consciousness, that Jasper took the time to check out the two Jeeps. They weren't to his taste in any way, but seemed to be in excellent shape. He considered them spoils of war and hid them both in Greg's garage. It would only be fair for Greg to get one if he wanted it, but Jasper intended to get everything he could out of one of them in barter.

It took three weeks for Greg to get back on his feet. He was apologizing to Millie and Jasper for most of that time. When he was able to get around again he went along with Jasper's idea of Jasper getting one of the Jeeps to use as barter goods.

He decided to keep the other one and sell his own truck, since he could use Jasper's much more efficient pickup if needed, and could get around with much less gasoline in the Jeep. Jasper let Greg get rid of his truck first, waiting for several weeks before he tried to get what he wanted out of the Jeep he kept.

Greg drove it down to the trading park for Jasper and Jasper set up for the long haul in bartering. Greg disappeared, getting in another of the few running vehicles and leaving with the owner.

It wasn't until the late evening that Jasper finally got what he wanted for the Jeep. It took five families going together to get the Jeep for shared use. Jasper wasn't concerned about their individual equity in the Jeep. He just wanted what he wanted.

The families had spent all day gathering the barter goods after the initial contact had been made and Jasper stated his wants. It wasn't exactly as Jasper wanted, but it was well within the limits Jasper had placed on the deal mentally.

There was a real PV solar set up with deep cycle batteries and a Trace 115 volt inverter so they could run one or two appliances at a time at the house.

There were five small pigs. Two boars and three sows, with assurances that they had all come from different places so there would be genetic diversity when Jasper started a breeding program. They wouldn't grow so fast that Jasper couldn't get a pigpen and small barn built for them before they outgrew the small enclosure he'd already made in anticipation of such a trade.

Lastly there were seven good mountain bikes with extra parts and tires. Jasper wanted five for the family, one for Greg, and one for a spare, plus the parts to keep them going for years. He suspected the bikes might have been scavenged from a bicycle shop, since they were essentially new, and due to the quantities of the spare parts and tires. No one, except perhaps Jasper himself at some point, would have had all of it, especially available on short notice.

Jasper had everything loaded in his pickup, and was ready to go when Greg showed up again. He was smiling when he walked over to join Jasper at the truck. Jasper noticed the shiny Sheriff's badge pinned to his jacket. He lifted his eyes to meet Greg's.

"Been talking to Old Judge Harper," Greg explained. "I told him I thought we needed some law enforcement to prevent what had happened to Alvin and his family, and a few other people around here. He agreed. Since none of the real deputies survived, or the Sheriff, Judge Harper appointed me as Sheriff until we could hold elections.

"He even said he'd pay me a salary for a year in gold and silver if I can find someone that would take it for food and other necessities." Greg looked at Jasper hopefully.

"I'll talk it over with Millie," Jasper said. "You sure you want to do this? You know those guys probably weren't alone."

Greg was very serious when he spoke. "Jasper, thanks to you, and the Lord, I've been given not one, but two chances. I want to make sure other people have a chance to survive all this."

"Okay, Greg. As long as you're sure. You'll get my support."

"Thanks, Buddy. Let's get you and your new brood back home. Looks like I'm going to be able to have some pork ribs again, one of these days."

Jasper smiled and put the truck into gear. Just maybe life would return to that norm.

End *****

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