The Kids are Alright
Book IV
in the
"North to Alaska" Series
by Fleataxi

Chapter 1 - The Kids are Alright

Coming back from his Grandma's Funeral David wept uncontrollably. Heather held him as he cried, remembering how he had held her when she needed someone. Josh, Jake, and Sarah were taking it better, but were still devastated at the sudden death of their grandmother. Josh had only been home two weeks when Gene died, then his Grandma died shortly after he got back from Gene's funeral. Josh was glad this was only a 45-minute flight, or he might have been tempted to lean over and smack his whiny little brother. When he got back to his dad's house, he asked if he could use the computer, and check his Hotmail account. He had dozens of junk e-mails, and one cryptic e-mail that he almost deleted until he saw it was from Q. He had wondered if Q survived the Tsunami, now it appeared he had. He opened it, and all it said was "What's up Doc?" Josh thought that was strange, because he wasn't a Doctor, then he remembered that his SEAL team buddies always called him Doc.

He replied "Glad to see you survived the Tsunami."

He was surfing the internet, when his mail server said that he had mail. He saw that Q had replied to his e-mail:

"Survived with the clothes on my back - I was delivering a vehicle in Perth when the Tsunami hit - Shop wrecked."

Josh replied "How do you like Snow?"

A few hours later, he checked, and Q replied: "Beats Tsunamis!"

Josh showed Ron the e-mails, then told his dad about his idea. Ron said "It's your money."

Josh took that as a yes, and e-mailed Q: "How would you like if I set you up a huge shop in Alaska with as much of a budget as you need, and all the Military toys you want to play with? Call me."

2 minutes later Josh's shoe phone rang.

"Doc, it's Q. I'm between a rock and a hard place. My lab was destroyed, and I've got contracts to fulfill. The shop was insured, but it will take me years to collect from the insurance company if I can at all. What part of Alaska do you live in, hopefully no where near the coast?"

"Q, I live in Allakaket, just south of Mount McKinley, midway between Anchorage and Fairbanks Alaska. We're several hundred miles inland, and the only way in or out is to fly."

"I guess that means you don't get Tsunamis. What are you offering me?"

"I want to set you up in business, buy all your equipment, put you up in a nice house, and all for 50% of the profit. I'll pay you a great salary, say $100 grand per year, 10% of the profit, with 50% to me, and the balance going back into the company for new equipment and stuff. You can hire whomever you want, but I want to turn a profit."

"I heard about the setup you have there, is it true you can play with just about anything Military up there?"

"Until a couple of weeks ago, the Ex-JSOC lived here, and he brought everything with him. I run a DOD survival school, so I've got access to military hardware, and Elmendorf is an excellent source for surplus stuff. We've got a Super Stallion that can carry almost 40,000 pounds between Anchorage and Allakaket."

"Sounds like the ideal setup. I've got to wade through mounds of paperwork to get these pantywaists to let me install anything worthwhile in an armored vehicle. They are so anti-gun that they won't even let me build stuff for export to Saudi."

"I've got some ideas for stuff too. Anyway, you interested?"

"I'll have to talk it over with the wife. I'll let you know tomorrow."

Once they hung up, Josh realized that without Gene there, they were vulnerable to the Liberals in Congress who would love to take their toys away. He called Steve, who made a couple of phone calls, and the General that took over for Gene was more than ready to retire, so Steve made him an offer he couldn't refuse. He knew about Gene's setup, and asked them if there was anything they needed, and to make a list and e-mail it to him.

Josh called Bear, and they went over the inventory. They'd shot up a lot of ammo practicing, and they wanted some new stuff too. Bear added a TLAM-N to the bottom of the list, and told Josh to send it as is. The next day, General Kelly Stone approved the list, and called Bear.

“Chief Simmons, I saw you wanted a TLAM-N. The answer is “It’s STILL not time, you Aquatic Freak!”

Bear guessed that Gene had told General Stone that joke. He laughed, and said “Aye, Aye Sir!”

“Chief, the rest of the order is approved. I’m flying out in a week or two to retire to Allakaket, so I’ll see you then.”

“Yes Sir, I’ll be waiting for you.”

A week later, Bear got a call from Elmendorf, A C-5A Galaxy had shown up asking where Allakaket was. He guessed that the stuff in there was for him. Bear said he’d take care of it, and called Josh, and told him to take care of it. Josh commandeered all their helicopters and available SuperGoose to fly to Elmendorf and load up. Josh stood there open mouthed on the Tarmac when the crew chief for the C-5a said that the entire 100-ton load was for Allakaket, and would he please sign for it, so he could get it unloaded and get back home for dinner. Josh shook his head, and signed for it. The Crew chief hustled to unload the aircraft, and Josh hustled to find aircraft to carry the load to Allakaket. All 4 helicopters flew non-stop for the next couple of days, with the heavy-lift choppers carrying the bulk of the load. Bear had hired some extra people to unload it and store it in the armory on the other end. When they were finished, the Armory was full again, and they had some stuff they didn’t have before. The Army was obsoleting the 105mm Howitzer, and Gen. Stone sent them 6 howitzers and several huge containers full of ammo. They also received dozens of pallets full of .223, .308 Match, 7.62 Linked, .50 cal linked, 20mm and 25mm ammo, plus obsolete rockets, missiles, mines, and miscellaneous stuff. The next day Gen. Stone showed up. Bear greeted him with “Isn’t Santa Claus supposed to wear a red suit?”

Gen. Stone and Bear both laughed themselves silly, then Bear introduced Josh Williams, a former Lt. Commander in the SEALS who was taking over for him as the head of Alaska Survival Inc. since Bear was officially retired.

“ Lt. Commander Williams, Ok, I remember you. Sorry about Commander Jackson. I wanted you to know that after that accident, I grounded and sent all the same aircraft to the boneyard for destruction, then ordered new planes out of discretionary funds. Sorry it took the death of your commander to get those old deathtraps removed from inventory.”

“That’s OK Sir, I understand accidents happen. I don’t regret resigning my Commission, especially when I hear what DC is doing to Special Forces. I heard that the Rangers were spending more time acting like Social workers than Warriors.”

“Unfortunately it’s true. I tried to stop it, but the orders came straight from the White House.

Evidently someone there believes if we can keep the Muslims happy they won't attack us, so most of the Rangers and some SEAL teams spend more time digging wells in Southeast Asia than killing terrorists. Not only that, but our involvement in Drug Enforcement has stopped, and the Congress hasn't budgeted any money for Transportation to equip the Coast Guard with enough men and equipment to do the job right."

Josh just shook his head, he hoped that the next President understood what Wynn Catlin said "Diplomacy is the art of saying 'Nice Doggie!' till you can find a rock!" Except he was afraid that the US had ran out of the kind of President it needed hundreds of years ago.

Josh and Bear got General Stone settled into his new house, and Bear told him that the "old Geezers" got together for their weekly shooting match every Thursday morning at the indoor shooting range.

Later that evening, Josh got a phone call from Q.

"Ok, the wife says we should go. I'll be on the next flight to Alaska."

"Q, I hope you don't mind living in a trailer for a couple of months while we build your house?"

"Young Man, right now a trailer would be a Godsend. We're living in my Son's apartment, and his live-in Girlfriend is the most obnoxious person I have ever met!"

"Ok, Q - call me when you know when you'll be arriving in Anchorage, and I'll fly you to Allakaket. While you're waiting, could you e-mail me a list of tools and supplies you'll need and how big a building you need so we can get started on this end?"

"Josh, an Airplane Hangar would be perfect, one of the Big ones. I'll e-mail you a list of tools and supplies. I'm glad you're rich, because this will put a dent in even your bank account!"

"How much money were you making a year before the Tsunami hit?"

"Several million per year, net maybe $250-500 Thousand, but we had a lot of overhead."

"Ok, call me when you know your flight number and arrival time in Anchorage."

10 minutes later, Josh checked his e-mail. When he saw the total he said "Holy.....!" He walked over to his Dad, and said he might need a loan for this one. Ron took 1 look at the figures, called the Credit Union, and transferred $50 Million into each of his kid's accounts, and David's Trust Fund.

"Good timing Josh, My broker said I just doubled my investment again, so I could easily afford

to do this. From what you told me of this Q character, it should be a good investment on your part. I've got a huge hangar we don't need any more since Ralph's Snow Bug business relocated to Fairbanks with the new owner. I think Ralph was smart to sell when he did, the market's just about saturated. He got double his initial investment out of it, plus all the profit he made over the years. Not that he needed the money since Doc died. If you can use it, go ahead."

"Thanks Dad. I'll drive over and check it out."

When he opened the Hangar doors, Josh was astounded at how much equipment they left. All the air compressors, hydraulic lifts, and a whole bunch of stuff were left behind, and in good shape. This should cut the cost of getting Q up and running considerably. The Hangar itself was 100 feet wide by 600 feet long with a 20-foot high door and he knew that Ralph fit 30 Snow bugs in here at once with room to work on them all, so he should have plenty of room. Josh saw a huge radiator up in a corner with a fan behind it, and traced the plumbing to the output of the Geothermal heating system. Evidently this place was heated by Geothermal heat, so the only monthly expense would be phone and electric. His shoe phone rang, and Q said he'd be in to Anchorage at 0900 tomorrow. He gave Josh his airline and flight number, and Josh told Q someone from Alaska Airlines would meet him at the gate, and collect their bags, then drive them to the VIP terminal, and he'd fly them to Allakaket.

"Giving us the VIP treatment I see - Good idea! Is Sheila coming with you?"

Josh laughed thinking the last time Sheila met Q, and said he didn't think it was a good idea since Sheila was armed 24/7, and might not be able to resist the urge to shoot him this time!

Q gulped audibly, then realized Josh was pulling his leg.

"Q, I've already got a huge hangar set aside for you that used to house an automotive manufacturing company, so they already have lifts and air compressors with pipes running everywhere."

"Sounds like a set-up, I can't wait to see it. Bye until tomorrow." Josh listened to the dial tone for a second, then realized Q had hung up on him, and turned the phone off.

Josh called Jake, and asked if the Airport Manager could have his SuperGoose ready to go at 0700 tomorrow morning for a flight to Anchorage. Jake said "No problem Bro" and disconnected before Josh could even say thanks. He guessed Jake was busy trying to learn how to run an airline. BA's sons Mike and Larry were a big help, but the 2 of them were still very busy. Sometimes Jake told Josh he wished he'd stuck to flying and guiding. Diane was busy homeschooling their kids, and the only time they had to themselves was during the weekend, since Josh had talked Jake into working out with him in the morning again just like they used to.

Diane was still beautiful after 4 kids, partly because of her Inuit heritage, and partly because she took the kids to the pool and the shooting range 3 times a week, and she worked out in the gym while they were in their swimming classes.

Neil and Sally were busy between raising their 4 kids, and running the Gold Mine. Sally and Diane worked out together twice a week, and Neil joined them whenever he could. He spent a lot of time flying the 007 back and forth to the mine, enough that he was considering getting his Rotary Wing Pilot's license. Neil decided he needed his own helicopter to fly back and forth to the mine since the 007's were getting too busy when a surplus MD-500 came on the market. Neil checked into it, and it was owned by Anchorage Regional Hospital. He remembered something about selling them SuperGoose aircraft, and called Ron for the details. Ron called Steve, the new Head of Emergency Services, and he told Ron that the Hospital Administrators just declared the helicopter surplus since their fleet of 2 SuperGoose planes were handling all the Medevac flights, and the MD-500 didn't really have the legs or payload for Medevac in rural Alaska, with a max range of 300nm, and a top speed of around 150 knots. They got it as surplus from the Pentagon, so they didn't pay that much for it, and all he wanted was enough money to justify selling it to the board, since they needed to approve the sale. Ron asked him how much he'd want for the aircraft, and Steve said $250,000 including some spare parts and manuals. Ron said that he'd have his chopper pilot call him back with the info, and if he was satisfied, he'd offer whatever the chopper pilot suggested up to $250,000.

Steve thanked Ron, and gave him a contact name and number in their aircraft maintenance department. Ron called the airport, spoke to Jim, the 007 helicopter pilot, who was amazed that they had located an MD-500 for sale with an airworthiness cert. Ron told him to make sure, since Steve never mentioned one. He gave Jim the name and number of the aircraft maintenance supervisor. 2 hours later, he called Ron back "According to the Maintenance Supervisor, this aircraft is a hangar queen, and hasn't been flown in 2 years. It's got an airworthiness cert, and a fresh overhaul on the turbine. Their asking price is ridiculously low, and I'd highly suggest offering their asking price, right now!"

"Thanks, I'll call you back and let you know!"

Ron called Steve "My helicopter pilot said we should offer the $250,000. I can either have them deliver a check or a wire transfer once they get a look at it."

"Ron, just have them bring a check, the board doesn't meet until later this week."

"Ok if my pilot flies out and takes a look at it today?"

"I'll be here all week."

"Thanks Steve."

Ron called Jim and Neil, and told them to get aboard the next SuperGoose bound for Anchorage, and check the MD-500 out at the hospital's airfield. Neil could have flown there all by himself, he was so happy. 2 hours later, they landed at Anchorage International, and caught a cab to the hospital's airfield. Someone must have recently washed the helicopter, and it looked like a new helicopter. The blue and white paint scheme was one of MD's standard civilian paint jobs. Neil was surprised to see a pair of floats off to one side, and asked Jim about it.

"The pontoons allow you to land on water, but the extra weight and drag cut into your range enough to make you leave them at home most of the time."

Neil thought the small 4-seater was perfect, until Jim explained how much work and money it cost to get certified as a Helicopter pilot. Seeing Neil's downcast expression, Jim had an idea.

"How about you fly up front from now on when we go to and from the mine? I'm pretty sure my FAA IP certificate is still good. It would save the cost of a co-pilot, and I could teach you the basics while we're flying. You'll have to study for a while and pass a test before I let you anywhere the controls of a helicopter, but it would be cheaper than paying for lessons since I have to fly you back and forth to the mine anyway."

Neil shook Jim's hand and thanked him. They looked over the records of the helicopter, and Jim told Neil that it was a steal at $250,000 in the condition it was in. The maintenance supervisor offered to give them a lift over to Steve's office, then back to the airport so they could catch a flight back home. They handed Steve the check for $250,000 and Steve said that if the board approved, the chopper was theirs, since he wouldn't be accepting any other offers unless the board rejected the offer. Neil told Steve to call Ron if the board rejected the offer, and he was sure they could work something out.

The next day, Josh met Q at the VIP terminal. The baggage truck that met him was full of suitcases and stuff. The baggage handler looked tired by the time he was finished, so Josh tipped him a $20 dollar bill for the hard work. Q was fascinated by the SuperGoose, and Josh offered to let him walk around the plane with him while he checked it. On the way around, Q asked some very interesting questions. When they got to the air stairs, Josh asked Q if he'd rather ride up front in the co-pilot's seat. Q looked at Josh like he had told him he just won the lottery, and scampered forward to the cockpit. Josh secured the airstairs, then walked forward and sat in the pilot's chair. He showed Q how to buckle in, and place the headset over his ears. Once he was all set, Josh activated the intercom, and talked Q through the pre-flight checklist. Q seemed to know his way around a plane, and Josh asked him if he'd ever flown. Q smiled and said he was in the Royal Australian Air Force, and flew the F-4 Phantom, but never in combat. Josh guessed that was why Q knew his way around the aircraft. He joked with Q and said that if he was used to the Phantom, he might want to get out and push, since this aircraft had a top speed of less than 300 knots. Q said he actually liked flying low and slow. You

couldn't see much flying the speed of heat at 30,000 feet. He asked if Q wanted him to try a max-performance take-off, and Q advised him that some of the equipment in back was fragile, so he decided to try the sedate approach instead, and flew the plane like he had a load of bombs aboard. With Q around, One never knew. They talked on the way to Allakaket, and Josh found out that Q, who's real name was Herbert, was a natural tinkerer, and got discharged from the RAAF for tinkering with the engines of his plane to make them go faster. The funny thing was Pratt & Whitney did almost the exact same thing when they introduced the G Model Phantom II.

Josh told Q about his idea for the Ultimate Bug-Out vehicle. Q pointed out that unless it flew, it wouldn't be much use in the interior of Alaska from what he could see! Josh said there were plenty of places you could go in and around Allakaket and not need a plane, you just needed something like a huge half-track to navigate the rough terrain and knock over any small trees in your way. Q suggested a German track system instead of the US design, since it covered more of the wheelbase, had bigger and more bogie wheels, which make it harder to slip a track, and had a torsion bar suspension just like his trailer had. He could build a 40-50 foot long vehicle using a large Turbocharged Cummins motor like the 525 ISX with an Allison 6-speed transmission and a two-speed transfer case that included a PTO for a heavy-duty winch. Q suggested a sandwich of ceramic, rigid Kevlar, carbon fiber for strength, and armor plate he had been working on as the latest and greatest in vehicular armor plate. It was lighter than Aluminum, yet almost as bullet and high-explosive resistant as Chobham armor. He wouldn't put it up against anything bigger than a 75mm tank round, and even then it had a 50/50 chance of penetrating. Q had his microcassette recorder on, recording Josh's every word. He found that it worked better than taking notes, and his memory wasn't what it used to be. When they landed at Allakaket, Q thought the approach was borderline scary, since he was used to landing his Phantom on a nice flat long runway instead of floating in on a steep angle with a high descent rate. He was amazed at how softly the plane landed after that steep of an approach, then Josh explained the SuperGoose was designed for Short Take-off and landing, and the high wing, huge flaps and leading edge slats allowed the plane to fly very close to a stall, and land at very slow speeds, then if he reversed the props, he could land on a very small lake. They taxied up to the ramp, and Josh remembered to put down the landing gear just in time. Once they were parked and the turbines spun down, a couple of baggage handlers unloaded Q's stuff into the back of Josh's pickup.

Q asked "what happened to the Hummer?"

"I had to leave it in Australia, at Sheila's parent's place. Your design saved our lives several times. I wish I had the time to fly you over there so you could see how much damage it sustained without letting anything into the passenger or engine compartment."

"Maybe they could send pictures?"

“If that would help, I’ll call them and ask.”

“If they tape a ruler next to the bullet holes, I can blow up the image and see how big the holes are, and how deep they penetrated. My guess is that nothing penetrated more than half-depth, that Kevlar Armor is tough. The Apache and Blackhawk carry over ½" of the same Kevlar panel. I figured you wouldn’t be up against anything much heavier than 30 caliber rifle fire, and the 1/4" panel defeats that easily. For your Ultimate Bug Out Vehicle, I’m installing half-inch panels that should stop anything less than 20mm Autocannon. I’m pretty sure a 25mm Bushmaster HE round would have a 50% or better chance of penetrating it, and a TOW would easily defeat it.”

Josh told Q he’d send some pictures, then Q changed the subject.

“So what kind of armaments do you want on the Ultimate Bug Out Machine?”

Josh scratched his head, and admitted he never thought of that. A 25mm Bushmaster would be too heavy, and a 7.62 mini-gun wouldn’t have enough punch. He asked Q who suggested a simple Ma Deuce in a turret with remote control, and a forward 7.62 machine gun on it’s own turret mounted forward of and below the Ma Deuce’s turret up higher behind the cab with a 360-degree field of fire. He suggested a rocket launcher up front and back. Josh quipped “What, no Hellfire Missile Launcher?”

Q said that he could put a separate turret behind the Ma Deuce with a pop-up “hammerhead” launcher to engage anything too big for the Ma Deuce to handle. Q said with a driver, commander/gunner, Crew chief/loader/gunner arrangement, the UBOM would be a formidable All-Season Bug Out Vehicle. With the diesel halftrack and high-mounted snorkel, once they were buttoned up, they could ford water up to the snorkel, which would be at the top of the Cab, or more than 9 feet in the air. He said if they tried it, it might not work too well, because the UBOM would be too buoyant with that huge cargo box. Josh suggested if it were heavily loaded, it would sink like a rock, and give them all the traction they needed. Q agreed since he knew that if worse came to worse, he could design it will ballast tanks to take on water. He wondered how long it could travel underwater. Probably as long as they could breathe, as long as the snorkel wasn’t under water. Maybe he could put a float and a flexible extension tube on the snorkel so they could cross shallow lakes?

Chapter 2 - Aftershocks

Bill, the original Mayor and Minister of Allakaket was in his 80's, and had turned the reins of the town and his ministerial duties over to a half-inuit man who he and Carl had watched over the years, and felt he'd make a suitable replacement. They had encouraged Michael's study of the Bible and famous theological studies. Bill told him that each of the "great masters" had a kernel of truth in their writing, but the final source should be the Bible. Bill had him read the sermons of Charles Spurgeon and John Calvin, then turned him loose in his library of great Theological books. It took him 10 years, but the end result was a well-rounded education in Theology, Bible knowledge, Church History, and a working knowledge of Greek, Aramaic, and Hebrew. He found several Christian websites selling Bible software that allowed him to cross-reference various translations and the Strong's Dictionary on a verse-by-verse basis. When they were ready to retire, they held a joint ordination, and filed the State paperwork for his official ordination. Michael was 35 when he took over as the town minister, serving both the Inuit and non-Inuit communities. He also took on some of Bill's duties, but since the town had grown, they had a real mayor and town council, so he wasn't as busy as Bill used to be. The Credit union had a full-time manager who doubled as the teller, so Michael spent most of his time ministering to his flock.

10 years after Michael took over, Carl called and told him that Bill had died in his sleep. Michael knew that his mentor was in Heaven, still he missed him. He fell to his knees in prayer, asking for Divine Guidance, when several Scriptures came to mind. Picking up his notepad, he wrote them down, then started working on Bill's eulogy. He knew Bill would want something simple and dignified, so he stuck to the basics. The next morning, the entire community met at the church. With the new wealth of the area, the new church was easily able to accommodate all of them.

As part of his Eulogy Michael read from Paul's 2nd Letter to Timothy, from verses 6-8:

"6 For I am already being poured out as a drink offering, and the time of my departure is at hand.

7 I have fought the good fight, I have finished the race, I have kept the faith.

8 Finally, there is laid up for me the crown of righteousness, which the Lord, the righteous Judge, will give to me on that Day, and not to me only but also to all who have loved His appearing."

Ron was very moved by the Eulogy, and praised Michael "Bill trained you well, I'm sure he's proud of you!"

Bill requested his body be cremated and the ashes scattered on the water next to Allakaket. Carl and Michael took care of Bill's second to last request. When they opened his will, they discovered that he had transferred the bulk of his assets into 2 Scholarship funds. 1 for Allakaket Children who wouldn't otherwise be able to go to college, and another for students at Bible Colleges making a commitment to serve remote rural congregations. The amount of money he put in enabled students to go to school on full scholarships for decades to come. The interest alone on the money was enough to pay for 10 4-year scholarships per year. Ron and BA had talked to Bill, and had already established scholarship funds for Allakaket, but they had pretty strict economic qualifications. Bill's scholarship requirements were less stringent, and the end result was almost every teenager who wanted to go to college or a technical school in Allakaket was able to get at least a partial scholarship.

Several weeks after his arrival in Allakaket, Q's equipment and supplies started showing up. He had gotten an extension from the Royal Saudi Family for their armored Mercedes sedans and Hummer defensive vehicles. Q stood there slack-jawed when he saw his Mercedes flying into Allakaket slung underneath the Super Stallion. The next day they delivered his Hummer, and Q got to work. He used his new composite armor, and after he tested some test panels, realized that he might have stumbled onto something, and checked it against the specifications of other composite armors. It wasn't as penetration-resistant as Chobham armor, but it was significantly lighter, and stronger in some aspects. He was pretty sure you could build an airframe out if it, which would be much lighter than conventional construction, and have significant penetration resistance.

Once he finished the contracts he was working on, Q decided to build Josh's "Ultimate Bug-Out Machine". He got lucky when he found a Cummins dealer in Anchorage, and had them ship the Cummins 525 ISX turbo-diesel and an Allison semi-auto 6-speed transmission. He called Advanced Adapters, and they said "You want to do WHAT?" After talking with one of their engineers, they located a 2-speed full-time transfer case (2H/2L/4H/4L) with the correct ratios and a PTO adapter that could handle the horsepower and torque specs from the Cummins diesel engine. They told Q that what he wanted to do would require some adapters, and Q said "So?" They sent a quote to Q before they did anything else. Most of their transfer cases cost several thousand dollars, but this huge unit that they had in back unsold listed for $10 grand, and they sold it to him as used equipment with a standard warranty for $8 grand. Q had them build the drive shafts and yokes to match up to the differentials and transfer case once he had the lengths figured out. Q realized the track would be a bunch of custom work, since no existing half-track would be as heavy or large as the UBOM. He did some research, located a design for the German Sdkfz 251, and called a friend of his that was into German WWII reenacting, and located someone with the plans for the German halftrack. He called another friend of his who made custom aluminum wheels, and sent him the specs and dimensions for the German bogie wheels. Modern Aluminum wheels are not only lighter, but stronger than WWII-era steel wheels, so he had him make all the bogies out of aluminum. He needed to make the drive wheels out of steel since they were a high-wear part. He located surplus Israeli tracks with

removable rubber tread blocks that would fit, and ordered 6 sets.

With all the parts ordered, he started working on the frame and body. He decided to bury all the fuel and water tanks between the frame rails again, and instead of a conventional radiator, he used the engine heat to keep the oil and fuel warm using imbedded thermostatically controlled heat exchangers and a small oil cooler to keep the engine cool during the summer, which was also thermostatically controlled and used a novel air scoop to duct air to the cooler when needed. The entire hood tilted forward as one piece, and came off when you removed the hinge pins for easier access to the engine. There was enough spare room under the hood to install a pop-up 6-round 2.75" rocket launcher, so he did. The vehicle didn't have a conventional windshield, instead the driver used day/night video cameras and monitors or periscopic vision blocks to see out front. He had a matching camera out back for rear-view, and could switch views with a steering wheel mounted toggle switch. To his right was the commander/gunner position, which controlled the Ma Deuce on the remote turret on the roof, as well as the Browning 1919-A4 machine gun out front in a smaller lower-mounted turret for anti-personnel use. The Hellfire launcher was mounted in the same turret as the BMG-50, and used the same laser designator. He'd gotten a look at the Bradley Robo-gun, and it gave him a bunch of ideas. He didn't need that big of a gun, but he copied most of its features, including the video, aiming, and stabilization systems.

Behind the driver and gunner/commander was a 3rd seat for a Crew Chief/loader/gunner who was responsible for keeping everything in the complex vehicle running, and could double as a gunner if the electronics failed and he needed to manually fire the Ma Deuce. Behind him was seating for up to 8 or extra cargo space depending on whether the seats were installed. Even with the seats installed, they had more than 2000 cubic feet of cargo space. Q built the UBOM with a 12-foot wide track, and a 50-foot wheelbase. The tracks supported 45 feet of wheelbase, leaving the 2 huge military tires up front for steering, and if needed, the transfer case could be switched to 4wd mode, and the wheels could pull as well. With 525 horsepower, the 10,000 pound vehicle had a great power to weight ratio, and could safely carry 10,000 pounds of cargo, and tow another 20,000 pounds. Q abandoned the idea for the underwater swim kit, and decided to stick with making the vehicle watertight and equip it with a snorkel that gave them a 10-foot fording depth with a 2-foot margin. The vehicle had a 3-foot ground clearance to the bottom of the skid plate, and the top of the vehicle was 12 feet above the ground. The rear of the vehicle was equipped with a combination loading ramp and bobtail lift. The crew compartment had a roof hatch and ladder rungs for access/egress when the cargo compartment was too full to enter and exit the vehicle that way. Once Q finished the UBOM, he took a break, then realized his composite armor might be a huge source of income, and decided to shop around for licensing agreements.

Northrop/Grumman designed a follow-on to the PBY Catalina based on Russian design for a Wing In Ground-effect (WIG) aircraft, only bigger, faster and about 3 times the cost. Jake was looking to expand their business when he heard about the NG Gooney Bird. Q being the

enterprising soul he was, had contacted Northrop/Grumman and showed them his aluminum/carbon fiber/Kevlar composite he had developed for armor. NG's engineers were amazed, and realized with this new material, they could eliminate almost all of the interior structural bracing of the fuselage and most of it in the wings. Kevlar and carbon fiber had come way down in price since the 1990's, and they realized that the plane could be bigger, lighter and stronger than the just-announced Boeing Pelican, giving them a much better plane than the conventionally constructed Pelican. Q's first licensing check allowed him to pay back Josh his entire investment, and renegotiate their contract so Q got 50% of the profit as well. Q would receive annual checks from NG from their licensing agreement between $2 and $5 Million per year based on the use of his invention, and any developments NG made in new composites based on it. Q also received rights to license any new composites developed by NG for use in his armored vehicles. NG thought that was a good idea, because they didn't want to risk multi-million dollar aircraft field testing the armor characteristics of their composites. When Q indicated that he had a laboratory with access to military weapons, and the ability to test composites for armor qualities, they also made Q a consultant for any future composite armor testing, since they didn't have access to the weapons needed to test their new armor composites thanks to anti-gun laws in California.

The Boeing Pelican was first to market with a huge Military Contract, and when Northrop Grumman's engineers got a got look at it, they knew they could design something bigger, faster, and more efficient, using Q's new composites. Their plane, dubbed the "Gooney Bird" by some wag engineer was 600 feet long vs. Boeing's 400 foot plane, and instead of making the main wing a ridiculously wide 750 feet, they added a 300-foot forward canard right behind the cockpit with 2 counter-rotating turboprops, giving the plane the same lift as a 900-foot main wing, with lower drag and 2 fewer landing gear. The main wing was just over 500 feet wide with 4 counter-rotating turbo-props, built by Royce/Allison. It was a true flying boat and never had to land at airports, so they built it big and wide. It had wheels, but was only supposed to beach long enough to load and unload passengers and cargo, and it landed and took off on water. Northrop described it as a ship with wings, except this ship traveled at 400 knots! Once the prototype completed testing, the military cancelled the rest of Boeing's contract in favor of the Gooney Bird. The Navy had plenty of harbors and loading equipment they used to use to load ships. N/G sold Allakaket Airlines 12 GB's at 50 Million each, and Jake leased terminal space in Southern California, Anchorage, Hawaii, Australia, Japan and France. Russia asked if they could install a terminal on their East coast for freight and passengers since Aeroflot was bankrupt, and they had to rely on outside contractors for passenger and freight to and from Russia. Jake e-mailed them his design for a passenger/cargo terminal that took advantage of the GB's Ro-Ro capablity. They formed a new publicly-traded corporation called WIG Transport International. It was listed on the NYSE as WTI, and the initial offering sold out the first day it was offered at $10/share. By the end of the month, when they had effectively cornered the international overnight long-haul freight and passenger service, WTI stock was selling at almost $50 per share and was heading higher. Ron and the rest of his family's fortunes doubled in their first year, and WTI was now listed on Forbes Fortune 100. Allakaket was now one of the

biggest most wealthy towns in Alaska, and was experiencing a construction boom.

Q took his composite design to Sikorsky (The license to NG wasn't exclusive - only limited to fixed wing aircraft) and asked them to make a dozen S-76 with the new composite armor, and the 007 weapons package, except they might see if some AIM-9L Sidewinders would work instead of short-range Stingers. The engineers explained the avionics of the S-76 wouldn't support the Sidewinder, but they knew of an upgraded Stinger they could install - it had the same external dimensions, just better software so it wouldn't go "goofy" as easily, and had a wider acquisition cone and better sensitivity on the IR sensor, so you didn't have to point the helicopter right at the heat source. They offered to build a dozen Third-generation S-76's instead of paying him a royalty fee -ever. At several million dollars per copy, Q thought that was a good trade, and stipulated that NG already had a license for Fixed wing aircraft, so they couldn't use the armor on fixed wing aircraft without violating their license agreement. Sikorsky was almost 100% rotary wing by now, so that wasn't a problem. They signed the agreement, and stopped production of the current S-76 to implement the new composite construction when Q showed them his test data that the armor would defeat a 25mm round, since the largest airborne cannons were 20mm except for the Warthog, which was due for retirement, they knew that this chopper would be invulnerable to everything except an airborne or ground launched missile, which was an improvement over the Original Blackhawk's standard armor package.

In 2035, Ron announced his retirement as CEO and President of Allakaket Airlines. He would remain the Chairman of the Board, and his sons Jake and Josh were taking over day to day operations officially. In a big retirement party, Josh and Jake flew their parents to the new terminal in Anchorage and showed them their latest idea, a collaboration between WTI and NG, which converted one of the Gooney Birds to a Luxury cruise ship. Instead of spending weeks getting there, you got to spend weeks at your location in a huge floating hotel. Instead of huge cargo spaces, the plane was redesigned as a cruise ship, and except for baggage and mail, there was no cargo aboard the ship. The rear of the ship featured a flooding well deck that could submerge to allow small boats that were larger than their speedboats, jet skis, etc. to dock and load/unload passengers at islands that were too small to accommodate the massive terminal and ramp space needed by the huge WIG transport. Because there was no conventional tail on the WIG, they were able to install a huge rear ramp/flooding well that would operate on land or sea, and a smaller floating dock on the side of the fuselage that would be used to handle smaller craft like 12-passenger speedboats and jet skis of all types. The roof of the aircraft was designed as a Heliport with an elevator that could transfer helicopters up to the size of the S-76 from the storage hangar in the plane to the roof for landing and take-off. The front half of the upper fuselage could be used as a deck with shuffle board and lawn chairs when they weren't moving. The plane had all the amenities of a regular cruise ship, minus the sea sickness, and it could travel from Los Angeles to Hong Kong in less than a day at 400 knots. Since the cabin wasn't pressurized, they could have huge bay windows in the VIP suites, but they didn't open for safety reasons. The lack of balcony space was a small price to pay for the speed and reduced

transportation costs.

The maiden voyage of the SuperCruiser was from Anchorage to the Solomon Islands. Ron had always talked about going to them since he still loved diving, but never got a chance until now. Josh and Jake had invited every one of Ron and Nancy's friends to come along, including Ronnie Barrett, and the new CEO of Northrop Grumman, who was hired to clean up the company and was a Born-Again Christian. With his squeaky-clean image and demanding ethics, he soon mucked out Northrop-Grumman of every corrupt employee he could find. He demanded that all their contracts would be renegotiated, and stuck to his guns about not paying bribes to Federal officials, or anyone else. Boeing and the rest of the industry went along with it, actually they were dragged kicking and screaming by Mike Coughlin, who threatened to blow the whistle unless they went along. The General Accounting Office stood behind him, since investigating kickbacks would be so much easier if it weren't so rampant, and that was that.

They all met in Anchorage, and Ron was surprised when he saw the interior of the SuperCruiser. Their personal stateroom was huge, with a 6x6 bay window on the port side of the fuselage in the middle of the plane between the wings where it was the quietest. Instead of structural bracing, NG had added extra insulation to the SuperCruiser, so all the passengers could hear when the massive turboprops were running was a low hum. Once they were all aboard, the WIG took off for the Solomon Islands. It took a while for Ron to get used to flying 50-100 feet off the water until a helpful steward explained the entire plane was controlled by computers with a millimeter-band forward-looking radar that detected obstructions, and commanded a smooth clearance route, and a return to the optimum Wing-in-Ground-Effect altitude. They carried enough fuel to circle the globe without refueling, and were so fuel efficient that they were quickly replacing conventional ships for everything but oil tankers and super-heavy cargo. Configured as a cargo hauler, the Gooney Bird could haul as much cargo as the biggest container ships, and still carry over 100 passengers in comfort. The other configuration could haul up to 1,000 passengers, and the rest in cargo. Unused passenger areas could quickly be converted to haul express packages pre-loaded in containers, so if they only filled the top deck with passengers, the remaining 3 decks could be filled with light cargo.

Before they sailed, they held a christening ceremony, and named the SuperCruiser the "Anne Williams" in honor of his mother. They all boarded, and once everything was secure, a huge powerful tug backed the mammoth craft back away from the terminal, and out into the bay. Once they were facing the open water of the Pacific, and had received clearance, they started all 6 enormous turboprops, and slowly built up speed. Once they came up on plane, they quickly reached rotation velocity, the computer commands selected the proper attitude, and the SuperCruiser was flying in ground effect. The ship was so computerized that all the pilots did was monitor the systems, including a powerful forward-looking radar, and an anti-collision radar system that would either change course or altitude to avoid surface contacts. With the calm sea state, they were flying at the optimum height of 50 feet above the water, and were

averaging 400 knots. 12-13 hours later, they should be at their destination. They touched down in the Solomon Islands, and taxied toward the center of 5 dive sites they wanted to explore, then shut down the turboprops and switched to inverter power. The upper surfaces were covered with Quantum Dot photovoltaic paint which generated enough power to replace the power generated by the turboprops. They had a backup turbine generator to supplement the output of the solar collectors in the event of cloudy weather, or high draw during darkness.

There was hardly any motion to the vessel, which was bigger than some Naval vessels. The fuselage itself was bigger than the Ticonderoga Class Cruisers. With the wingtip stabilizers deployed, the ship's roll was virtually eliminated, and the 600-foot length minimized pitch changes. Once everything was set, they hauled the runabout/dive boats out of storage, lifted them on a sling out the starboard floating dock and set them in the water. Jake had made sure to hire several qualified Dive masters as part of the crew, since they liked diving so much. They didn't have a galley in the runabouts, so everyone changed into their wetsuits in their cabins. Most everyone wore Lycra suits since the water was over 80 degrees. In order to avoid giving Bear a heart attack, Nancy and several other women chose to wear regular wet suits. That didn't stop them from teasing poor old Bear, who was in his late 70's by now. Josh made a show of packing the Auto-Defibrillator for Bear. Everyone had a good laugh remembering when a much-younger Nancy went diving with Bear and almost gave him a heart attack. Josh looked at his Mom, and while she was still pretty, he couldn't imagine Bear having a heart attack over her. He wisely decided to ask his dad at a more opportune moment if he had any pictures of Nancy when she was younger. He wondered if there was any truth to the saying that men married women that resembled their mothers, because both he and Jake married a couple of Hotties! He remembered his dad saying something that Samantha was a serious Hottie in her day. Judging by Bert's girlfriend, he could see that there might be some truth to the old wive's tale.

In order to avoid crowding, they were going to dive 3 sites using 3 boats. One boat was just for snorkelers, who would go to the shallow sites, one was for non-certified divers with several diving instructors, and 1 was for certified divers, with the dive master aboard. Josh and Jake had kept their certificates current, as had their Mom and Dad. Sheila and Diane joined them, but were supposed to not dive deeper than 30 feet, since they didn't have a full open-water certificate. Bear was grumbling to Mary about being relegated to the Kiddie Pool until Mary pointed out at his age he was lucky to be diving at all. Bear stopped grumbling, at least out loud. When they reached the diving site, the dive master took out several floating battery powered diving compressors that could provide air to 6 divers at a time down to 20 feet. He said the battery should last the whole day since the top was covered with the same photovoltaic paint as the SuperCruiser.

Bear already had his mask, fins, and snorkel on, and waded into the water with Mary, Steve, General Stone, Dan, and Rebecca. The rest of the kids were supervised and kept in the shallow water close to shore. Bear explained the safety rules to everyone, and they submerged. Bear

was quickly lost by the beauty of diving in the warm clear South Pacific lagoon. It was like diving in a Salt water aquarium. They were each given a simple digital underwater camera, and Bear spent the entire dive taking pictures of the fish. 2 hours later, he heard an underwater buzzer, and realizing he had been underwater for 2 hours, came to the surface for a mandatory surface rest. He floated on his back in the salt water, enjoying the zero gee sensation of the water supporting his tired old body. Once he had been on the surface for half an hour, he was allowed to go down again. The next break included sandwiches and all the water they could drink. Bear forgot how dehydrating diving could be, and drank a whole quart of water by himself. He decided to lie on the beach for the next diving session, and was grateful that someone had thoughtfully set up beach loungers with canopies to prevent him from getting a sunburn. He fell asleep, and was bummed when he woke up, and Mary was telling him it was time to go back to the boat. He wanted to dive some more, then he realized how tired he was.

He made it out to the runabout, and was surprised at how quiet it was. The Captain explained that due to the Pollution Control law of 2020, all watercraft were required to be 100% electrically powered, so the runabout used solar power from a new photovoltaic paint that covered the hull to drive electric motors that ran the jet pump for the shallow-draft boat. Bear asked him what they would do if they ran out of power. The first mate grinned and said that the PC law of 2023, introduced after a major accident resulted in the loss of over 100 people from a boat that lost electric power in a quickly building storm which swamped the powerless boat, allowed for “emergency” generators aboard any watercraft designed for more than 2 people, and suddenly everyone was adding small diesel or turbine powered generators to their larger watercraft. Bear had to laugh and said “Wouldn’t it have reduced pollution more by just shutting down DC?” The skipper and first mate laughed their heads off then went back to their work.

When they approached the SuperCruiser, Bear saw all kinds of watercraft swarming around the ship. The captain slowed to a crawl to navigate among all the small jet skis. Bear realized that they were battery powered too when he didn’t hear any engine noises from the jet skis. He remembered when Jet Skis had big powerful and loud engines to drive their jet pumps. Was it really that long ago? He shook his head and paid attention to the runabout’s docking procedure. They handled the docking like a good Navy sailor would, and lightly touched the bumpers before securing the aft and forward lines to the dock. Once everyone was disembarked, the overhead gantry slid out with 2 slings that were fixed under the boat, and the boat was lifted out of the water and carried back inside the hull of the SuperCruiser. Bear made his way to their cabin where he took off the lycra suit, and took a shower. They were too tired to go down to the main dining room for dinner, so Mary ordered room service. Bear was glad he still had all his teeth, and ordered a nice big medium rare ribeye with all the trimmings. Right after dinner, they went to bed, and were soon fast asleep.

Chapter 3 - The Mad Scientist

Q was in his laboratory when he hit on a novel idea to combine WIG with a Hovercraft. As big as the flooding well was, they could easily store 2 WIG/Hovercraft nose to tail that could hold 100 passengers each. He started working on his design, and thought if he used his new composite, he could make the hovercraft much lighter than existing hovercraft, and more aerodynamic, to the point that it could average 400 knots and 1,000nm range in WIG mode, and 50 knots/250nm in hover mode. He realized when they came back from the maiden voyage of the SuperCruiser that they wouldn't always be stopping at ports with the appropriate terminals, and they needed something bigger and faster than the runabouts to transfer passengers and supplies/cargo between the SuperCruiser and the shore. The helicopters could only carry 8 people at a time, and were no faster than maybe 180 knots. He covered his huge erasable white board with equations and drawings until he came up with a workable design. Ordinarily the skirts on a hovercraft were very flexible, and were constantly getting torn. He had access to newer tear-resistant materials, so he decided to go with a rigid skirt, and an aerodynamic cowling so the hovercraft's body would become a lifting body at speed, and he could shut down the 2 high-bypass turbofan engines that provided lift in hover mode. Once it was in full WIG mode, it could quickly accelerate to 400 knots. The winglets needed to provide enough lift for WIG mode folded for storage in the well deck. Even though it didn't need that much electricity, Q decided to include the photovoltaic paint since all the other WIG craft were using it. He contacted several aircraft manufactures and started a bidding war between Northrop/Grumman, Boeing, and Airbus. Boeing won the war when it offered Q $5 Million up front, plus 5% of the net profit for 10 years. He got a sweetheart deal for WTI to purchase as many WIG/Hover craft at 5% over cost as they wanted. Josh had to admire Q when he heard what he had pulled off, he would quickly become one of the richer men in Allakaket if he kept this up.

Q thought of some other applications of the WIG, and came up with some neat toys for WTI to put in their cruise liners, including a 6 passenger WIG runabout that was propelled by a conventional propeller on a long shaft, using an updated Moller Rotary Engine, rated at 200 horsepower burning gasoline, which could burn just about any fuel including JP-5 and had a top speed of 100 knots. It was designed as a rental craft, and could pull skiers or a para-glider at reduced speed. His other design was much faster, and powered by single high-bypass turbofan. It could travel 500 miles at 500 knots and carry 4 people and 20 cubic feet of storage. It had landing gear so it could beach on a hard surface ramp. It was for the use of the crew or authorized trained passengers. He looked into some older piston-driven helicopter designs, like the Scorpion that used a Rotax engine, and considered building something similar with a fully enclosed cockpit (it was too dang cold in Alaska 9 months out of the year to fly around in an open cockpit, even at 80 knots.) He realized the Moller Rotary Engine he used in the WIG Runabout would make a great helicopter motor with a turbocharger to boost the horsepower to over 300hp. If he made the body out of his lightweight composite, and kept the weight down, he might get a 100kt cruise speed, and a top speed of 140 knots with a range of around 200nm.

When they came back from the trip to the Solomon Islands, David and Heather got right to work on his new projects. Heather had become more like his right hand than an employee. She really knew her way around a graphic design project, and her help and suggestions had been invaluable several times already. Levon was really becoming attached to David, and he noticed that Heather was getting much more cuddly after his grandma's funeral. He didn't want to rush into things, but he started thinking differently about Heather.

Jake had deliberately invited the editors of several travel magazines on the maiden voyage of the Anne Williams, and their articles brought in a flood of requests for travel dates. Realizing he might be on to something, he called Ron, Josh, Sarah and David together and asked for their advice. Northrop/Grumman could deliver a new SuperCruiser at a rate of 1 every 90 days, and if he wanted them, he needed to order them now. Ron suggested they place the order now, and start lining up crews for the new high-speed cruise ships. He said that this was a revolution in cruising, instead of spending days or weeks on the open ocean getting to your destination, you spent a day getting there in comfort and style, then you had the rest of the cruise to enjoy and explore the destination. Josh, Sarah and David agreed, so Jake called the CEO of Northrop/Grumman and ordered the next 2 years worth of production. The NG CEO was positively giddy, and told Jake that they had a very good moneymaker on their hands. Ron asked if he could talk to Larry. Ron told him that he could have a suite on the VIP floor of the Anne Williams for his personal use whenever he wanted to. Larry thanked him, and said he'd take him up on it when he wasn't so busy. Just filling the orders for WTI would keep their production line in Southern California busy for the immediate future. When he hung up, Jake explained that he had already ordered their entire first 5-year's production of Gooney Birds, since everyone wanted WTI to fly to their destination, and several cargo companies were approaching WTI for not only priority cargo, but regular cargo runs that could be handled with a conventional ship when they found out he was charging less than conventional shippers because he charged by the ton, so it was cheaper to ship light bulky stuff through WTI than conventionally. It was 10 times quicker, which manufacturers loved. Instead of ordering parts 6 months in advance, they could reduce their lead time by the difference in shipping time, which could be as much as 90 days. That reduced their costs because their line of credit wouldn't be tied up so long.

Later, Q was mulling over how to build his super-sport chopper when he ran into Jim, the corporate helicopter pilot, quite literally. When Q picked himself off the ground, Jim helped him up and introduced himself. Q said "Man am I glad I ran into you. The reason I wasn't paying attention to where I was going is I'm trying to design a 2-seater helicopter using my new composite and a Moller Rotary engine."

"I'm not doing anything right now, let's go to your lab so I can show you some stuff."

They walked into Q's lab, and sat down with 2 mugs of steaming hot coffee, black with sugar. Q explained what he wanted, and Jim made some suggestions.

“First of all, if you want any speed and lift capacity, go with a 4-bladed rotor. Second, you said that Moller Rotary engine puts out 200hp normally aspirated, how about adding a turbocharger? The slight increase in weight might be worth an extra 50-100 horsepower. You said something about a fully enclosed cockpit. If you design it with a nose like the Sikorsky S-76 and made the body aerodynamic, you gain speed and lose drag. As small as you want this to be, I’d use fixed skids for landing. The Sikorsky is made mostly of composites, but from what you tell me, your composite is lighter and stronger than the stuff they made the old 007's out of, so you might be able to make a monocoque frame, with the skin replacing the structural members. If you could pull that off, you’d save a lot of weight, and weight in a helicopter is critical since the engine has to lift everything, instead of a fixed wing where the wing does the lifting, and all the engine has to do is push.”

“I wanted to possibly arm this helicopter - How about a centerline mounted Ma Deuce?”

“Too heavy and too much recoil for that small chopper. You realize your helicopter will weigh less than the old MD-500? .50 caliber ammo is heavy too. What were you thinking of shooting at, tanks and armored vehicles?”

“Not really, more like troops on the ground. We’ve got bigger planes with big guns to do that.”

“How about a 5.56mm Mini-gun?’

“Huh? I thought the smallest minigun was 7.62 NATO?”

“Take the 7.62 NATO Minigun and re-barrel it for .223! The ammo is almost 1/3 the weight of the 7.62 NATO, so you can carry 3 times as much, say 6,000 rounds. At slow speed, 1000rpm, that would be 6 minutes worth of ammo. At high Speed, 3000rpm, that would be 2 minutes worth of ammo. But remember you only fire 1-3 second bursts at a time, or you’re wasting ammo.”

“How’s that?”

“You’re flying, or hovering so you’re point of aim is constantly changing. You might start off on target, but a second or two later, you could be 50-100 feet off target. Your GE Minigun would really be better as an area weapon, to sweep left and right using your anti-torque pedals. A 3 second burst would cover a large area with a good pedal sweep. Just make sure there are no friendlies in the area, since the minigun would be pretty indiscriminate. If you were planning on belly mounting the gun, you could build a integral belly pod to house the gun so only a couple of inches of barrel sticks out, protecting the gun from weather and ground fire. If you stretched the cab, you could mount a 6,000 round ammo container behind the seats to feed the gun with a short flexible coupler. By the way, what kind of fuel does the Moller Rotary run on?”

“That’s the beauty of it, it can burn practically anything from Jet Fuel, to Diesel, to Kerosene, to various octanes of gasoline, and Methanol. If you burn methanol, you need to change a couple of things since the Methanol is corrosive to some of the components.”

“Didn’t I see a Moller Rotary Generator?”

“They build multi-fuel generators as well that can also run on Propane or Natural gas.”

“Cool, that’s something we should look into for other applications. All our wheeled transports burn diesel or Avgas. If we could build some wheeled vehicles with the Moller rotary engine, it would be a true multi-fuel, and if we ran out of 1 fuel, we could switch fuels and keep them running.”

Jim’s last statement got Q thinking, and he started taking notes furiously. Jim looked over his shoulder and Q had listed: 2-seater single-track Snowmobile 125hp, Snow bug 125hp, APC 300hp, generators 75hp, armed & armored airplane 300hp, 4wd passenger vehicle/pickup 125hp & 300hp. Q was a big fan of old warbirds, and thought that if he built a straight-wing monoplane out of his composite, he could make a light fast attack aircraft that could carry almost it’s weight in bombs, and still have a deadly armament. Because it was a defensive aircraft, it didn’t have to be blazingly fast or have long range, so he started writing his design based on the US P-51 Mustang design, with 6 Ma Deuce machine guns in the wings, and bomb racks under the wings. The plane would only weigh 3,000 pounds fully loaded, so the 300hp Moller rotary engine would be enough to give it good performance and a maximum speed around 400 knots. He spent the rest of the day researching any available plans for the P-51 Mustang, then realized he wasn’t making a direct copy, since the materials he was using were far superior to WWII-era materials. He decided the easiest design would be a tail-dragger like the Mustang to help clear the big prop.

When he realized what he was doing, he started checking into the old Warthog, which was a similar design, but a designated tank buster with the huge GAU-8/A 30mm gun. He was intrigued by all the weapons the Warthog could carry under it’s wings, and double checked the weights and sizes. He thought the Sidewinders would be cool sitting out on the wingtips, and knew that the MK-82 500 pound bombs and the CBU’s would be great for defensive bombing and strafing runs. Obviously he couldn’t carry 16,000 pounds of ordinance, but he could carry say 4-6 MK-82s, or 4 CBU-52's and still have a full load of fuel and rounds for the Ma Deuce machine guns. A spread of 4 CBU’s could ruin an enemy general’s whole day!

He e-mailed his design to a friend of his who was an Aviation Engineer, who suggested reducing the number of machine guns to 4 and increasing the ammo storage to 400 rounds per gun. He said that the plane would be slow and sluggish lugging all those bombs, and he’d be better off building a twin-engine version with a 50BMG mini-gun in the nose. That got Q thinking. 2 300hp engines spinning props, only adding maybe 150 pounds of weight (100 for

the engine, and 50 for the cowling and bracing) say the weight went up to 3500 pounds, but now he had 600hp on tap, that changed his power to weight ratio from 1:10 to 1:6. The P-51 Mustang only had a 1:7 power to weight ratio! He sent his friend the new design, and he said with 600 horsepower available, he could easily haul 2-3 thousand pounds of ordinance along with the 50-caliber GE Minigun and 3,000 rounds of combat mix. His top speed would still be around 400 knots, but his rate of climb would be much greater, and if he designed the control surfaces properly, it would be very maneuverable.

Q asked his friend to finish the design for him, and he'd pay him for his time. 2 weeks later, his friend e-mailed Q a preliminary design, and a bill for $500 dollars (which happened to be exactly the amount of money he owed Q from his last project). Q laughed and replied that the debt was settled, and if he made any money off the design, he'd send some money his way. He replied that they'd be square as long as Q named the new plane the Chicken Hawk. Q laughed at the old joke. During his RAAF days, that was what his squadron mates called him as a joke, and it kind of stuck. Q replied to his e-mail and said that he'd be honored. Q ordered the engines set up for use in an airplane, which included a thrust bearing, and a huge turbocharger with a waste gate so it could still make horsepower at altitude. Q thought about that, and added an oxygen bottle with enough capacity to last twice as long as he needed since he didn't want to mess with a pressurized cockpit. He bought a surplus ejection seat in case he had to bail out, and the design arrived in the mail in a huge plan tube. Q got with his fabricator, and they started cutting sheets of his composite armor to make the airframe and skin. He sent the design to the FAA so he could register it as an Experimental aircraft. Because his buddy was a certified aeronautical engineer, they approved the plans as a home built experimental aircraft. He left the GE minigun and weapons hardpoints out of the plans he sent to the FAA, but what they didn't know wouldn't hurt them. They just assumed he wanted an aerobatic sport plane instead of a Close Air Support aircraft.

By now Allakaket had added a 12,000 foot hard-surface runway and upgraded the facilities to a International Airport, allowing private planes that weren't amphibians to land there as well. With the new airport, Allakaket Airlines bought several jet airliners from Boeing to expand their services to a regional airline. Alaska Airlines had been in decline for the last couple of years, and when it was obvious that they were going under, Jake made a bid to buy them out. Buying the company gave them Alaska Airlines routes. Jake sold their obsolete planes, replacing them with smaller 100 passenger planes. They also got their deicing equipment, and Jake decided that they had enough money to make the airport open year round and purchased heavy-duty snow removal equipment. Their fuel distributor built a pipeline from the nearest port and installed tanks when they realized just how big Allakaket Airlines could get, and wanted an exclusive contract.

Q thought about his 2 latest inventions, and realized he would have his own little Air Force if he kept it up. The helicopter was finished before the airplane, and Jim volunteered to be his test pilot. When he came back, he said that it was a sweet-handling little helicopter, but the controls

required a light touch with the Moller Rotary engine putting out 300hp. He took Q up in the passenger seat, and he had to admit that Jim knew what he was talking about. The little helicopter was nimble and quick. It topped out at 140 knots straight and level, but got there in a hurry, and climbed like an express elevator. Jim had set up a target range at the Survival School, and fired a couple of bursts from the 5.56 minigun into a junk car body. The body metal looked like Swiss Cheese when they sat down to examine it. Jim told Q the tiny 5.56mm bullet didn't have much in the way of penetrating power, but would work great for troops on the ground, or light skinned vehicles. Q told him of the CAS plane that he was building, and Jim said that the 50-caliber GE Minigun could ruin your day in a hurry. He told Q to forget about the Mark 82 iron bombs, and concentrate on the CBU-52, since the little unguided 250 pound bomb was really a point weapon compared to the CBU, and took some serious marksmanship to put the bomb on target, whereas the CBU-52 could blanket a whole area with bomblets, and take out everything in it's dispersion pattern. Q built the plane as a simple stick and rudder plane and didn't include the avionics necessary to use the smart bombs, since he doubted they would ever be needed. Q was an old warbirds fanatic, and built the plane as a simple stick and rudder setup just because wanted to.

3 months later, the Chicken Hawk was ready to fly. Q had somehow managed to maintain his pilot's license, and insisted on being the first pilot to fly the CH. Q was wearing a flight suit, a G-suit, and a surplus fighter pilot's helmet with the oxygen mask when he climbed up the ladder to the Chicken Hawk. The chief mechanic was there to assist, and finally Q got himself strapped in and connected his oxygen and radio pigtails. He flipped a switch, and the canopy motored closed. He got the canopy and the seat from the same F-16, and had them checked over before he installed them. The plane wasn't painted yet, so it was a golden brown color, which Q thought was a perfect color for a Chicken Hawk. He started the engines, and once the gauges were in the green, he had the mechanic pull the chocks, and he taxied to the runway.

"Chicken Hawk 1 requesting clearance for take-off and test flight."

"Roger Chicken Hawk, Stay below 1,000 feet until 10 miles away. The area Northeast of the tower is clear above 2,000 feet for test flight. Good luck, and clear for take-off."

Q was facing the end of the runway by the time the tower called back. He immediately advanced both throttles and roared down the runway. At 85 knots the plane wanted to fly, and by 95 knots, he was flying, so he pulled back gently on the stick, retracted the gear, and climbed to 1,000 feet. When he was 10 miles out, he called back to the tower.

"Allakaket Tower, at the 10 mile limit, beginning test flight."

"Roger, Chicken Hawk - have fun. Call when you're ready to return to airport."

Q advanced the throttles again and said to himself, "Let's see what this baby can do!" as the

airspeed indicator wrapped around, he pulled back on the stick, and 4 minutes later, his altimeter said he was at 10,600 feet. Doing the math in his head, he realized that he had managed a 2150 feet per minute climb rate. Not bad for a home built. With a full bomb load, he'd be lucky to break 1,000 feet per minute. After performing some basic aerobatics, he turned toward Allakaket, and called the tower.

"Chicken Hawk 1 requesting landing clearance."

"Chicken Hawk, the pattern is clear, you're clear to land."

5 minutes later, the Chicken Hawk was on the ground. When he finally got out of the plane, Josh was standing there.

"How'd it go Q?"

"Magnificent Sir. She handles like a dream, and I managed a 2100 foot per minute climb rate. Even with a full load of bombs she should be good for 1,000 feet per minute."

"Mind if I take her up?"

Q was reluctant to let anyone else fly his baby, but he knew Josh was an excellent pilot on top of being his boss, having flow numerous times with him before, so he told him to suit up while he refueled the plane and checked it out.

Josh came back 10 minutes later wearing a flight suit, G-suit, and carrying his helmet. Q was stunned, and asked Josh were he got the gear.

"Probably the same place you did. I knew you were building the Chicken Hawk, and I've never flown a military aircraft before, but I have flown numerous twins, and I've done aerobatics."

"Do be careful sir!"

"Don't worry Q, I won't leave a scratch on her."

Q helped Josh plug in, and explained the controls - what little there were. The plane was a simple stick and rudder plane, with the FAA minimum of gauges and gear. Once Josh said he was OK, Q climbed down, and Josh started the engines. He taxied to the flight line, and took off as soon as he had clearance. Since the pattern was wide open, and Josh was the Boss, he did a max performance take-off, and went from the deck to 10,000 feet in under 5 minutes. He immediately pulled a wing-over, bottoming his dive at 1,000 feet AGL. He used his speed to zoom climb back up to 10,000 feet where he did a series aerobatic maneuvers including a Cuban-8, Immelmann Rolls, split-S's, and for good measure, he tested the stall characteristics of

the plane. It didn't stall easily, and recovered very easily. When he looked at his fuel gauge, he knew it was time to get back to the field. Aerobatics really ate up fuel. He landed with maybe 1 gallon left in the tank.

When he climbed out, Josh said "Q, this plane is a dream to fly, is there any way you can add some fuel storage without messing it up."

"How many gallons were you thinking, Sir?"

"Maybe a 5-gallon reserve tank. Aerobatics or Air Combat Maneuvering eats up a lot of fuel. With a bomb load, it would go even faster."

"I'll get right on it!"

"How much would it cost to build 6 more copies with the 5 gallon reserve tank?"

"Including the Mini-gun and stuff, right around $100 thousand per copy."

"Great, here's a check for $1 Million, make 10 of them."

"Yes sir!"

Q knew he needed to build an assembly line to mass produce the planes, plus whatever else they were going to build in the next couple of years. He called a couple of his RAAF buddies, and soon had a small team of craftsmen who could build anything from a set of plans. He checked with Josh, and got permission to hire a dozen apprentices from town to teach them everything they needed to know to build and design all the toys Q was coming up with.

Chapter 4 - Bon Voyage

Once Ron realized the company was in good hands, he talked to his kids, and they told him to go ahead and enjoy themselves. If they needed anything, they could get hold of him via his Satellite phone anywhere in the world. Communications had evolved to the point that satellite phones were just as cheap as regular cellular phones for high-end users, and encryption was so common and so robust that the NSA threw their hands up and gave up trying to intercept phone calls Computers were so small and powerful that 100 times the processing power and memory of a typical 2000 Pentium 4 system was now available in a device the size of a 2000-era PDA. They either had a 8-line text message display or a roll-up 2-foot square monitor (the ultimate "flat screen monitor") that came with a prop for viewing upright, or could be laid flat on a table. Input was either from an intelligent 12-key chording keyboard, or else voice input. A small touch-sensitive spot on the keyboard served as a "mouse" but when it was combined with the intelligent keyboard, it could do much more than your average 2000-era mouse. The entire system seamlessly interfaced with the satellite phone system at a terra-byte rate to connect to an unbelievably sophisticated Internet. Webpages were updated in real time, and purchasing could be accomplished with a keystroke, and was 100% secure. Decades ago, the software developers hired all the "hackers" or at least the white hats, and put them to work designing a hacker-proof security system, then kept them on the payroll testing the system and upgrading it.

All that meant was Ron Williams could travel the world in style, and never be out of touch with his kids, or the business. He made a list of places he always wanted to see, and the captain of the Anne Williams programmed the navigation computer with all the locations in a logical sequence. One of their first stops was Brisbane Australia to pick up Sheila's parents for a long-earned vacation. They took the WIG/Hovercraft from just off the coast of Brisbane, and flew it to Sheila's parents house, then back out to the Anne Williams. Once Sheila's parents were on board, they flew the SuperCruiser to the Great Barrier reef, and spent the next month diving all the sites on the reef.

Ron tried to log into the internet one day, and for the first time in years, he couldn't get on. He sought out the Captain, and asked him if he knew why his satellite phone wasn't working, they were supposed to work everywhere. The Captain told him that they had received an alert the other day that a large X class solar flare and accompanying CME might interfere with Satellite navigation systems, so they were to test and verify their location with their GPS while they could, then calibrate their LORAN receivers against the GPS coordinates in case they had to navigate via LORAN. Ron was puzzled, he didn't know that sunspots could cause that much damage.

The next day when the effects cleared up, he logged onto the internet and did a Google on Solar Flares, CME's and Sunspots. He got more information than he bargained for, and one site in particular set him thinking in uncomfortable directions. A bulletin board site called TimeBomb

of all things had several people on it that were very well educated amateurs, who gave him links to the professional websites where the NASA/ESA SOHO site was, and other links to other sites involved in studying solar phenomena. What he read deeply disturbed him. It seemed that 99% of all solar phenomena didn't do much other than sometimes inconvenience satellite users and Ham radio operators working HF frequencies. However, that 1% of the time, a large X-Class flare and Coronal Mass Ejection could hit the Earth head-on when it was out of phase with the Earth's magnetic field, and go right through to wreck havoc on Terrestrial Power systems and anything connected to it, or anything connected to an antenna, or sensitive electronics. Several Scientists claimed that solar activity was not only increasing in frequency, but intensity as well. According to 1 site, One of the great power outages in the US was supposed to have been caused by a smaller M-Class flare and it's associated CME. If an X-class Flare produced a massive CME, and it came through the Earth's magnetic field, it could result in world-wide EMP damage to unprotected electronics. Since the protective measures were similar, he started researching EMP protection. Once he had enough information, he sent an e-mail to Jake and Josh, and they checked into it.

With the kind of money the Corporation was bringing in, they felt it was money well spent to protect that investment, and they started hardening their hangars and other assets against EMP damage way beyond Military spec, or even their most paranoid probabilities, and purchased over $100 Million worth of spares of essential equipment that might be damaged by EMP that couldn't be shut down or disconnected. The spares were stored in the basement of the EMP-protected shelter in a large Faraday cage to ensure their protection against EMP. When Q saw what they were doing, he quickly followed suit, and hardened all his current projects against EMP, and turned his hangar into a huge Faraday cage, including the doors. When they closed, they completed circuits so the entire hangar was protected. He took his computer chip and electronic component storage and put it in a separate Faraday cage with instructions that the cage should never be left open any more than was essential. Allakaket Power and Light realized they were especially vulnerable, and purchased special over-voltage disconnects, and spares of all essential equipment, and stored them in the bunker as well.

Once they were as prepared as they could be, Ron sent them another e-mail with links to the SOHO site, and other sites that monitored solar activity, and added the Java code from the site to their screen saver to indicate Solar activity, or Flare/CME dangers. The company-wide internet was triple-redundant, as were the protections against EMP, Surge, and over/under voltage. Someone was always monitoring the systems 24/7, and would broadcast a warning if a dangerous X-class Flare or CME were headed to earth. If the CME was out of phase, he would send out an order grounding all non-essential aircraft, and parking as many as possible inside EMP protected shelters. Ron sent an E-mail to Larry at Northrop-Grumman, and never got a reply. Ronnie Barrett took his warning seriously, and was able to protect his equipment against EMP damage.

The problem was everyone was worried about nuclear EMP, and wasn't even aware of the risk

of Solar EMP. Ron had a sick feeling that the US and the rest of the world would be in sad shape if they got hit with that 1% chance out-of-phase CME head-on.

Jake and Josh had a surprise for their dad. Not only did they EMP harden the hangars, they sprayed them with a foot of reinforced shotcrete in the process, hardening them against attack from the air as well. Josh checked the Surplus market, and found 8 F-15E Strike Eagles available without engines or avionics. He knew the Israelis were still producing modern engines and avionics for the F-15E, and ordered enough for each plane, and for spares. Once they were delivered, they quickly militarized their aircraft and hired pilots and RIOs to fly the planes. They had plenty of bombs and missiles in inventory thanks to Gene and Gen. Kelly Stone, so now they had a real Air Force as well as the 10 CAS aircraft and 8 of Q's armed helicopters. All of the helicopter pilots volunteered to fly the little Hawk, since it was so much fun to fly, as part of their Militia duties. Alaska had gotten fed up with the BS from Washington, and secretly joined the Secessionist movement. Governor Adkins of Alaska visited Allakaket, and made their Militia official and legal. He grinned from ear to ear when he saw the fully-armed F-15 Strike Eagles and the Chicken Hawk CAS aircraft. He ordered enough Chicken Hawks to outfit 20 State Militia Squadrons with the simple stick and rudder aircraft, since he was expecting a show-down with the Feds any day. What was especially troubling was Chelsea Clinton had married a descendent of the Kennedy Clan, and was now known as Chelsea Clinton-Kennedy, and was starting to become a popular and powerful politician. She hid her true views from everyone but a few select insiders, but she made her mother Hillary look like the Good Witch of the North in comparison.

The other members of the Williams clan had been busy as well, and Josh's son Isaac was 2 years old, and was about to have a baby brother or sister, Jake and Diane had stopped at 4 kids, who now ranged in age from 14-7 years old. Sarah and Neil stopped at 4 as well, and their kids now ranged from 13 to 7. David and Heather were romantically involved since they had both gotten through the mourning process. Finally 1 day David stood up unexpectedly and bumped into Heather face to face. He blushed with embarrassment, then Heather grinned, slipped her arms around him, and kissed him on the lips for the first time since they met. David responded, then when they stopped kissing, he said "We need to get married before we take this any further."

"Let's get married soon, David. I don't know how much longer I can wait. We used to have sex fairly regularly, and now that I'm done mourning, I'm starting to miss it. Levon's old enough to appreciate a kid brother or sister, and I'm not getting any younger."

David kissed Heather again and asked "Heather, will you marry me?"

"Of course I will - let's call Michael and set the date."

Heather called Michael while David went back to work - they were still on a tight timeline even

if they were in love. She walked back into the room, hugged David from behind, and said "Michael's free this weekend. Is Saturday at Noon too soon for you?"

"If you keep holding me like this, it might not be soon enough!"

She giggled, and David turned around to kiss his Fiancé. Next he called his Mom and Dad, then his brothers and sisters to give them the good news. They said they'd be at the church Saturday morning for the big event. Ron called the Captain of the SuperCruiser and told him to fly it immediately to Anchorage, he had a wedding to attend Saturday. They were visiting Hong Kong, so it took several hours to get the passengers back aboard and the Anne Williams fueled and serviced. The next morning they docked at the terminal in Anchorage and flew one of the WIG/Hover transporters to Allakaket with everyone who was attending the wedding. Sheila's parents were still aboard, and wanted to see their daughter anyway, since she was about due to give birth, so this worked out well for them. They spent the time before the wedding visiting with Josh and Sheila, and catching up with their grandson Isaac.

David and Heather took some time off their busy schedule to go to the Jewelers to buy the rings, and the dress shop to buy her dress. David's tux still fit, and remembering the last two times he wore it, bought a new one. David and Heather met Ron and Nancy at Ron's house. They both knew Heather, and approved. Ron took his son aside and said "I called BA on the way home. I'm rescinding your trust agreement if you want me to, and restoring full access to your trust."

"Thanks Dad, I trust Heather with my life, and I know she's not after my money. Having access to that kind of money would allow me to expand my business, hire some help, and really make some money. You wouldn't realize how much money a good Graphic Arts company with the right people and equipment can make. Probably not as much as WTI, but enough to keep it interesting. Speaking of which, here's some stuff I was working for Jake on." David handed his dad a small storage chip, and gave him a hug. Later that evening when he was alone, Ron inserted the chip into his machine, and was amazed at the quality of David's work. He could make a fortune in the Graphic Arts business with this talent, and the $100 million sitting in his trust account.

Finally Saturday morning was there. David and Heather got dressed, and he made breakfast for everyone since he knew Heather would be busy this morning. She came to the table with green goop on her face, and her hair in rollers. David started laughing and Heather said "what's so funny?"

"I was envisioning you at the altar, and you'd forgotten to take your mask off and your curlers out."

"Wait until you see the "After" David Williams!"

“Can’t wait dear. Make sure my Mom knows she needs to babysit Levon for a couple of days.”

Heather sounded disappointed when she said “Just a couple of days?”

“I’m not 18 dear, and I don’t think I could handle much more than that.”

“I guess this means I’ll be on top most of the time?”

“Just as long as you skip the reins and spurs.”

They both laughed hysterically, then ate breakfast before it got cold.

Heather got Levon dressed and fed, then they drove to the church. Right at noon, Heather marched down the aisle behind her maid of honor. One of David’s friends served as his best man, and Michael stood at the Altar waiting for them. Because this was a second marriage for them, they had requested a basic service, and half an hour later, they were Mr. and Mrs. David and Heather Williams. Michael had been tipped off by Carl, and didn’t panic until someone turned blue at a Williams wedding. They met at Ron and Nancy’s place for an intimate reception, then left Levon with his new grandma and drove to their new house to start the honeymoon. 2 days later, David was tired and sore, but grinning from ear to ear, and Heather was pretty sure she was pregnant. 9 months later, to the day, she had her second son, Michael, who they decided to call Mike most of the time, except when Heather was upset with him. Things were going swimmingly for the Williams clan, and Ron knew that was usually a foreboding omen of bad times ahead.

Chapter 5 - More Toys

Once he finished building the Chicken Hawks, Q set about building some more toys. He designed and built a snowmobile using the 125hp Moller engine and his monocoque composite frame technology. After test-riding it, he licensed the design to Polaris for $3 million since he didn't need to build snowmobiles, and it probably infringed on several people's patents. Ron called and asked Q if he could build something with about 7,000nm range and sub to supersonic speed that could land and take off from the SuperCruiser, and carry 10-12 people in VIP mode. Q thought about the old Harrier II and WIG technology, and thought, "What if I combine the 2?" Turbine engines had evolved since the development of the Harrier to the point that a single high-bypass turbofan had enough thrust to lift a 12-passenger jet and briefly hover. Q realized if he combined the ducted thrust nozzles of the Harrier with a WIG configuration, he might have a small transport that could fly at or faster than the speed of sound, land and take off vertically, and was fuel efficient at the same time. Pratt & Whitney made the engine, so all he had to do was build a WIG fuselage and wing around it big enough to carry 12 passengers and 2 crew. He moved the air inlet to the top of the aircraft and built a big huge ram air scoop that got more efficient the faster they went. The fuselage was a lifting body with WIG winglets and 4 thrust-vectored nozzles for lift and thrust. He sent a scale model to NG to test in their wind tunnel, and they were amazed when they discovered Q had designed a supersonic WIG that also was VSTOL-capable. It couldn't fly much higher than 150 feet in the air, but it wasn't designed as a true plane. Larry at Northrop-Grumman called Q and asked him how much he wanted to license the technology so they could build it. Q asked him "How much do you think it's worth?"

"I'm willing to offer $10 million up front, and 1% of our gross for 20 years, with the usual reciprocal licensing agreements."

"Make it 5%, and you have a deal, but we also want the right to buy as many as we want for our SuperCruiser fleet at your cost."

"Deal - I'll e-mail you the contracts, and when they are approved, I'll wire transfer $10 million to your account."

"Nice doing business with you Larry!"

6 months later, Northrop-Grumman delivered the first of the WIG/VSTOL/SST aircraft to WTI, and it just fit on the elevator going down to the hangar on the Anne Williams. Ron first used it to fly back to Allakaket for the birth of David's first son, Michael Williams. David had already legally adopted Levon, and since he was the only father Levon had ever known, he was never told he was adopted. Heather took the picture of her dead husband Gene down after they were married, and put it in her hope chest, in case Levon wanted to see a picture of his biological

father. Michael was a blonde-haired blue-eyed cherub, and she found out about 5 minutes after he was born, a chow-hound as well. 2 weeks later, Ron and Nancy flew back to join the SC near Thailand. Ron was amazed at how fast the "Whizzer" was. He asked the pilot when they got off, and he said they were cruising at Mach 1.5 for most of the trip. They only needed to slow down at the 12-mile limit, and they had to route the craft to avoid shipping lanes because their supersonic wake turbulence could cause a lot of damage to nearby ships, even the big cargo haulers. Ron was blown away when the craft slowed as it approached the Anne Williams, then lifted up higher, and set down on the deck of the SuperCruiser just like a helicopter. He called Q and told him that his invention worked perfectly. Q said "Of course it does - that's the way I designed it."

With that out of the way, Q started working on his other designs. His group of apprentices were working out even better than he had hoped, and he gave them all a 30% raise. One of the kids was a computer wizard, and could design any of Q's ideas on his latest version of Auto-Cad. Q was now going straight from the white board to the design board. His CNC machines directly interfaced with the computer, and could replicate anything Steve created in the computer. Q wished he had done this years ago. He was reading the webpage of the old war equipment site when he spotted the M -113, and remembered his idea for an APC powered by the Moller Rotary engine. He called Moller, and they said it would run just fine on diesel fuel, but at a lower horsepower rating. He asked if they could boost the turbo-boost to compensate, and they said they did it all the time, and would ship him a motor rated at 300hp running on Diesel fuel. He purchased another Allison semi-automatic 6-speed transmission and a PTO adapter since it was fully tracked. He bought a bunch of Israeli surplus rubber-padded tracks, and started assembling the APC. With the composite, it was light and maneuverable. The winch was rated at 25,000 pounds, which was way more than the APC weighed fully loaded. If he was going to use the full power of the winch to pull something else, he'd have to anchor the APC to something solid.

Q checked with Josh, and he told Q that they had more Ma Deuce machine guns than they'd ever need. That was all Q needed to hear, and added a ring mount and hatch to the front of the APC. With the pedestal removed, it looked just like a hatch, but with the pedestal and gun mounted, it gave the APC a 360-degree field of fire. He increased the thickness of the armor to stop anything a Bradley's armor could, and maybe a little more. With a 300-horsepower 150-pound engine and a 6-speed transmission, it had more torque than they knew what to do with, so some extra weight due to armor wouldn't hurt. He would have loved to put a turret and the new suppressed Bushmaster on it, but he couldn't get any of them. He asked Josh how many APC's the Militia could use, and Josh told him to make 50, it was only money after all. In that case, Q decided to add a TOW missile launcher to the APC as well. It used an improved hammerhead mount based on the M -901 ITV, which retracted into the APC and allowed someone to safely reload the twin-tube rocket launcher from the inside of the M -113. He added a large gun shield to the Ma Deuce in front of the gun carrier mount and the ammo box to give the gunner some protection. In order to fire the TOW, the Ma Deuce gunner had to drop back down into

his hatch and secure it, then aim and launch the TOW missile through his sight. The APC had a crew of 3, a driver, Commander/Gunner, and a Loader/Crew Chief. Q's APC turned out to be an almost direct copy of the Vietnam era M -901 ITV with several improvements. Since it didn't need to swim, they removed the extra stuff to make it an amphib. With the lighter weight, it was transportable via the Super Stallion or the CH-53. The back could be used for troop transport, ammo and TOW missiles, stretchers for casualty transport, or storage space if they needed to use it during the winter to transport supplies to snowed in townspeople.

Almost everyone in town bought Ralph's Snow bugs since they could seat 4, were much warmer than a snowmobile, and were perfect for getting around in the winter in Allakaket. Q built a couple using the 125hp Moller Rotary engine and his composite armor. He moved the radiator forward in front of the passenger compartment to use as a heater. Air was ducted through the radiator, and either at all 4 passenger's feet, or onto the windshield as a defroster, or both. When he showed it to Josh, he was amazed when he saw that Q had mated the Moller Rotary engine to a front-wheel drive transaxle, mounted mid-engine to drive the snowmobile tracks. It was much more compact than the VW motor setup, and lighter. Most of the more wealthy people bought Q's version of the Snow bug, since it had twice the horsepower to weight ratio, was armored to stop anything short of a .50BMG round, and wasn't much more expensive then their old Snow Bugs. His version also had a mounting spot for a M -60 belt-fed machine gun. The pedestal mount was stored with the M -60, so all they had to do was attach the mount, and mount the M -60 with a pintle connector, and they were good to go.

Ron was in the middle of a tour of Indonesia when he remembered something they did decades ago when the Saudi Kingdom threatened to cut off the West's oil, and called Jake.

"Jake, we need to upgrade our provisions. If the next CME is a TEOTWAWKI instead of a SHTF, we' re going to need at least 10 years worth of supplies to survive."

"Dad, what did you just say - Teo..."

"TEOTWAWKI, It stands for The End Of The World As We Know It. TSHTF means The Sh$t has Hit The Fan. They're both acronyms used by the Preparedness Nuts on Frugal Squirrels. The second acronym is used for an event that causes major damage or disruption on a local level, like the Hurricanes in Florida. If a large Meteor were to strike the USA, or if Yellowstone were to erupt, it would be the end of the world as we know it. If a CME-caused EMP pulse took out the power grid on the East Coast of the USA, that would be a TSHTF situation. A major hassle, but survivable and re-buildable. Now if a much larger CME were to knock out the power to the USA, or half the world, that could be anywhere from a TSHTF to a TEOTWAWKI scenario."

"OK, so their's stuff out there that could end life as we know it. What's that got to do with this conversation?"

"Ok, we need to stock up on everything we'd need to keep this community going for at least 10 years, and we need to get some alternate means of power. BA told me last week that Allakaket Power and Light was just about at max production. Get with the plant manager, and have them hire a good geologist and have him check around and see if there are any other Geothermal pockets they missed last time. Even if they're deeper, we've got the money to invest. Keep me posted on this one son. It's going to be expensive, but when we did it last time, the entire community survived a situation that could have left half the population starving and desperate. That reminds me, I've got to call the Governor. Thanks Jake, talk to you later."

Jake was holding on to the phone when his dad disconnected. He hated when his dad did that, but realized it was an old habit from being a very busy businessman. He called Tom and Gary, who were now running Allakaket Power and Light, told them they needed to upgrade their power generation capablity right now. They said they'd take care of it. Tom called the Geologist, while Gary called BA, who said they had installed 4 10MW Steam Turbogenerators for less than $500,000 each. He gave Gary the file, and he said he'd take care of it. Gary called the company, who said they weren't making 10MW units any more, but he could sell him 4 20MW generators for $500,000 each plus shipping to Allakaket. Gary asked him what the shipping would be to Fairbanks or Anchorage. They owned a Super Stallion that could carry it easily. He said that FOB Anchorage would be $600,000 each with a 10-year warranty, not including removal or installation. Gary e-mailed him a PO for the turbogenerators, pipe and control systems, since he had it all there, and offered a fair price. It would take several weeks to truck the components to Seattle, then ship it via cargo ship to Anchorage. He'd call when they were in Anchorage. Gary thanked him and they made a list of all the things they would have to do between now and then.

1) Clear the site for the Geothermal Plant
2) buy all the power distribution equipment to tie the 2nd plant into the local grid.
3) buy steel buildings to house the plant
4)Pour concrete foundation for plant
5) come up with creative use for excess power and heat.
6) get figures to Jake, and keep him in the loop.

Gary called Jake back, and went over his ideas. Jake suggested having Allakaket Power and Light purchase a 10-acre lot, clear all the trees, and use the waste heat for an aquiculture/greenhouse setup to grow their own fish and produce. It could be 10 times the size of the existing greenhouse/aquiculture setup, so Tom and Gary needed to check it out for ideas, and get moving on buying and building everything, since he didn't know how much time they had until the next CME hit and made it through the magnetic field. Jake called Mike, and told him to forget about any time off for the next 6 months, they had a potential crisis on their hands. He explained everything to Mike, who said his dad had already filled him in, and they were working on it. The two of them worked together even better than BA and Ron did, probably because they grew up together, and were closer in age. They quickly consolidated their separate

plans and ideas, and planned a "hurry up" project to purchase everything they needed, build the necessary storage, and keep things running. Meanwhile Ron was calling the Governor of Alaska.

"Governor Adkins, Ron Williams."

"Ron, long time no hear, what can I do for you."

"Actually Governor, I think I might be able to do something for the State of Alaska."

"Really what did you have in mind?"

"Do you know about the risk CME's pose as a source of EMP damage to infrastructure?"

"Funny, I just got a paper from my head science advisor about that same issue, but I don't think it's a threat."

"Governor, I'm not going to argue with you, but I think it is, and I'm willing to spend a large chunk of my personal money to make sure Allakaket will survive if it happens. I can't help the rest of the state, but I was hoping the state could divert some of the huge oil revenue into preparations to ensure that the citizens of Alaska could survive such an event. I'm going to have my son Jake e-mail you a package listing our preparations, and suggestions to help insure the survival of Alaska. One thing your scientist might have overlooked would be where a massive CME would overload the Earth's magnetic field, but not before the field diverted the bulk of the energy to the North and South Poles. In that event, the effects would be worse in Alaska than the rest of the United States."

"Holy Cow, that's just crazy enough to be true! Thanks for the heads-up, and I'll be waiting for Jake's e-mail. Thanks Ron, and take care."

Ron e-mailed Jake a request to forward any relevant information about their preparations for a CME-caused EMP event to the Governor's office. Jake smiled when he read the e-mail. His dad must have a lot of clout to be able to call the Governor up on the phone and chew the fat with him.

Jake called the manager of the General Store and told him to start purchasing enough supplies, groceries, and stuff to last the existing population of Allakaket 10-15 years. He amended that to NOT include perishables that would perish in less than a year, and that they'd build enough warehouse space to store all the stuff. Of course he asked why, and Jake gave him a brief run-down of what was going on, and what might happen. He remembered the Saudi problem, and told Jake he'd take care of it. Josh, Jake and Mike got together for their weekly lunch meeting, and discussed the plans to increase their preps. The town of Allakaket had grown from a sleepy

little town of around 1,000 people when Ron first moved to Allakaket 50 years ago to a medium-sized town of around 30,000 people. Tom and Gary had steadily improved the capabilities of the geothermal power plant until now when it was at maximum capacity. The 3 of them agreed the solution would be to overbuild so they would have enough capacity for up to 100,000 people, and to size the rest of the infrastructure accordingly. That meant building huge warehouses with above-ground and underground storage, adding refrigerated storage for essentials that had to be refrigerated or frozen. Jake made the point that unless they had it stored in Allakaket when the balloon when up, they really didn't have it. Josh told them that the Armory and underground shelter were already at capacity, and they really could use another much larger armory and shelter so they could split the storage between the two, so in case they lost 1 they wouldn't loose everything. Jake and Mike agreed, and authorized Josh to build an Armory 3 times the size of the existing armory, and to build a shelter underneath it capable of handling 100,000 people with enough food, water and air to last a year. Josh told them that could run anywhere from $20-50 Million dollars by itself. Jake told Josh the companies by themselves (Allakaket Airlines and WTI combined) were worth almost $100 Billion, and their combined personal assets almost half that.

Josh told Jake he had a better idea, and instead of sticking 100,000 people in 1 shelter, how about building 20 smaller shelters as needed to hold 5,000 people each. They could buy up a bunch of surplus 50-foot cargo containers for storage. Each container could hold 3200 cubic feet of supplies , and build smaller shelters for the people using Q's composite. They'd fix them up like their other shelters. The Armory would be built separately with above and below ground storage. Jake told Josh he was in charge of building the shelters and armory, since he and Mike were handling the food and power issues. Josh reminded Jake that they needed to order spares for everything including their airplanes and vehicles. Jake called the Chief Mechanic and told him to stock up on 10 years worth of parts and fluids for their planes, helicopters, SuperCruisers, Gooney Birds, and store anything vulnerable to EMP damage in a Faraday cage.

With that out of the way, Josh went to talk to Q. He saw Q's Snow Bug and remembered something. "Q, how much would you charge to convert our 6 Snow Foxes to your Moller Motor and your Kevlar composite armor?"

"Because it's for the militia, I'll just charge my cost, say $5,000 per copy, since I'm buying the Moller motors by the crate now. I can increase the armor protection up to 25 mm rounds without increasing the total weight."

"Go ahead Q. I'd like the heavier armor anyway. Some of the Ma Deuce gunners were complaining that they felt vulnerable way up there with only 3 flimsy pieces of Kevlar armor to protect them."

"If I install ½" of my composite armor which will stop anything less than a 25mm HE round, it would only add $2,000 to the cost per unit."

“Ok, Q, go ahead and install the ½" armor, and send me the bill.”

Q replaced the armor and the engines on the Snow Foxes in 2 weeks. When Josh came to check them out, he asked Q if he knew of anything they could use besides Concrete to build an underground shelter walls.

“I was reading about this new polymer they were working on. If you mix 1 55-gallon drum of the stuff with 50 gallons of Methyl Alcohol, and spray it, a chemical reaction expands it over 1,000 times, and it dries into a rigid crystalline structure that’s stronger than concrete, but cheaper and easier to transport and make.”

“Ok, how much would you need to build 3 200x50 foot walls, and a 200x200 floor?”

“That’s 2,000,000 cubic feet - why so big?”

“I wanted to build some more shelters around town to house 5,000 people each. I was going to make it a 4-story structure.”

“I was noticing the shelter here in town was a little small for the size of the town. That polymer would be perfect, it’s only 20% the weight of a similar piece of concrete, so you could use tilt-up construction for the walls. It’s a closed-cell reinforced polymer, so it’s waterproof as well. You could use conventional flooring techniques, or you could make the roof out of my composite which is impervious to moisture, and stronger than steel pound for pound.”

“Thanks Q, can you send me the info, we need to get going on it right now.”

Q made some phone calls, sent some e-mails, and got a reply that the manufacturer of the polymer was in final beta testing of the product prior to release. Q made them an interesting offer to build huge underground storage facilities in Allakaket Alaska as a final test of their product. If it succeeded, the PR and marketing value of the successful project could easily pay for the cost of producing all the chemicals. All Q needed was enough polymer to build 20 2 Million cubic foot underground storage facilities, the mixing and pumping equipment, and a couple of experts to train them how to use the products. They’d pay for the chemicals and mixers, but not more than 20% over cost, plus the consulting fees of the experts. The company CEO said he’d get back to him, but he was intrigued, and realized this would be a perfect test for large-scale projects, and Allakaket Airlines was now a very major company with major name recognition. If this project was successful, they could grab a huge chunk of the construction materials market based on AA’s recommendation.

He had a meeting that afternoon with marketing, production, engineering, and several VP’s in charge of other essential areas. The consensus was that they should take Q’s offer, and charge them cost, and enough money for the consultation contracts to cover expenses for the employees

involved. 2 days later, he met with the rest of the board, who gave their unanimous approval. He e-mailed Q and told him they would do it for cost, plus a consulting contract to cover the employee expenses to the company. Q forwarded everything to Josh, who showed it to Jake and Mike at their next meeting. The 3 of them approved, and the company started making enough chemical to build all the buildings Allakaket Airlines needed.

Josh sent the company an e-mail asking if their product could tolerate a 2" square steel mesh imbedded inside it. They wondered why they would go to the extra expense of purchasing that much steel mesh, but they checked with their engineers, who said as long as it was stainless steel, it would be fine. Josh CC'd the e-mail to Q, who suggested it would be easier and cheaper to line the walls with ½" copper mesh after the walls were up so they could ensure 100% coverage, because any gap over ½" could allow enough energy in to ruin the Faraday effect they were trying to get. Josh asked Q if they needed the Steel mesh, and he said "not if you're using the copper mesh to make a Faraday cage inside it. Josh cancelled the steel mesh when he realized how expensive it was. Q called the factory, and they said they had removable molds for the underground sections that were held in place by hydraulic jacks, and by connecting them together side by side, they could pour an entire wall in 10-foot pours. For above-ground use, they had 2-piece molds that would form 6-inch walls that could stop 30-caliber rifle fire, and they could construct a mold on site to pour any sized arch they wanted for the roofing sections that would bolt and epoxy to the wall sections. They developed a new epoxy for their polymer that fused the panels together permanently making them air and watertight. Q called Josh and gave him the good news, and Josh told him to get them up to Allakaket ASAP, they were already digging the basements as they spoke. Q called them back, and they said they would ship everything the next day, and it should be to Anchorage within a week. Q told them they had a Super Stallion available with a 35,000 pound lift capacity for sling loads, plus some storage inside the helicopter. That was good news to them, since their polymer mix came in 30,000 pound containers, plus the containers of Methyl alcohol. Q said they had plenty of wood chips, and asked how much Methyl alcohol they'd need. Q knew he could easily build a wood-alcohol still, and produce pure Methyl alcohol in a couple of weeks. They told Q how much they needed, and how much it cost to buy and ship, then Q called Josh and told him his idea. "Is there anything else we could use Methyl Alcohol for?"

"If it's pure, it makes a great fuel for several devices ranging from stoves to automotive uses. The deicing equipment uses a lot of Methyl Alcohol all by itself."

"And how much could you produce per month?"

"Between 5 and 10 thousand gallons per month."

"Ok, go ahead and get started. We've got a huge pile of wood chips, take all you want." Q came up with an ingenious idea to use some of the waste heat from the Geothermal plant to heat the mash, since you didn't want to boil the mash, or you'd wind up cooking off the water, and

get left with wood pulp. To Q this was simple high-school chemistry, so he assigned several of his apprentices to the project. They located everything they needed, received permission to tap 180 degree water from the output of the new geothermal plant, then pipe it into the greenhouse/ Tilapia ponds once it had cooled. They built the plant next to the brand-new geothermal plant over by Josh and Jake's houses, erected the huge still, and connected it to the geothermal output. They filled the huge tank with a mixture of water and sawdust, and sealed it. The geothermal heat kept it at a constant temperature, and within a week, they produced their first batch of pure Methyl Alcohol. Knowing that alcohol production stunk, they located everything downwind of the houses, and erected a tall chimney to keep the stink away from the town. The engineer was impressed when Q delivered his first batch of Methyl Alcohol right when they needed it. Q told him that they could produce right around 1,000 gallons per week as long as they had wood chips to process. They had a stockpile big enough to last several years, so that shouldn't be a problem.

With Q providing all the alcohol they needed, plus the composite flooring, they were able to quickly build the first 5 shelters, the armory, and several hangars, and make them very EMP resistant. They left the equipment, 30,000 pounds of polymer mix and the forms there so they could build more. Josh and Jake wrote a glowing report of the construction project and the new polymer product, and soon the demand for their polymer exceeded even the most optimistic of Marketing's projections.

While all this was happening, Chelsea Clinton-Kennedy had gone from Senator Clinton-Kennedy to President-elect Clinton-Kennedy. She had done such a good job hiding her true feelings and agenda that she was elected by over 60% of the registered voters. Some conservative pundits claimed voter fraud when they showed that there were more votes then there were registered voters in some areas for Chelsea Clinton-Kennedy and Theodore Kennedy-Clinton (her husband was a distant relation to Sen. Ted Kennedy of Massachusetts, and was also her running mate for Vice President of the United States.)

Chapter 6 - The Witch is Back

Chelsea Clinton-Kennedy assumed the office of President in late January, and by the end of February, she was ready to bring Alaska to heel. She decided to kill two birds with one stone by attacking Allakaket, seizing the gold mine, the airport, logging operations, and all their assets. She thought that Ron Williams was secretly funding the Northern Rebellion, as she called it, and seizing the town and its assets would stop the rebellion. She contacted individuals inside the Radical elements of the Environmental Movement that she had maintained contact with, waiting just for this day. Next she contacted a group she had secretly built within various federal law enforcement agencies made up totally of rogue agents who were loyal only to her, and had access to brand-new military gear. They were supposedly disbanded during the previous administration, but Sen. Chelsea Clinton-Kennedy managed to slip funding for the super-secret group into an omnibus funding bill as a line item for an unrelated federal agency. These agents were equipped for 21st century warfare, and resembled Imperial Storm Troopers in their rigid body armor, helmets with sighting and night vision visors, their digital communications systems, and their brand-new high-tech personal weapons systems that used an electromagnetic rail gun technology to propel a lightweight aluminum round to velocities capable of penetrating even light armor. She ironically chose President's Day as D-day for the assault on Allakaket.

Allakaket's preparations for any CME related EMP were in high gear, and most of them had been completed, or were being rushed to completion. All of their defensive weapons systems had been EMP hardened to 3 times Mil-spec. Some things like radar antennas were impossible to fully harden, so they installed resettable breakers that would disconnect the antenna from the receiver within less than a millisecond of a voltage spike, and they had several spare receivers in storage. Their Early Warning System had been fully tested, and was monitored 24/7. Jake and Josh hoped it would be enough warning for all their assets to get under EMP-resistant cover. The Gooney Birds and SuperCruisers were outfitted with a 4th computer system stored in a Faraday cage in the center of the ship and not connected to anything. They also fitted their aircraft with backup magnetic compasses and other navigation equipment that hadn't been used for over 30 years in case they lost the use of their satellite and land-based navigation systems. Josh had come up with a novel idea for a couple of radio beacons with a motorized telescopic mast that would be sheltered underground until needed after a massive CME that would transmit a locator signal that their Gooney Birds and SuperCruisers could triangulate and follow home from anywhere in the world.

As January rolled into February, Josh was hearing rumblings through the grapevine that Chelsea had authorized an illegal attack somewhere in the US on President's day. He didn't know if they were the target, but he started taking steps, including contacting Lt. Gen. Kelly Stone USAF (ret.) who just retired as JSOC, and talking with him over coffee. Kelly's eyes got big

when Josh laid his suspicions out. They couldn't take any action until Chelsea attacked in case they weren't the target, but Gen. Stone could call the new JSOC with his suspicions and ask him to move a SEAL team to Elmendorf on the QT for a winter warfare training mission. The SEALS had purchased a dozen Snow Foxes from Allakaket Airlines with armor capable of stopping a 25mm round, and a 200hp turbocharged Moller Rotary Engine. During the summer, it rode on 4 run-flat military all-terrain tires, and during the winter, it reverted to the Snow Fox configuration. It had a top speed of 100mph on tires, carried a crew of 3 including a Ma Deuce gunner in the crow's nest over the gas tank, an M -60 gunner, and the driver. With the more powerful and lighter motor, they could traverse terrain that would stop the old FAV cold. The entire 24-man team showed up in Elmendorf with 8 Snow Foxes, and a C-130 equipped to either LAPES or air-drop the new FAVs from altitude along with the SEAL team.

On Monday, February 23rd 2037, the Early Warning System klaxon went off, waking everyone at 0800, and they quickly checked in. A huge X-49 solar flare was detected, and SOHO showed a CME headed for Earth that would strike around 1900 local, and was large enough to cause serious damage. The airport manager ordered all flights grounded and in their EMP-resistant shelters by 1800 local. Jake called Governor Adkins advising him to take precautions, and to have all essential vehicles and aircraft inside EMP shelters by 1800. Governor Adkins said he'd do what he could, but he couldn't order private businesses to comply, and as soon as Jake hung up, he called the Director of Transportation, and ordered him to start their EMP Sheltering protocol. By 1800, the bulk of State of Alaska-owned property that was EMP sensitive was either in shelters, or unplugged and disconnected from their antennas. Critical components were in specially built Faraday cages located all over the state.

Later that evening, the military radar detected a large slow-moving target inbound from Canadian airspace on a direct path to Allakaket. The radar operator knew he didn't have any scheduled flights from that direction, so he interrogated the aircraft.

"Unidentified aircraft approaching Allakaket Control from Canadian Airspace. You are approaching an Air Traffic Control area, please turn on your transponder."

2 minutes later, the operator noticed the aircraft was squawking codes indicating an Air Canada Flight.

"Air Canada flight 283, we don't show an approved flight plan filed for you. Please state your intentions."

"Air Canada 283 on a medical Emergency Flight."

"Like I said Air Canada, why didn't you file a flight plan?"

"No time, we are flying patients from the Northwestern Territories to Fairbanks for emergency

Surgery."

"Understood, why are you heading to Allakaket?"

"We've insufficient fuel to reach Fairbanks."

"Roger, we'll keep an eye on you. If you need to declare an emergency, let us know, Allakaket out."

The Military controller was suspicious, and called Josh, who told him to call Fairbanks and confirm that they were expecting a medical flight. By the time he was able to get hold of anyone at the Fairbanks tower, the unidentified aircraft was much closer to Allakaket. They never heard of the medical flight, and the controller thanked them, then called the unidentified Aircraft.

"Unidentified Aircraft, Fairbanks never heard of you."

"That's because we didn't file a flight plan, what kind of idiots do you guys have running the show in Allakaket?"

The operator ignored the reply, then right as he was about to demand they divert, he saw the image dirty up, and the aircraft descending rapidly. He was about to declare an in-flight emergency when the altitude stabilized at 5,000 feet, heading away from Allakaket. When he couldn't raise them on the radio, he called Josh, who decided to call an alert just in case. By the time they got into their gear and manned their equipment, the tower was reporting seeing dozens of square chutes. Josh knew that only the military or sporting jumpers used square chutes, so he knew trouble had just arrived in Allakaket. He upgraded the Alert to Condition red, ordered all non-combatants to their shelters, and called Lt. Gen. Kelly Stone. General Stone called the CO of the SEAL team, and fortuitously they were already in the air less than half an hour out of Allakaket. General Stone made a snap decision, and told Commander Taylor to land his forces on the Southern half of the lake, since the attackers were landing on the Northern half, and they'd have the attackers in a pincer.

The attackers first of all demanded the surrender of Ron, Jake, and Josh Williams for Crimes against the state, then hearing no reply besides "Nuts" they drove their electrically powered assault vehicles toward town. Their first shot from their 25mm Electro-Magnetic rail gun destroyed an M -113 and it's crew. Josh ordered all the heavy weapons back inside the treeline, and waited to see what the attackers would do next. He got his answer by a volley of rail gun fire. Several more vehicles were damaged, and several more crew members were hurt or killed. Josh prayed for a miracle, since they couldn't stand against the enemy's superior weapons. Looking through the scope of his personal M -200, the attackers looked like Imperial Storm Troopers. Josh decided to even the score, and started targeting the vehicle commanders who

were arrogantly standing up in their command hatches, directing traffic. He started with the one with the most antennas, and put a round right through the chest of the vehicle commander. He fell over dead, and the vehicle stopped. The rest of the vehicles randomly strafed the wood line, since they couldn't see the shooter, and didn't realize that Josh and Jake were both capable of making head shots at 1,000 yards with their new M -200 rifles, or body shots out to 1500 yards.

Jake and Sarah got into the act as well, and soon they killed several vehicle commanders. The vehicles retreated out of range, thinking that they could engage from further away with their rail guns if any targets showed themselves. The snipers were well hidden, so they weren't spotted, but a couple more M-113's took rounds, disabling some, and destroying others. Josh saw some parachutes blooming above the lake and silently cheered "Go get them SEALS!" Josh heard the engines of several of his M-113's go silent, and he looked at his watch - 1900 on the dot! He scanned the attackers, and noticed that all their vehicles had stopped too, and their turrets stopped traversing. Seeing that, he took his radio out of his backpack, removed the plastic cover, and took it out of the copper mesh case, turned it on, and was in contact with the rest of his team. They were using primitive 2-meter handy-talkies, but they worked!

He switched frequencies, and Commander Taylor, the SEAL team commander, was on the air too. General Stone must have gotten the message to them in time. The two commanders coordinated their attacks with their vehicles that could move, and supported them with infantry. They started shooting the invaders, and the 2 Robo-gun equipped Bradleys were destroying the enemy vehicles with 1 shot. The last 2 enemy vehicles were surrounded and Josh was just about to order the Bradleys to fire again when a white flag popped out of the turret of one tank, and then they opened their rear hatches with their hands in the air. One of the men was wearing a blue beret, and Josh recognized him as a retired French Army General, who was one of the more radical members of Greenpeace. Josh was confused because he was in his 60's, yet he was wearing his uniform, and obviously in command. He strode up to Josh and said "Josh Williams, you're under arrest for violations of the Kyoto Accord!"

"You Imbecile, we never signed the Kyoto Accord!"

"President Chelsea Clinton-Kennedy did!"

"Congress didn't ratify it - that's all that matters!"

"Either way you're under arrest!"

"Jacques, your first mistake was invading the US, and your second mistake was attacking my home. You know what your 3rd mistake was?"

"No Monsieur, I do not."

"Killing my people."

Josh raised his Para Ord and shot Jacques through the forehead, blowing blood and brain matter all over his 2nd in command, who immediately peed and soiled his pants.

Josh pointed his pistol at his head and said "Do you have anything to say before you die?"

"This was all Chelsea's idea - she said that we'd be able to take you out easily, seize your gold, and everything, and return the country to the way it should be."

"How bad do you want to live?"

"I've got orders in my briefcase with her signature. I'll trade them for my life!"

Josh motioned for his second in command to take the briefcase. Just glancing at the documents, there was enough evidence in that briefcase to impeach President Chelsea Clinton-Kennedy and try her for Treason if they could find an impartial jury. Unfortunately the current Congress was so Liberal they would have problems impeaching Joseph Stalin. They'd probably say he was just misunderstood, and really just needed a hug!

Josh had them take Jeremy, Jacques 2nd in command, away in cuffs. Josh, Jake, General Stone, and Commander Taylor met at Jake's house over coffee to discuss what to do next. Unfortunately the EMP effects had taken out communications all over Alaska, and the Internet, so they were in the dark. Commander Taylor suggested returning Jeremy to Chelsea with a note and Jacques' blood-soaked beret saying "If you don't stop messing with Alaska, you're next!" Josh and General Stone both agreed to return Jeremy to DC as soon as transport could be arranged. Meanwhile he was hosed off and given clean prisoner garb, and kept in a cell in the Sheriff's department.

Later that day, they decided to take one of their small jets, because Juneau was only about 600 nautical miles away. They could be there in a little over an hour. Josh and Jake discussed things, and they decide that Jake should go by himself, since Josh was responsible for the defense of Allakaket, and this might just be round 1. Jake drove to the airport, climbed aboard their Lear jet, and landed in Juneau 2 hours later. Jake realized just how much pull his dad had when he showed his ID to the Airport police officer, and he drove Jake to the Emergency Management center. Jake told the Governor about the attack on Allakaket, and the Governor just shook his head. He had more problems to deal with than someone trying to attack Allakaket. Jake got his attention when he offered the services of Allakaket Airlines for the duration of the emergency. All but 2 of their aircraft were in EMP shelters when the pulse hit, and they were 100% capable of flying. They also had a heavy lift Chinook, a Super Stallion and 20 Sikorsky S-76 VIP choppers available. The Governor was taking notes like crazy. He was amazed to find out that Allakaket's power was back on, and asked Jake how they did it.

“Very expensive disconnects. They protected the powerplants and transformers. We lost several distribution transformers, but we had several hundred in EMP-proof deep underground storage, along with critical spares for everything we would need if a really big CME hit. You know Governor, that this one was just a tiny one compared to what could happen. It was an X-49 flare, and it’s possible to get them as big as X-100 according to some astrophysicists. Of course if we got an X-100, it would be TEOTWAWKI?”

“Huh?”

“TEOTWAWKI, an acronym for The End Of The World As We Know It.”

“OK, my science adviser uses words like that. Is there any way we can communicate?”

“Not until we get some working long-distance radios. The satellites are damaged, and the ionosphere is still recovering from the hit. I could launch one of our tethered weather balloons with a high -powered repeater so we can talk on radio. Actually, I’d recommend using high-speed data transmission over the radio, so we could let the computers talk to each other at much higher speeds. I’ll set it up, then I’ll fly a unit over here for the State Government to use.”

“Could you set 1 up for Anchorage and Fairbanks as well?”

“I’m pretty sure we’ve got a weather balloon big enough to haul a huge radio, generator, and antennas aloft so all the state government and Law Enforcement can talk to each other. I can’t do anything about local communications, so hopefully they have spares.”

“Thanks Jake, I don’t know what the state would do without you.”

“Just wait until you get the bill! Just kidding, gotta fly!”

The Airport police officer drove Jake back to the Lear, and they took off for Allakaket. When he landed, Jake found Q and said he needed something right now. Q wasn’t an electronics whiz, but one of the apprentices was, and Q knew enough radio theory to make it work. What they ended up with was a huge weather balloon that carried a 500-watt repeater to a height of over 10,000 feet above ground level. Q had them coat the balloon with the quantum dot paint and install a lightweight rechargeable Lithium-Ion battery bank big enough to power the repeater overnight. Without having to haul the generator and fuel, the balloon could be much smaller. They mounted anti-collision strobes on the balloon, gondola, and every so often on the tethering cable. The 50-watt base stations had huge 12dB Yagi antennas with an Effective Radiating Power of 800 watts at maximum power pointed right at the repeater, and mounted 50 feet off the ground for EMF safety.

Jake flew the matching base station to Juneau, showed the Governor’s communications

specialist how to work the system using the laptop computer, and once they got the Yagi pointed at the high-altitude repeater, they heard the reply from the repeater, and knew they were in business. Jake flew the other units to Anchorage, Fairbanks, Seward, and the other major Alaskan cities, and soon the entire state was in communication again. With the laptops processing the information, they quickly set up a packet system to send data all over the state. Each city took care of their local radio needs, and transmitted critical information over the state net. Jake stationed SuperGoose aircraft at all municipal airports for emergency transportation. Within a week or two, Allakaket Airlines was back in business. Slowly but surely Alaska and Hawaii got their communications and other EMP related problems fixed. Chelsea Clinton-Kennedy thought we were lucky that only Alaska and Hawaii were damaged by the EMP. The NASA scientists assured her that this CME was a fluke, and would never happen again, so within a month, everyone had forgotten about it.

The rest of the Pacific outside of the United States didn't fare too well. The CME-induced EMP destroyed electrical infrastructure in Eastern Siberia, most of Japan, almost all of Southeast Asia, the Philippines, Australia, and New Zealand. A massive relief effort was undertaken, pushing President Clinton-Kennedy's obsession with Alaska into the background. She quietly let Alaska secede from the US, because she had a secret agreement in her pocket to sell oil to the US for rock-bottom prices. With the EPA off their backs, they were able to more efficiently exploit the oil and timber assets, yet they caused less damage doing it their way than the way the EPA made them harvest timber. Selective Harvesting was practiced not because the EPA was forcing them to, but because it made marketing sense. The oil companies were careful setting up their oil rigs and pipelines to minimize real environmental damage, not perceived damage that the EPA was so worried about. Major oil spills were bad for business, since they cost money to clean up. If a few spotted owls were harmed, they should have moved. Years ago, the oil companies had finally built a refinery at the terminus of the Alaskan Oil Pipeline because it made business sense to make some fuels there instead of shipping the crude oil to the CONUS and shipping refined products back. Fuel prices in Alaska edged downward, and Allakaket Airlines expanded their Fuel Storage Depot as a result. Their storage capacity quickly exceeded their former distributor's capacity. Jake got a call out of the blue from Governor Adkins.

"Jake, I've heard you were increasing your storage capacity. If you're interested in buying a Refinery, Petro Star is in Bankruptcy. Thanks to the EPA, they couldn't afford to stay in business."

"So why would we want it?"

"Alaska is about to declare our Sovereignty, and the EPA would have no jurisdiction. If you were to put an offer in, you could buy the company cheap, including their oil and fuel contracts. Their Valdez refinery used to produce 50,000 barrels per day. I'd prefer an Alaskan-owned company to own it, so all the money stayed in Alaska."

“Isn’t this Insider Trading?”

“No the bankruptcy is public knowledge, and our Sovereignty declaration has been in the works for a while, so the information is out there. I’m just grateful that Allakaket Airlines not only tipped us off to the potential disaster, but gave us a no-shit warning in time to protect our assets. Just consider this a “Thank-You” from a grateful state government. Besides if you owned it, it would be better for the state anyway.”

Jake disconnected, called his Corporate Attorneys, and got them working on the purchase. He called Josh, who suggested they look for a location near Valdez that might have geothermal power since if they were dependent on the grid, when the power went down, the refinery would stop production, and they’d run out of fuel. Jake called Tom and Gary, and asked them to send a Geological survey team to Valdez and see if they could locate a geothermal source on the QT. 2 weeks later, Gary called Jake. “I’ve got good news, and I’ve got really good news.”

“Don’t keep me waiting.”

“The geologist team found a huge geothermal pocket, it’s west of the pipeline terminal, and the land is owned by the State of Alaska. The lot is 1 square mile, and has access to the ocean if we wanted a deep-water pier to load fuel for shipment. The pocket is several times bigger than the Allakaket Pocket, and could probably power 100MW worth of generating capacity for the next several hundred years.”

“Great, can you e-mail me the details, and I’ll get Legal working on it.”

Jake called the corporate Legal dept, and they said that the Bankruptcy judge had given provisional approval to Allakaket Airlines to purchase Petro Star, Inc. for the amount of the Bankruptcy, or $5 Million, including all their assets. Jake gave them the other news, and told them to secure the entire property including all rights, and step on it. Jake hung up and thought to himself, “I love it when a plan comes together!”

He called Gary back and told him to plan on building a 100MW geothermal plant on the site in Valdez, with the bulk of the power going to Petro Star, and the excess for sale on the open market. He got a call back 1 week later from Legal, and they said it was a done deal. They had the company, the property, and all rights. Jake told them to e-mail everything to his attention, and called Gary, who told him he located 5 20MW steam turbogenerators. Jake asked if they could use the residual heat to warm the crude oil prior to distilling it. Gary admitted knowing next to nothing about oil refining, but suggested he call the Refinery Plant Manager once everything was good to go. Jake had a few surprises for him. He wanted to rebuild the refinery in a different location, with new equipment, double the capacity, and he wanted to take advantage of the geothermal heat to pre-heat the crude oil and heat the building.

He also wanted them to build the new building out of Q's new concrete replacement. Since they had built so many buildings with the foam concrete replacement, Ron had suggested they form a Construction company to build buildings in Alaska using the new technology. Jake called the owner of the polymer company, and they were more than willing to sell them as much polymer mix as they wanted for very preferential pricing. Jake hired someone to run the construction company who reported to him, and told him to go get some contracts. He didn't need to be told twice. Jake gave Wade a call, and told him they wanted Allakaket Construction, Inc. to build their new refinery in Valdez. Wade said he had no experience building refineries. Jake explained to him that they were just acting as the General Contractor, and they needed to hire subcontractors with expertise in building refineries. Wade apologized, he didn't have much experience working as a General Contractor. He had usually been a subcontractor. Jake told him to consider this OJT, but he needed to get up to speed ASAP, or he might have to replace him. Jake wasn't being mean, he was stating a fact.

Ron had flown home shortly after the CME incident, and was proud of his sons, they had done an excellent job handling the crisis. He knew the company and the town was in good hands. He made some suggestions to further protect the town and the company in case this wasn't the last or biggest CME the world would see. Over the next 18 months, they stockpiled everything they would need for a 15-year period that would store that long. The greenhouse/Tilapia pond was a huge success, and Q's Methyl Alcohol production was so great that Allakaket was a net exporter of Methyl Alcohol. Several businesses in Alaska that needed Methyl Alcohol for production processes bought it from Allakaket since it was cheaper. Q also decided to store 10% of their production for use a automotive and cooking fuel. With the cheap fuel, the General store had a run on alcohol powered camping stoves, since they were one of the few stoves that could operate at below-zero temperatures.

Jake got the oil refinery built and running in record time, thanks to some skid-greasing by Governor Adkins at the various state agencies that normally regulated refineries, fuel depots and the like to death. Once they had the geothermal power plant on line, they received a $10 Million check from the DOE as an Alternative Energy credit (10% of the cost of building the plant) because they were a public utility. They connected to the grid, and were supplying just enough power to qualify for the credit. 2 days after the check cleared, Alaska seceded from the Union, and told the IRS, et. al. that no Alaskan Citizen would be paying any taxes to the Federal Government again. Jake was laughing his head off, the timing couldn't have been better. Not that they needed the $10 Million, but it was a nice parting gift from Uncle Sam. Once they had the power plant on line, they quickly built the refinery, and got it on line within 18 months, and received permission from the new Country of Alaska to run a pipeline from Valdez to Allakaket, Anchorage, and Fairbanks carrying diesel, JP-5, Avgas, kerosene, and regular unleaded gasoline.

All the fuels were sent through the same pipeline, at staggered intervals, with switching valves

at both ends to divert the correct product to the correct storage tank. Petro Star, Inc. was soon producing 100K barrels of various fuels per day, doubling the original output of the refinery. They installed a deep-water terminal so that tankers and supertankers could take on fuel for delivery in the deeper water off the coast where it was safer. They also had a rarely used capability to off-load crude oil for the refinery in case the pipeline was damaged, and they could get crude from somewhere else. Petro Star copied existing deep water terminal technology, but added twice as many fail-safes to prevent an accidental spill. Even if the terminal were accidently rammed, cut-off valves would immediately stop the flow. Because the pipeline carried the bulk of the production for use in Alaska, the Terminal was only used for sales to the United States, since Governor Adkins had signed a sweetheart pricing deal for Alaskan Oil and refined products. Jake knew that they had purchase contracts for 100% of their production, so they didn't have to worry about the refinery making money, so he turned the entire operation over to the plant manager. He only called Jake for emergencies, otherwise he dealt with the Corporate legal department if he had questions.

Jeremy didn't fare too well when he finally reached President Chelsea Clinton-Kennedy and delivered the message and the blood and brain-splattered beret. She flew into a towering rage and shot him with her personal pistol, a Walther PPK that used to belong to her mom. She emptied the 6-rd magazine into him, yet it still took a while for him to die. Finally when he did die, she spat on his body, then ran screaming hysterically into her bedroom yelling something about Ron Williams was going to kill her. Lucky for Teddy, he was out "campaigning" at a Massachusetts Gay Pride parade. Teddy was kind of half-in and half-out of the closet. For years, their sycophants had known about their deviant lifestyles, and yet the press never mentioned it once. They were a perfect Left-Wing Liberal Couple, He was Gay, and she was a Lesbian. What brought them together was their Left-wing ideology. Their well-hidden beliefs would have done Marx and Chairman Mao proud.

Chapter 7 - State of the State

After Alaska recovered from the CME damage, Governor Adkins addressed the new nation

“Ladies and Gentlemen:

For the first time since the 1800's, Alaska is again free. While we are free to travel back and forth to the United States, we are no longer part of the United States. We have reclaimed our Sovereignty, and shed the Albatross of Federal Bureaucracy. We will still take reasonable precautions to prevent Environmental damage to this beautiful state, but our priorities have changed. No more will the lives of insignificant insects be as important as the livelihood, health and welfare of Alaskans. The Department of Natural Resources will be responsible for enforcing state law, as it was before the separation. We have no intention of divorcing ourselves from the Mainland, but we have a separate culture and history. Alaskans are a very independent people, and we were not happy with the way the US was going, and had no voice in the Legislature to change the course set by others, so we chose to separate ourselves from the US, at least for now. Over the coming weeks and months there will be updates and other statements as we get things straightened out. Our form of government won’t change, it’s just we won’t have to answer to a Central Federal Government. Alaskans have pitched in together to recover from this latest natural disaster, including several major businesses who we owe a debt of gratitude. We need to continue to plan so the state can face any future natural disaster and quickly rebuild. Our Department of Public Safety will resume their Civil Defense duties taken over by FEMA. Please be expecting future communications from the Department of Public Safety on Natural Disaster planning, and assist them as much as possible. By the way, all Anti-gun federal laws are null and void. That doesn’t mean you can go out and buy a full-auto machine gun just yet, but at the same time, the local Sheriffs will be instructed to issue CCWs to qualified citizens, and you can have any semiauto rifle you wish on your property, or carried in your vehicle. The Legislature will shortly be debating revisions to our firearms laws with the intent of liberalizing them to at least match the laws of Nevada, which is a Shall-Issue State with Class III and NFA weapons available by permit.

Thank you, Good Night, and God Bless Alaska.”

Jake turned off the TV. He was impressed with what Governor Adkins said. None of the weapons laws applied to Allakaket, since they still retained their US Military exemptions from State law, but he was glad to see the average Alaskan citizen would soon be regaining their full 2nd Amendment rights. He was reviewing the report from the Plant Manager, and the refinery was producing 100,000 barrels per day of various fuels, including LNG, fuel oil, diesel, kerosene, Jet fuels including JP-5, gasoline including unleaded regular and Avgas, and other fuels. Most of it was for consumption in Alaska by Allakaket Airlines and it’s subsidiaries, but they produced enough excess to keep prices down in Anchorage and Fairbanks. Their

geothermal power plant was paying for itself by supplying outside power, and powering the refinery. Using the waste heat from the geothermal process reduced the power consumption of the refinery by 50%, which made it even cheaper for them to refine crude oil into fuels. They had gradually reduced fuel prices, but even with the reduced prices, the plants would be paid off within 10 years they were making so much money. Allakaket Airlines had completed their preparations for a future massive CME-induced EMP, and Alaska itself was taking heed. Alaskans had always been into preparedness, because a snowstorm could isolate them for weeks at a time. Between the Governor's Office and Public Safety, the word was getting out in a low-key manner that they needed to improve their preparedness levels to survive on their own for up to a year without outside supplies or services. Communities banded together, and made bulk purchases of critical supplies, then stored them in the basement of their city hall or other secure sites. The DPS recommendation to stock non-hybrid seeds caused a run on the heirloom seed producers, who were grateful for the business, and started building a group of seeds that would grow in Alaska. Materials for building greenhouses were stockpiled, as were critical medicines, paper products, tools, fuel, and parts. Canned goods were at a premium, but there was no panic so the prices didn't skyrocket like the Governor had feared. By the end of the year, Alaska and Alaskans were as prepared as they could get.

President Chelsea Clinton-Kennedy's attention was diverted from Alaska when she faced domestic disturbances in the US caused by rising food and fuel prices, and a plummeting stock market, led by T-bill futures, which were so far in the toilet that they couldn't reach the handle. The economy was coming apart at the seams, and Chelsea was talking about National Healthcare, ignoring the fact that the government couldn't afford to pay Social Security or Medicare, and had raised the minimum age to collect Social Security the 3rd time in 3 years. The minimum age now stood at 69, and would soon go to 72 if the current Legislature had their way. The national debt was so high that they ran out of zeros. Almost 100% of the federal Budget went to interest payments on the debt, and Chelsea was tempted to monetize the debt by turning on the printing presses and printing more money. David Rockefeller IV, the great-grandson of David Rockefeller I, who was Chelsea's Chairman of the Federal Reserve, was yelling and screaming for Chelsea NOT to do that, because the world banks would dump dollars in a heartbeat, soon followed by a foreclosure on the National Debt. Unknown to David Rockefeller IV, this was Exactly what she wanted. She secretly despised everything the US stood for, and she wanted to bring a much smaller and weaker US into the One-World Government . Wrecking the US economy was the easiest way to do that.

18 months ago, Chelsea had hit the ceiling screaming at the head of NASA and her Science Advisor. Her plan to take over Allakaket was fool-proof, except right when they attacked a CME-induced EMP took out their weapons, rendering them impotent. Her Science Advisor and the head of NASA both swore to her that the CME penetration was a million-to-one fluke, and hadn't happened before, and should never happen again. While Alaska and Hawaii were rebuilding, Chelsea's Spin Doctors were pulling the media by their noses, leading them in the direction they wanted them to go. Numerous "Experts" declared that the CME was a fluke, and

would never happen again. China and most of the other affected nations imposed a news black-out over the whole incident until they were sure that someone didn't pop a nuke. Their monitoring satellites never showed a launch signature, and once they realized how large an area was affected, then knew the source wasn't terrestrial. By then, it wasn't newsworthy anyway, and what little help that arrived was slow in coming.

The entire Eastern shore of China was affected, causing hundreds of thousands of casualties. By 2037, Chinese Civilian appliance technology was at the same level of technology as the US was in 1970. The Chinese infrastructure was destroyed, and most of their Army and Navy was impotent since the planes couldn't fly, and the tanks couldn't run. Even their transportation system was destroyed, leading to mass starvation and mass migrations to where people thought there was food. Japan was severely damaged, as was Hong Kong, the Philippines, and the rest of Southeast Asia. 18 months later, the Pacific nations were finally starting to get back on their feet. The rest of the world had forgotten about the risk of CME's except Alaska thanks to Ron Williams and Allakaket Airlines leading the way.

Ron Williams still spent several hours each morning tracking the economy, and reading commentaries by conservative economists who were advising people to get out of the Stock Market, and into hard assets like gold, silver, and land. Ron e-mailed Jake and Josh the article, with a note basically telling them to covert all of Allakaket Airline's cash, deposits, and liquid assets not needed for operating expenses into Gold and Silver, and store the metal in a bunker in Allakaket. Jake and Josh could read the tea leaves too, and agreed with their dad, and contacted their Legal department, and told them to do just that. Jake called Neil up, and told him not to ship any more gold, Allakaket Airlines was going to buy all their production for the foreseeable future. Neil said they were about to ship 30 Thousand ounces of gold bullion to the Alaskan Central Bank. At 800 dollars an ounce, that would amount to a 24 Million dollar deposit. Jake said he'd buy the gold, and they'd store it in Allakaket. Jake knew of a spare underground storage facility they could use to store gold until the US economy stabilized. Jake called the Governor and highly suggested that Alaska move to it's own currency based on the gold standard as soon as possible. "Jake, you must have read the same report I read, the US economy and banking system is in the tank, and FRN's will soon be valueless. Thanks to your gold mine, we have more than enough gold on hand to fully back any currency we print in gold."

"That's another reason I called. We're suspending shipments of gold until the Alaskan government goes off the Federal Reserve Note and comes up with an Alaskan Dollar that is fully supported by gold deposits. We were scheduled to make a $24 million gold deposit, instead Allakaket Airlines is holding the deposit here in Allakaket until the situation resolves itself."

"Ok, Jake, I'll get the Legislature working on it right now. We need those deposits, so I'll tell them to rush it."

2 weeks later, Legal called Jake to tell him that Allakaket Airlines and it's subsidiaries were as fully divested of FRN's and other instruments based on US dollars as they could be, and still pay their bills. Jake asked them what their exposure was.

"We only have $10 million per month in payments we have to make to outside vendors, so we kept $30 million in FRN's available."

"Start asking our vendors if they will accept payment in gold or silver if we can, and see if we can reduce that number further."

"Sir, $30 million in Gold weighs over 3 thousand pounds. Moving that kind of weight is expensive."

"Not if we use a Gooney Bird."

"Sir, they can't fly inland. Some of our vendors payment offices are in the mid west."

"Very well, just do what you can."

"Yes Sir!"

2 days later Governor Adkins called up. "Jake, the Legislature voted unanimously to dump FRNs, and print our own money, the Alaskan Dollar, fully backed by gold and silver deposits. Once they get printed, we'll give Alaskans 30 days to trade their FRN's in at an exchange rate to be determined later. We'll send the FRN's to DC and demand payment in gold."

"That ought to make Chelsea change her underwear!"

Governor Adkins laughed so hard that Jake was worried he'd become hypoxic.

Two weeks later, David Rockefeller IV had to change his underwear when he received notice that Alaska was returning $500 Million in used FRN's and demanding payment in gold. He called Chelsea, who screamed like a banshee, dropped the phone, and ran screaming something incoherent that David thought sounded like "I'll Kill them all!"

David met with the rest of the Federal Reserve board, who were faced with a tough decision. Either they paid Alaska in gold for their FRN's, or Alaska would force them into bankruptcy. One board member offered to placate them with a gold certificate, and David said that wouldn't work, the demand letter specified 24 carat gold ingots at $800 worth of FRN's per ounce of gold. Several members threw a fit, but they finally settled down and realized if they didn't pay, the economy would finish crashing around them, and their investments were tied to the dollar. Their personal fortunes were at stake, so they decided to screw the government, and withdraw

$500 million worth of gold from San Francisco and deliver it to Juneau Alaska.

Once the Alaskan Dollar was printed and fully covered by deposits, Jake authorized the transfer of $24 Million worth of gold to the Alaskan State bank in exchange for Alaskan Dollars. The Governor breathed a sigh of relief since he was counting on Jake's deposit to fully cover all the money they had printed.

That summer's rioting was the worst since Chelsea took office. The Legislature had stopped making Social Security, Welfare and AFDC payments, resulting in wholesale rioting up and down the Eastern Seaboard that National Guard troops couldn't contain. Chelsea sat in the White House Oval Office gloating as the casualty reports came in. Teddy was too busy with organizing a Gay Pride Parade march in DC to care either. Once the rioting got within 5 miles of the White House, the Secret Service ordered their evacuation to Mount Weather Virginia. Marine 1 was a brand-new fly-by wire twin turbine VIP chopper with no manual connections to the cyclic or collective. It was more computerized than the elderly Pave Low. Chelsea, Teddy, the Cabinet and selected senior members of Congress who were on the List were evacuated to Mount Weather in several copies of Marine 1.

The previous morning, the Early Warning System monitors in Allakaket started an automated Klaxon. Jake thought they were under attack until the operator called and said that the CME detector went off, and a massive X-79 flare had produced one of the biggest CMEs ever seen before, and according to the SOHO satellite webpage, it was headed right for Earth, and should strike within 48 hours, meaning the CME was traveling much faster than predicted. The ACE Solar wind real-time data indicated that the Solar Wind's magnetic field was -50nT relative to Earth, the speed was right around 1,000km/sec, and dynamic pressure was 80 nano Pascals. The operator had been trained at the University of Alaska, and he explained to Jake that according to the SOHO webpage, the CME approaching Earth was what they called a TEOTWAWKI event, and any electrical devices that weren't shielded would probably be damaged. As he finished talking, another alarm went off "Oh my GOD..."

"What!"

"Sir, a second CME even bigger than the first one just left the Sun 8 hours behind the first one. If this keeps up, it could blanket the Earth."

"How much time until the first one hits?"

"The first CME is already 8 hours closer to Earth. That means we now have around 36 hours to get everything into shelters or Faraday cages."

"Ok, sound the Red Alert, I've got some phone calls to make!"

"Governor Adkins please. Ok, please tell him it's Jake Williams, and it's an emergency."

2 minutes later Governor Adkins answered the phone. "Jake, this had better be important."

"Remember that last CME 18 months ago? 2 CMEs are headed to Earth, and they're almost twice as powerful as the last 1, and they're out of phase with the Earth's magnetic fields."

"Ok, speak English."

"Governor, it's easier to show you than tell you. Get to a computer, log on the Internet, and type http://www.sec.noaa.gov/SWN/index.html That will take you to the Space Environment Center webpage. Ok, you see those gauges? They tell you that the CMEs headed our way are out of phase, moving at nearly the speed of light, and are packing a wallop! You need to get everything electrical or electronic into Faraday cages or underground insulated shelters in the next 36 hours. Make sure you protect the radio gear I gave you. Once the CME is over, give it 24 hours, then I'll contact you. I've got a huge list of people to notify so I've got to go."

8 hours later, the klaxon went off again. Jake looked at the operator, who was white as a ghost, and pointing at the screen. A third CME had left the sun 8 hours behind the 2nd one, and it was even bigger and more powerful than the first 2. The operator sat there muttering "Oh my God, it's the end of the world!" Jake grabbed his chair, spun him around and looked him in the eye. "You've got to get hold of yourself. We've got 28 hours to prepare, but I'm going to need your help. I need you to broadcast the E-mail I've already written called "CME Emergency" and send it to the CME Emergency list. It contains a contact list of the World's governments, top scientists, and a long list of people we need to notify. While you're doing that, I need to contact the Governor, and make preparations to evacuate our Operations Center to the Shelter. First, call your family and tell them to prepare to evacuate to the shelter."

"Thanks Sir!"

Jake called the Governor's office. Governor Adkins answered the phone. "Jake, I know we were just watching the site when the 3rd alert was posted. How long do we need to stay in the shelter?"

"At least 24 hours after the CMEs hit, say 72 hours from now to be on the safe side. Don't activate any electrical equipment outside the shelters for at least 80 hours from now. There isn't anything you can do in the first couple of days anyway."

"OK Jake, I'm activating the EAS system. Good luck and hopefully I'll hear from you in 3 days."

36 hours after the first warning, Chelsea and Teddy boarded Marine 1 for a brief flight to

Weather Mountain. Right as they reached 5,000 feet the helicopter dropped like a rock and exploded on impact.

Chapter 8 - FUBAR

After Chelsea's attack, Josh and General Stone decided to keep the SEALS close for a while. He arranged survival training at Alaska Survival Inc.'s facilities with the current JSOC despite the fact that Alaska wasn't part of the United States anymore. 18 months after the first CME, Commander Jim Taylor's team was cycling through the training program when Josh got the CME warning. Josh and the SEALS spent the next 8 hours taking care of the Civilians, and getting everything into shelter that they could, including the SEAL's C-130 and all their equipment. Josh lost track of time, and they were caught outside by the first CME.

Once things had calmed down, Josh realized he'd gotten a sunburn for the first time in his life. Josh and Jake sent a runner to check with the Technician that was in the basement still monitoring the situation. 15 minutes later he drove up in one of the few running vehicles in Allakaket, and told them that they needed to get everyone into the shelters, and stay there until this was over, since that X-79 class flare's CME had penetrated the magnetic field, giving everyone that was outside right around 100 rads per hour of X-rays, plus a healthy dose of UV light. Josh realized that 100 rads wasn't THAT dangerous because the exposure was only for a second or two, then remembered that the dosage was cumulative, and the next burst was due to hit 8 hours after the first. He grabbed his radio and said "Everyone to the shelters NOW, take all the vehicles that are still running with you, and tow the others if possible." On the way to the shelters, Josh spoke to Commander Taylor, who said his SEAL team would stay in Allakaket for the duration of the emergency. Josh told him that could be a while if the CME's grounded all the Air Force's transports.

"We'd probably be better off here than at our base, I think you guys probably have the best preparations for doomsday that I'd ever seen."

"We've got enough shelters for 3 times the current population of Allakaket with enough spares and provisions to last 15 years without resupply. How about the SEALS with families? It may take a while to get you back to your base later."

"We'll worry about that later, let's get everyone into shelters first."

8 Hours later, the second CME struck, the X-87 class flare was twice as powerful, and did twice as much damage. Luckily for Allakaket, the Earth had rotated 8 hours after the last one, and they were on the fringes of the second burst, but China, Russia, Japan, Hawaii, Asia, and the South Pacific experienced catastrophic losses. The X-rays were between 120 and 150 rads, and millions were horribly sunburned by exposure to severe UV radiation. Everything dependent on electricity ceased operating. Millions of commuters were stranded when the Japanese train system ground to a halt. Accidents and power failures took their toll. Huge Airbus passenger planes running fly by wire, touted as the Next Great thing, were crashing all over the world,

sometimes into populated areas, sometimes into the Pacific Ocean.

8 hours later, the third and biggest CME struck from Western Russia all the way to the Atlantic Seaboard of the USA. X-ray doses to people out in the open varied from 150-180 rads. The UV caused 2nd degree skin burns to anyone outside when the CME hit. Europe was devastated because they had gone to total electrically powered vehicles by 2030. Several nuclear power plants were quickly accelerating to meltdown stages, threatening several China Syndromes. France had over a dozen reactors since they didn't want to pollute the earth by burning fossil fuels for power, and soon their population, and everyone within a couple of hundred miles downwind of them would be exposed to lethal doses of radiation as the containment walls melted from the heat of the uncontrolled nuclear reaction as the coolant drained away or turned to steam. Even their diesel backups wouldn't work, because the generator itself was crippled by the huge CME pulse, and wouldn't generate electricity. These scenes were repeated world-wide as the Sun bombarded the Earth's surface with x-ray and UV radiation for the first time in recorded history. The scale was impossible to fathom, but the end result was between the radiation, accidents, fires, lawlessness, panic, lack of food and water or basic medical care 2/3 of the population of the Earth died as a result of the CME's over the next 6 months to a year. Over 10 million people downwind of France and Germany's nuclear power plants died of radiation sickness in the coming months, and the land was contaminated with radioactive uranium that was carried out of the burning reactors and distributed by the winds, making most of Europe uninhabitable for hundreds of years. In the big cities world wide, fires raged unchecked, destroying buildings and killing people because when the power went out, they had no means of pressurizing the water to fight the fires. Several of these fires were caused by plane crashes and train wrecks, and some were caused by vandals and looters, but the bulk were just caused by carelessness and accidents as people lit candles, lanterns, and anything they could find to provide light.

Back in Allakaket, once the 3rd CME passed, Ron met with his sons to plan for the rebuilding of Allakaket. He was amazed that they had came out of what was probably a TEOTWAWKI situation with as little damage as they had. None of the appliances in some of the houses were working, and in some houses most of the appliances worked. Most of the newer gasoline-powered cars wouldn't run, and some diesels that weren't in shelters weren't running either. Ron was grateful they had so much time to prepare, and he prayed that the recipients of his message had taken the necessary preps. With worldwide communications down, he didn't know how bad it was, and frankly he was afraid to find out. He was grateful that Q had made the suggestion to store hundreds of handheld 2-way radios in fine flexible copper mesh cases, because it meant that they had local communications. Ron hoped that Governor Adkins had taken the steps Jake recommended, or Alaska was going to be in sad shape.

Josh got a call from Commander Taylor that sent him running to the SEAL team commander's side.

“We’ve got comms with our base in San Diego. The power is out everywhere, and our CO is in the process of rounding up our dependents and sheltering them on the base.”

“How’d you manage that?”

“Years ago, JSOC ordered a doomsday satellite constellation just in case some idiot popped a nuke and destroyed our other satellites. Using my laptop and this dish, I sent the satellite the activate command, and it’s in the process of powering up the system. In 8 hours, anyone with this system will have world-wide communications. Each one of our teams was issued 1 for a situation just like this. Anyway the good news is most of our families are already on base, and he’s sending out teams to recover the ones that lived off-base. He asked us to RTB ASAP.”

“ I can get you to Anchorage. Wait a minute, let me ask Jake something.”

“Jake, this is Josh.”

“Go ahead.”

“Commander Taylor made contact with his CO, and he’s asking him to RTB ASAP. Can we loan them a Gooney Bird to transport them to San Diego?”

“Affirmative, all of our Gooney Birds are accounted for, and we’ve got over a dozen in shelters in Anchorage. Better yet, have them take SuperCruiser#2 since it’s got 2 hovercraft. Have them park it off the coast and take the hovercraft to their Base. Tell him if they want to, we can take them and their dependents, or the entire command if the CO wishes.”

“Commander, we can loan you SuperCruiser#2 which has 2 100-passenger hovercraft inside the wet well. Jake said that if you want to send your dependents here, or relocate the entire SEAL command here, we can take care of it.”

“Let me talk to my CO.”

10 minutes later, Commander Taylor told Josh that they’d relocate the entire Naval Special Warfare Group One to Allakaket, since San Diego wasn’t secure, and the rioting was getting worse. SEALS weren’t cops, so they couldn’t deal with the rioters without killing a bunch of them, so they felt it would be better to strip the base and relocate to Allakaket.

“How many people are we talking about?”

“5 Teams plus base personnel, plus their dependents, say 500 people.”

“Do you have any of those instant hangars on base?”

“We’ve got about 20 why?”

“If you can load everything into the SuperCruiser using the hovercraft, we could use the extra space.”

“How about we just drive it up on the ramp and load it. The base is secure, and we could load it much quicker with forklifts.”

Josh remembered that North Island used to be an Amphibian base, and had several ramps wide enough to take the Gooney Bird, including several at the SEAL Base. He told the commander that the GooneyBird had a 500-foot wingspan.

“Don’t they load from the nose and tail just like a C-5a?”

“Right, all he has to do is get the nose out of the water far enough for you to load it, then they can back up and take off. That sounds like a better plan. Call your CO, and make arrangements.”

“Hang on a second Josh, I’ll ask.”

“Ok, we’ll fly the C-130 to your terminal, take the Gooney Bird, load it to the gills, and get back here as soon as possible, hopefully no more than a couple of weeks. By the way, my name’s Jim.”

Sure enough, Jim called from Anchorage three weeks later, saying they needed some heavy lift to unload the cargo. They had a couple of Super Stallions, but their SS would help make the job quicker. While Jim was flying back and forth to San Diego, Josh converted 1 of the extra shelters to apartments for 500 people. While the accommodations wouldn’t be called luxurious, they were definitely better than those at your typical military base. Since it was entirely underground, they made extensive use of daylight florescent tube lighting. Once the Quonset huts started arriving, everyone who wasn’t busy doing something else pitched in to assemble the Quonset huts, and help the families move into their new apartments. Josh, Jake and Ron met, and decided if the SEALS wanted to permanently relocate to Allakaket, they’d encourage them to do so. The first load included Jim and his CO, Admiral “Rocky” Robbins. They all met and Ron offered Naval Special Warfare Group One the use of Allakaket as long as they needed. They were in the process of clearing land to erect their Quonset huts and assemble them, and building extra housing for his men and dependents. Rocky told Ron that they probably wouldn’t be doing much in the next coming months except help the civilians get their lives back together, since all the bad guys were in the same boat as everyone else without power. He asked Ron how Allakaket managed to maintain their power system.

“Admiral, years ago, I tried to call Allakaket and couldn’t make the connection due to a solar flare messing with the satellite. That got me thinking, and the more information I uncovered, the worse I felt. We decided to invest over 100 million dollars to protect everything in Allakaket and all our equipment against EMP that could result if a CME made it through the Earth’s magnetic fields. That first pulse was a wake-up call, and the last three would be what some people would call a TEOTWAWKI event. My understanding is 99% of the Earth is without power, and will soon be without food and water due to their dependence on electricity to power the infrastructure. I’ve heard estimates that between 50 and 75% of the Earth’s population will die in the next year due to lack of food and water, or civil unrest. We’re just seeing the tip of the iceberg now. Once they run out of clean drinking water and food, it will get much worse. We’re in a position where we can help, but first we have to make sure Alaska is back on its feet, then we’ll slowly expand through the Continental US, and if we can later, to other countries. This is going to be a long hard recovery, and we could use all the help we can get. We have the people and the infrastructure to help rebuild, but we’d like to have the SEALS watching our backs, because most of these areas are going to quickly become war zones. I’m going to talk to Q and see if he can come up with anything to militarize the Gooney Bird and the WIG hovercraft transport for self-defense, because some of the people out there might try to attack them to get their supplies, not realizing that if we were to work together, we could rebuilt their infrastructure and get them back on their feet.”

Ron and Rocky located Q, who was in his laboratory checking to see if anything was damaged. One or two pieces of equipment, and some computer chips that were accidently left out were not working. Q was grateful that Ron had given them a heads-up, and told him when he saw him. The 3 men sat down over coffee to discuss what they could do.

“Admiral, I’ve stockpiled thousands of common chips for the fuel monitoring systems. I’ve also got huge stockpiles of metal and the blueprints to make thousands of Moller rotary engines. I realize that most of the US went to Hybrid electric vehicles in 2010, but do you know why they had to be so stupid to use different chips every year?”

“Q, I’m not from Detroit, so I don’t have a clue what they were thinking, if they were thinking. My guess was they each came up with a proprietary chip just to be different. Why what do you have?”

Q pulled out an inventory sheet and started reading out loud. “We concentrated on the heavy transports to get food and supplies to market ASAP. I’ve got 5 thousand chips each for the Cummins Turbodiesel 2010-2030 turbogenerator, the GE 2010-2015 gas turbine generator, the Ford 12-liter turbodiesel generator from 2010-2020, The International Harvester 2005-2025 turbodiesel that also runs their turbogenerator from 2020-2030. The GE chip is the same as the controller for most of the newer railroad engines.”

“What good is having the chips?”

"Admiral, I did some testing, and found that the motors and wires were fine when I exposed them to simulated EMP, but the chips were fried. If we replace the chips, we can get most of them running if they're still in running order when we get there. But that only solves 1 problem. Most of our manufacturing is so totally computerized that I'm not sure we can make anything anyway. My CNC machines are 100% computerized. Food processing is totally automated too. Even the tractors and combines are heavily automated. We might have to build tractors and combines like they did in the mid to late 20th century without any computer controls until we can get someone to manufacture a standardized chip. If we do this, we need to standardize on 1 piece of equipment, i.e. 1 style/brand of truck, 1 style/brand of car, etc. if they want different colors, we can give them a limited selection. We can't duplicate efforts with a limited stock of components, at least until we get the rest of the world back on it's feet."

"Any ideas about how to feed the people?"

"We'll have to abandon the cities, at least for a while, and move everyone closer to the food. With half the population dead of starvation in 5 years, we won't have that many mouths to feed anyway."

"Can't you do something to stop the starvation?"

"Not without probably losing our own lives. We don't have enough food stored in Alaska to feed 10% of the US population, let alone everyone who's without food. The grocers use "just in time" inventory to keep costs down, and don't stock more than 3 days worth of food. The warehouses only stock 1-2 weeks worth. Once that's gone, they're back to the manufacturers, who can't produce anything without electricity, even if the farmers could get their produce to them, which they can't because their equipment won't run. Whoever decided to go to all-electric transportation basically condemned the US and the rest of the world to starvation. If they would have kept their gasoline and diesel motors, all they'd have to do is replace the electronic ignition on the gas motor with a points set, and the vehicle would at least run. Diesels only needed a mechanical fuel pump and fuel injector. All of out diesels have 3 spare chips each in Faraday cages. All of our gasoline motors have 2 backup points ignitions. All our Jets and helicopters were hangared in hangars with built-in Faraday cages. Ron sent a warning e-mail to every big business and government, and the only 1 he heard back from was Ronnie Barrett at Barrett Rifles so I don't have a lot of sympathy for them right now. I feel bad for all the innocent people who are suffering, but I can't do much about it right now."

"I understand how you feel. The military had been telling the Congresscritters for years to take Terrorism seriously, but they didn't listen until 09/11. 5 years later, they went back to bickering over Social Security. One good thing out of all this will be the destruction of the Federal Government."

"How do you figure that Admiral?"

“DC is surrounded by poor black neighborhoods. Right now they’re stuck with no working vehicles right in the middle of the biggest riot of the 21st Century. The Secret Service won’t have enough firepower to defend them, and none of their vehicles work either.”

“Hopefully we’ll go back to the Government as the Founding Fathers intended, with the bulk of the power given to the states themselves.”

“I doubt if they’ll even be a United States when this is over.”

Chapter 9 - Rebuilding

After meeting with Ron and Rocky, Q got busy working on ideas to militarize the Gooney Bird and the WIG hovercraft. He realized that if he modified the rear ramp, he could easily convert it to a flooding well to get Hovercraft in and out. He discounted mounting naval guns on the Gooney Bird since it normally flew no more than 150 feet off the water and at speeds up to 400 knots. Instead he took his inspiration from the Aegis Cruiser and the fast attack Submarines, and mounted vertical launch missile tubes behind the cockpit on the top deck of the aircraft. Q decided to arm the Gooney Bird with a mixture of the new SM-6 Standard Smart SAM, Tomahawk III multi-purpose cruise missiles, and supersonic SLAM/Anti-ship missiles that could be fitted with any conventional or tactical nuclear warhead. He added underwing pylons to the forward canard to carry the new Eagle multi-sensor smart missile, and the latest variant of the Harpoon anti-ship missile, and upgraded the radar in the nose of the craft to one superior to the unit that was mounted in the old F-14 Tomcat, that had an air to air capablity, as well as an excellent surface radar that could track up to 40 targets at a time and engage them automatically if the WSO chose to, or selectively using either a keyboard or joystick to designate targets. Q reasoned that he would need the forward launching missiles for self-defense, since the vertical launch tubes wouldn't work at speeds over 100 knots.

He was curious when he found out that they had over 100 Bofors L70 40mm Autocannons and several million rounds of 40mm HE-T ammo with proximity or common contact fuses, so he called Josh, who told him that Gene had gotten them years ago when they armed the oil tankers, and they just stored them. He thought that if he could modify them, and mount a pair of them in a turret like the Sgt. York right behind the cockpit of the WIG hovercraft that they would be one heck of a defensive and offensive weapon, since as an anti-aircraft gun, it could engage anything below 15,000 feet, or 2.5 miles around them at maximum slant range. He improved on the ideas of the Sgt. York system and slaved the gun to a superior radar system that could track fast moving aerial targets or sea-skimmers. The copilot/gunner had the choice of using an improved semiauto helmet sighting system used in the Apache or a joystick to engage targets. Q decided on a huge 5,000 round magazine because resupply would be difficult if the Gooney Bird was any distance away. He would have loved a much heavier gun but he realized the lift motors could only handle so much weight. Q showed his ideas to Ron and Rocky, who thought that if the Military ever got back on it's feet, they'd like to buy a bunch of the militarized Gooney Birds and the hovercraft. They decided to retrofit 5 Gooney Birds and 10 hovercraft to start with so they would have enough transport to start helping to rebuild once things stabilized.

Jake finally established contact with Governor Adkins. The State itself was in good shape, but some of the cities were in bad shape since some of the "sheeple" refused to believe anything bad could happen, and didn't plan ahead. Jake shook his head, and told the Governor that if they were living in California or some other Continental US state, those sheeple would starve, so he shouldn't feel too sympathetic toward them. Jake wanted to know what shape the infrastructure

was in, since before they could rebuild the rest of the world, they needed a stable base of operations with a fully functioning infrastructure. The Governor said the power plants were back on line, but several manufacturing plants didn't take precautions, and were dead in the water. Jake asked him if any of these manufacturers would be considered "critical" or if they were building non-critical consumer products. The governor admitted they weren't critical, but they were big employers. Jake told him the first priority was to restart the infrastructure, and consumer goods manufacturers would have to wait. The governor agreed and told Jake that the Alaskan government would help wherever possible in their quest to help the world rebuild. Jake suggested that Alaska start helping Western Canada, especially with getting their hydroelectric power back on line ASAP. The Governor told Jake that he followed his suggestion, and stored all their power distribution equipment spares in a Faraday cage, so they had plenty of spares. Jake was wondering how to establish communications with Canada when Q called on the radio. He put the governor on hold for a second as asked Q.

"Jake, that's a no-brainer. Just switch the single-band repeater for a multiple band repeater. Use 2-meter for intra-state comms, and the 440 band for inter-state comms."

Jake thanked Q and told the Governor that they could switch their 2-meter repeaters for dual-band repeaters, and dual-band transceivers where necessary. If they limited the 2-meter band to Intra-state transmissions, they could use the 440-band for inter-state comms, and relay/repeat the signal as necessary until the ionosphere repaired itself to the point that they could use ionospheric bounce to transmit and receive long-distance comms. If they put the dual-band repeaters close enough together, they could daisy-chain a message from repeater to repeater. They'd have to limit communications on the 440-band to emergency level only to prevent the repeater from being overloaded with traffic. The Governor suggested just giving the State Governors or their Emergency Services representative access to the 440-band, and that would have the same effect.

Jake said goodbye to the governor, saying he had to talk to Ron and Josh, then he'd get back to him this afternoon with their plans.

Q was standing in Jake's office when he hung up. "Jake, you'll need hundreds of 440 repeaters because even at altitude, they only reach maybe a couple hundred miles. It's over 2,000 miles to San Diego. We need to re-think this since we only have a couple dozen units at best. We might not be able to establish comms much past Canada until the ionosphere repairs."

"Thanks Q, you're right, I was just hoping..."

"Sorry Jake, I'd love to help the rest of the world right now too, but they're going to be on their own for at least 90 days. That means we can't stop the loss of life, nor should we try, since that would probably mean losing our lives. We don't have the food to feed everyone, and if we contact them we might guilt ourselves into helping. It's cold, but it's reality. These people had

plenty of warning, but chose to ignore the same signs we were seeing. A lot of innocent people will die, but their deaths are on the heads of their misguided and vain leadership. They could have easily spent the money like we did to prepare, but they'd rather support some useless social program that would get them re-elected."

"Q you're right. I can't sacrifice my family's or the community's lives to save others. I wish there were another way!"

"Me too Jake. When I was in the RAAF, we learned that Leadership means making the hard choices, and sometimes we had to give orders knowing we might be sending someone to their deaths. Your job is to protect your family, your relatives, your community, then others as you can without sacrificing the first 3. Even with all our planning, we can't feed enough people outside Allakaket to make a difference without risking the lives of the people of Allakaket."

"How many can we feed?"

"We just added 500 people by bringing in the SEALS, so we're going to be stretched as is. My best guess is maybe 100 more, and they'd have to be people in the outlying areas around Allakaket. We'd do much more good helping rebuild the infrastructure to help feed more people than by giving them the little extra food we have."

"Ok Q, if you could I'd appreciate if you'd sit in on the rest of our meetings for the duration of the crisis."

"I'd be honored Sir."

Later that afternoon, Jake called Q asking for ideas for extended communications. Q knew that the repeaters had limited range based on how big of a transmitter they could efficiently send aloft. He practically smacked himself on the head when he remembered the ancient telegraph system that the Morse Code was designed to use, and later incorporated into wireless transmissions.

"Jake, remember the old Western movies and the Telegraph operators. We could have a 21st Century equivalent that would allow us to transmit over the existing high-tension wires. As long as there aren't any intervening switches, we can send high-speed Morse code down the lines, and when we reach the end of the line, install another 1 of our wireless repeaters to connect to another line. If we did it right, we could gradually get communications between cities and states."

"What About states like Alaska where parts are too remote to have power service?"

"We'll use the radios in those cases, but where there is wire, we can send Morse over the wire.

Maybe if you can get hold of Governor Adkins, he'd be able to help us connect to any existing intra or interstate power lines so we can get this hookup working."

"Thanks Q, If you have any other ideas like that, make sure you let me know."

Jake walked back to the radio, and called the Governor.

"Governor Adkins, this is Jake Williams."

"Go ahead Jake."

"Q came up with a novel approach to communications that could easily and fairly cheaply allow for interstate communications. Remember the old Telegraph system? What if we used high-tension lines for interstate telegraph. As long as there weren't any intervening switches, we could send the signal down the whole line. Once we reached the end, all we'd need was another repeater set to transmit the signal to another high-tension line."

"Wouldn't that be a little slow?"

"Not if we used laptop computers to send and receive at much greater speeds. It takes far less power to transmit over a wire than it does to transmit that same signal through the air. For very long runs, we'd install amplifiers to boost the signal. I need you to get with the people responsible for the power lines, and locate intact intra and interstate lines. We've got some equipment, and I'm sure we can locate more in the other areas."

"Thanks Jake, I'll get back to you."

Things in the rest of the world were going from bad to worse. The loss of power not only caused the nuclear reactors to begin the melt-down process, but had crippled essential services. Soon there was no food, water, or medical services to be had anywhere. People in the big cities fared the worst, followed by people in the suburbs, then smaller towns. Even some of the people living in rural areas, who weren't prepared died when they ran out of food and water, or were attacked by marauding bands of starving survivors willing to kill for their next meal. Cannibalism became common once all the domestic animals were eaten, which quickly occurred in the big cities. Raiders were suddenly raiding the meager supplies of restaurants for barbeque sauce.

In the big cities, the die-off occurred fairly quickly because there were almost no supplies to fight over unless they knew where the food warehouses were. Even people in the suburbs were caught up in the rioting and looting, usually as victims once the food ran out in the neighboring cities. Within months, almost 50% of the US population was dead. In Western Europe the number was closer to 85% due to radiation sickness and the lack of farming. The cities of

Western Russia took a beating due to crumbling infrastructure, lack of food, and radiation sickness from Nuclear Reactors to their west. Eastern Russia faired the best, since very few Siberian Russians were dependent on Electric power for their day to day living.

Most of Asia was a disaster area, except for self-sufficient farming communities in Vietnam, Laos, and a couple of other countries. Their cities were devastated, and any farming communities close to the cities were looted and destroyed by desperate city dwellers. The Philippines, Singapore, Taiwan, and Japan were almost total losses since they didn't make enough food to feed themselves, and most of the farmers were unable to protect themselves from the starving hordes of city dwellers. New Zealand and Australia fared better, since the outback stations were separated from the cities by inhospitable desert, and without fuel, the looters couldn't get to the stations in great enough numbers to overwhelm the defenses of the stations.

India, Pakistan and the rest of that area experienced almost 100% casualties since they were existing right above the starvation line to begin with. The collapse of the transportation that brought food to market resulted in mass starvation, rioting, and looting of what little supplies were left. In Africa, the collapse of power started a series of revolutions, which over the next 10 years would wipe out the bulk of the population. South Africa experienced massive rioting, looting, and revolutions on a daily basis until there was no one left to kill. South America was one of the bright lights because everyone outside of the cities wasn't affected due to their agrarian societies. Any heavy labor was done with oxen and draft animals. The few vehicles they had were so primitive that the EMP didn't affect them.

Meanwhile Governor Adkins was busy trying to set up communications with Western Canada and the rest of Alaska. The head of his Public Utilities Commission had a map of the high-tension distribution lines covering parts of Alaska. The system was incomplete, but covered half of the state. The governor asked him if the lines would work for transmitting Morse code. He told the governor that the huge cables would be perfect, and it would be easy to set up. They met with the State's Network programmer, and explained the situation to him. He came up with an elegant system that would allow data to flow through the powerlines at an unbelievably fast rate. Each node on the system would have a unique ID number so anyone on the network could send and receive data from anyone else on the system. He asked the Governor who thought this up, and the Governor told him that Jake Williams from Allakaket told him about it. The programmer recognized Jake's name, and said that if they could locate enough undamaged equipment, they could have this up and running statewide if the Governor would detail one of the government's jets to the project. Governor Adkins asked them if they could scale up this system to operate inter-state. The programmer asked him how many users he estimated would be using the system.

"Lets see... Us, Canada, Washington, Oregon, what's left of California, Idaho, Nevada, Montana. Wyoming, and as far east as we can go."

"Ok, I'll design it for 500 users for now. It will take me about a week to get this going, and I'm going to need a bunch of laptop computers, amplifiers, radio repeaters, and Solar/ battery power supplies. You might have the cities check around for usable laptop computers, and see if anyone's got a huge supply of deep-cycle batteries and 45-watt solar panels. Can someone find out how much the DC connector for the laptop draws, so I can figure out how big the batteries need to be. We need a 12-18 hour backup on the batteries running the laptops, and the same backup on the batteries powering the amplifiers and repeaters."

Governor Adkins told everyone to get to work, and to get this done as quickly as possible, but make sure it would work the first time, because lives were at stake. He called Jake back and gave him the good news.

Meanwhile Q was busy in his workshop designing and building everything to militarize the Gooney Birds and the WIG hovercraft. The vertical launch missile tubes would be the easiest part. All he had to do was cut a hole in the fuselage and reinforce the heck out of it. The vertical launch missile tubes had some structural rigidity, and since they were flush mounted, they wouldn't create hardly any drag. The wing pylons were being a bigger problem, because he had to add hardpoints in the wing for the pods to mount to. The hardpoints had to be almost as strong as the engine mounts. He finally just redesigned the wings since it was easier than modifying the existing wing. Northrop/Grumman was out of business, and possibly destroyed in the aftermath of the CME, so Q had to do all the work in his shop. Without the automated equipment and computers, it would have been impossible. With the computers and CNC equipment, it took 30 days of very hard work.

Q had held back a copy of everything he had given to Northrop-Grumman, and Steve, his Computer Genius, was the son of one of the white hats hired by the Internet to write hack-proof code. As a result, his son knew more about computers and hacking than about 99% of the programmers and security specialists hired by the various companies. He created back-doors into the very systems his Dad designed 30 years ago, and copied all their design data, and anything they thought would be useful, including basic technology information. The real score was when Steve cracked into the secure computer of several drug manufacturers. Q had the bucks now, and had used the money to build a monstrously huge data storage system to hold all the information, with triple-redundant backups, including removable memory cards capable of holding $10x10^{16}$ Terrabytes each. Once they were out of the computer, they were EMP proof. Just to be on the safe side, Q stored 2 copies inside separate Faraday cages inside his building, which was a Faraday Cage as well.

Steve quickly located Northrop-Grumman's blueprints for the Gooney Bird, and the sub-plan for the front wings. He loaded them into his AutoCad program, and Q made dozens of revisions, adding strengthening members to the wing, and connected the hardpoints for the weapons pylons to those members. Once he was finished with the revisions, he loaded the program into his plasma cutter, which cut the composite into the appropriate shapes. Q made 5

sets, then switched to the hovercraft. Building a turret for the Bofors 40mm L70 gun would be a walk in the park in comparison. He borrowed the T&E mount for the Robo-gun including the hardware and software, reduced it to fit the twin Bofors setup, and started cranking parts out of his CNC machine while the plasma cutter made the parts of the Composite armor. Once all the parts were made, Q flew the parts and his crews to Anchorage where the terminal was. They had all the maintenance equipment there to work on the birds, and they thought Q was nuts when he told them to take off the front wings. Q handed them a letter from Jake telling them to do whatever Q told them to do regarding the Gooney Bird and the WIG hovercraft. A couple of months later, all 5 Gooney Birds were sporting new longer, stronger wings with 3 weapons pylons on each wing straddling the prop clearance for the massive turboprop's propeller.

The heavier Harpoons were inboard of the turboprop, and the lighter Eagle missiles mounted outboard of the propeller's arc. The pylons carried 3 Harpoons on each side, and 8 Eagle multi-sensor smart missiles on each wing. The Vertical Launch missile tubes carried 30 SLAM missiles in permanent tubes, 100 SM-6 Standard Smart SAMs in reloadable tubes, and 50 Tomahawk III multi-purpose cruise missiles in reloadable tubes. The Gooney Bird carried hundreds of spare Standard and Cruise missiles and 50 thousand extra 40mm rounds for the Bofors guns, plus the personal weapons and spare ammo for the teams assigned to the WIG Hovercraft. They also had a small hospital, mess hall, living quarters, and secure comms via the SEALs Doomsday system.

It took another month to arm 10 WIG Hovercraft with the twin 40mm Bofors cannons. Q tested 1 of the autocannons on a target barge, and the look-down, shoot down feature worked perfectly. The Joystick was slow and inaccurate in comparison. Q was constantly zooming in and out, and couldn't quite get the hang of it. Steve asked Q if he could try it, and was zipping the gun all over the place with the Joystick control, and when he climbed out, he told Q he was just too old to be very good with the Joystick, since he didn't grow up with video games. He told Q that anyone who had played video games as a kid would be deadly with the new autocannon.

Q and Josh got together, and they realized the Gooney Bird would need some escorts, both to act as a radar picket, and to intercept hostile aircraft much farther out. Q remembered that WTI bought over 100 of the WIG/SST, and he could fairly easily convert enough so that each Gooney Bird had 2 WIG/SST escorts. Josh suggested that they arm it with the latest variant of the Sidewinder, and the Eagle multi-sensor smart missiles, plus a 20mm M-61A1 Gatling gun with 1,000 rounds.

On the Humanitarian side, The Gooney Birds carried a huge supply of non-hybrid seeds, clothing and supplies, and equipment for digging wells and building houses. They realized that getting the Grid up in the next 20 years would be next to impossible, but they might be able to restore power to local areas using less complex systems and either hydro-electric or fuel oil burners to power the generators. Before they could do that, they had to get the manufacturing

plants that build the distribution transformers up and running, then locate electrical line workers who could check and make sure the lines were safe to energize. They quickly realized it would be easier to revert to an 18th Century Agrarian Society like the Mennonites or Amish, at least until they got the power systems back up and running.

Chapter 10 - Operation Infrastructure

Over the next couple of months, Allakaket Airlines and Governor Adkins' office put together Operation Infrastructure. They decided in a 2-pronged program to start with. The Alaska National Guard bases in Fairbanks were 100% Mission-capable thanks to the Governor's timely warning. Thank God that the Military still knew a no-shit warning when they heard one, and went into overdrive in the time they had to get everything into shelters. The Governor had insisted that the new Alaska National Guard build or upgrade all their shelters, hangars and storage facilities to make them EMP proof. They lost maybe 10% of their equipment, but none of it was mission-critical. All their planes were 100% combat ready, and all their armor, transports and weapons systems were 100% combat ready as well. Their CO was amazed, because under the US Military, they were never more than 80% combat ready. He guessed all the money the Governor's office had sent to the ANG had the desired result. All their old US Army cast-offs were replaced with front-line equipment and spares. The older Bradleys, Hummers, LAVs, obsolete artillery, and older Abrams tanks were donated to the Alaska Militia.

The ANG had purchased 30 of the brand-new 100-passenger N/G WIG/Hovercraft armed with a rapid-fire fully automated 206mm rail gun firing DU rounds with a magnetic sabot and a 25mm GE minigun mounted as a coax gun. Their other weapon was a 6-pack hammerhead turret full of the new Hellfire V Laser/Radar guided fire-and-forget missile. It had a 5 mile range, and was capable of defeating all existing armor, and could also airburst to destroy troops or thin-skinned vehicles. It was so smart that the missile programmed itself based on the target the gunner identified. If the pipper was on a tank, it would fire top-down, destroying the tank. If he placed it over a group of troops or thin-skinned vehicles, it would airburst. If it detected a bunker, it would detonate after penetrating as a bunker buster. The missile was totally fire and forget. Once the gunner locked the target in the system, the turret would track the target, launch the missile, and laze the target until it was destroyed. The missile could also guide using the advanced radar system if conditions weren't satisfactory for laser engagement. The vehicle was equipped with 16 wheels under the cowling for high-speed travel over paved roads, and the front 4 wheels steered. When it reached rough terrain, or water, it automatically reverted to hover mode, and could hover over any expanse of water, or limited terrain.

They also purchased 300 of the smaller APC/MBT. Q took Chelsea's rail gun technology and ran with it. The result was an APC/ MBT with a crew of four and a fully-automated 206mm rail gun firing 80x600mm DU rounds with a magnetic sabot. The back-up weapons included a 12.5 mm Gatling co-ax and a twin-pack Hellfire Mk V launcher. The WIG/Hovercraft could carry 4 APC/MBT plus their crews, spare ammunition, parts and fuel. The APC was a smaller, more maneuverable version of the WIG/HC with a rail gun mounted in a turret. The barrel was relatively short due to the rail gun technology, and didn't extend past the front of the hull. The 12.5mm GE minigun was mounted next to the rail gun in a coax mount to engage infantry or

light armor. In the right rear of the hull was a pop-up hammerhead mount carrying 2 of the new Hellfire V guided missile. The combination of the massive WIG/HC and the APC/MBT was more firepower than most nations had even before the CME. Josh didn't want to risk the lives of even 1 of his men, so he had Q design a weapons system so awesome that no one in their right minds would challenge it. The ANG still retained their full compliment of aircraft and helicopters to provide air cover for the ground troops. They hoped they could "come in peace" but they were prepared to defend themselves if necessary. Realizing that the Gooney bird forces might encounter resistance as well, Q built enough APC/MBT's to equip their Gooney Birds with 8 each.

Once they were "armed to the teeth" as Josh put it, they made plans to start rebuilding western Canada. The Fairbanks contingent, called Northern Command, would enter the Yukon and Northwest Territory of Canada via the Alaskan highway system, rendering what aid they could along the way without losing sight of their mission. The Juneau contingent, called the Southern Command, would enter British Columbia via the Inland passage using the armed Gooney Birds and render what aid they could. Their plan was to restore the infrastructure as quickly as possible, get people planting food, and get the transportation system back up as quickly as possible. Once Western Canada was up and running, they'd ask for volunteers to spread eastward through Canada and help them get on their feet. By this time, the Northern and Southern commands would have converged in Washington, with the Northern Contingent heading East, and the Southern contingent heading South along the coast. The SEALs had volunteered to a man to act as the defensive shield for the humanitarian effort. Their CO issued all the weapons, ammo and supplies they could even possibly use in 6 months. Every spare inch of storage space was loaded with humanitarian supplies including seeds, farming implements, clothing, medicine, generators, and other items they should find useful. Q made duplicate sets of the memory chips, and issued 100 sets for each group with solar-powered laptops capable of reading the chips so they could use the knowledge in the field.

The people of Alaska were growing crops in greenhouses at a frenetic pace, and saving all the extra seeds for storage and shipment to Canada and the US. The entire country was behind the relief effort. The citizens of Valdez Alaska voted to do without the extra power generated by AA's geothermal plant so they could send the power to another refinery to double the production of jet fuel and diesel for shipment to Canada and the US as needed. The Governor was busy making videotaped addresses, and audio tapes of those same addresses to be broadcast across Canada and Washington to minimize the chances of someone attacking the convoys thinking they might be invaders. At the same time, the printing office was printing up leaflets for a massive leaflet drop. He located one of the planes at Elmendorf that they used to broadcast propaganda, and got them to fly a high-altitude racetrack over Western Canada broadcasting the video and audio signals for 2 weeks before he would risk sending anyone in. The plane was intercepted by 2 RCAF fighters, and the pilot quickly explained who they were, and what they were doing in Canadian airspace. They followed the fighters down to their airbase, and after the CO reviewed the tapes, he told them to go aloft and broadcast them, as well as a message from

him telling his forces to stand down and not interfere, and to help where they could. Once they were at altitude, they called the Governor and gave him the good news. Once the word got out, they diverted to British Columbia and received several replies from Ham radio operators who said they would spread the word.

Once everything was set, the convoys set out from Fairbanks down Alaska Highway #2 while a pair of Gooney Birds prepared to fly from Juneau to Prince Rupert, Bella Coola, and Alice Port on Vancouver Island to connect with several Canadian highways. Looking at the map, Governor Adkins thought that the Fairbanks contingent had it's work cut out for it. They also had the manpower to tackle the job. He told the Fairbanks CO that he was responsible for everything North and East of Fairbanks, and Juneau would handle Coastal Alaska and British Columbia. The very remote towns in the far north and west of Alaska might not get help for 6-12 months. He called Jake and asked him if Allakaket Airlines could make contact with as many small towns and villages with access to suitable landing sites for their SuperGoose as possible since the Fairbanks ANG people would be concentrating on their North and East, and the Juneau group would handle Coastal Alaska. Jake could see that would leave a lot of the interior of Alaska to them. He told the Governor they'd do what they could, but they didn't have a lot of supplies to be supplying the interior towns, and meeting their needs. Governor Adkins suggested they requisition supplies from Elmendorf or the Alaska National Guard supply depots in Fairbanks for anything they needed, and to bill the fuel to Alaska. Jake told the Governor he'd take care of it, and called a Pilot's meeting. They had 12 SuperGoose aircraft to service the interior of the state West of Fairbanks, but at least they had access to the ANG supplies so they wouldn't have to strip Allakaket.

The CO of the Northern Command decided to split his forces into 3 teams. 1 to go North to Dawson, and East to Yellowknife, another to head East to Whitehorse then South, and a 3rd team to take care of the numerous small towns within a 300-mile radius of Fairbanks. The motor pool mechanics quickly got all their transports working 100%. Each convoy was lead by a APC/MBT, with 2 interspersed between the convoy vehicles, and another acting as Tail-end Charlie. The convoy consisted of fuel trucks, 18-wheeler tractor-trailers hauling supplies, and low-boys hauling spare construction equipment. Each convoy was lead by a Kiowa Warrior that was checking the road ahead, and backed up by a pair of the new Apache II attack choppers, and 2 Blackhawk II administrative helicopters. Several of the trailers held dozens of military diesel 10KW generators to power fuel depots, and other essential services. The Lt in charge of the Eastern team was glad that his generators came on trailers so he could tow them between sites. One suggestion was to run it during the night to fill up the town water tanks, then use it during the day to power gas stations and other needs. Each one of the OIC's was issued a set of chips to replace the Engine Management System chip in selected modern diesels, so they were on the lookout for Cummins TurboDiesels, Ford 12-liter diesels, and IH turbo-diesels, as well as GE electro-motive generators for train engines.

The next day the Whitehorse team stopped in Tok, and located the Mayor. He said that

everyone was fine, and all they needed was fuel, canned goods and staples. Lt. Nicholas "Nicky" Carone got a list of what they needed, and unloaded a 18-wheeler full of supplies, and a dual trailer fuel tanker full of diesel and gasoline. He told the mayor to ration the fuel, since there were only 2 refineries working in Alaska, and they were probably the only ones working in the world right now. That news stunned the Mayor, he had no idea what was going on outside Tok. Nicky gave him a brief sitrep, and what Nicky told him devastated him, especially the estimated casualties, which was upwards of 50% of the population of the Earth.

The Mayor realized his relatives that lived in Seattle were probably dead, since they weren't into preparations, and hated guns with a passion. Nicky told him they were on their own, they wouldn't be back for at least 6 months, and if they needed anything, they had to get it from the Alaska National Guard depots in Fairbanks, which were going to be rationing supplies. He highly suggested they start building greenhouses to grow their own food, because the supplies of food would quickly be exhausted. The kit that Nicky gave them included building materials to make several huge greenhouses. They needed to be heated, which meant that they needed to locate some cast iron stoves to put inside the greenhouse for the colder months, since they needed to grow food as many months out of the year as they could. He told them to save the seeds, because the seeds they gave them were non-hybrid varieties that would grow true from saved seeds. With that, he wished them luck, and drove on down the road to Whitehorse.

As they drove down AK-2, they came across several small towns like Tok. Nicky spent as little time as necessary getting them up to date and issuing their ration of supplies. He located several working Ham radio stations between Fairbanks and Whitehorse, and gave them the list of frequencies to monitor and pass messages until a better system could be implemented. Almost 600 miles later, they arrived in the outskirts of Whitehorse, Canada. They were met by an APC flying the Canadian Flag. Nicky stopped his APC, and got out and walked up to the Canadian APC. The commander met Nicky halfway, and exchanged salutes. Nicky handed him a letter from the CO of the nearby RCAF base, and once he read it, he relaxed, and turned to wave at the APC, who shut down his engine. The commander stuck out his hand and said "Lt. Commander Bob Roberts at your service."

"Commander, I'm Lieutenant Carone with the Alaska National Guard. We're here to offer any help you need."

"Lieutenant, you're an answer to prayers. Please call me Bob. We're badly in need of food, medical supplies and fuel."

"I've got a limited supply of everything you need in the convoy behind us. We're forced to ration supplies to help as many people as possible."

"We'll be grateful for whatever you can give us. This is the last running vehicle in town. We've got tanks full of fuel we can't use since none of our generators are working."

“We’ve got dozens of 10KW trailer-mounted diesel generators. We could let you have 1 to power critical equipment.”

“Good thing the pumps are all underground. Once we get power to the pumps, we should have plenty of fuel, but we’re almost out of food and medicine.”

“We don’t have anything exotic with us, just antibiotics, insulin, OTC meds, bandages, and stuff like that. As far as food goes, we’ve got a limited stock, but we’ve got plenty of Non-hybrid seeds and materials for you to build your own greenhouses and start growing your own. Do you have a secure place to store this stuff?”

“Follow me to the armory, it’s about the safest place in town.”

They followed Bob’s APC into Whitehorse, the Capital of the Yukon Territory, which was located on the Yukon River, and had a small hydroelectric dam which they were having problems restarting. The diesel backup generators were down for the count as well. No one with the Fairbanks contingent knew how to fix either of them, so they delayed restarting it until they could get some experts available. They unloaded an 18-wheeler full of supplies, and a diesel generator. They connected it to the circuits running the fuel pumps, and they started working. He started filling emergency vehicles first, then private vehicles. Once they were finished, he towed the generator to the town water works, and started filling the storage tanks. Volunteers were unloading the 18-wheeler, breaking down the pallets, and storing the supplies on shelves in a big shelter inside the armory. Nicky asked Bob if they had a working military radio, and he said they did, so Nicky gave him a frequency to monitor, and another to call with emergency messages. Bob insisted that Nicky’s team stay overnight in Whitehorse, since it was a long drive to their next stops, and they weren’t as well equipped to put them up for the night.

The next morning Nicky sent a small contingent North to Carmacks, then they would loop back down via Ross River, and meet them at Watson Lakes. In each case, the towns were in pretty good condition considering, and just needed basic supplies. They were already self-sufficient since they were so isolated. Nicky knew it would be different in the cities, but so far the small Canadian towns were in pretty good shape considering they had most of their electrical devices destroyed by the EMP.

The Southern Command started in Juneau, and before they went South to Prince Rupert and Vancouver they took care of the small towns around Juneau using the hovercraft and boats. Once they were finished loading the Gooney Birds, they went down to Ketchikan, then on to Prince Rupert. They were both in relatively good shape considering, and appreciated the supplies they left behind. Everything was going great for the Southern Command until they heard rumors of slavery and prison camps being run by the Ruling Elite on Vancouver Island. One elderly gentleman in Bella Coola told Chief Tony Carlson that one of his relatives escaped from a Prison Camp in Vancouver being run by the Chief of Police. The conditions he

described reminded him about what he read about the WWII Nazi Concentration Camps.

Chief Carlson approached his SEAL team Commander Bill Mc Donald with his suspicions, and received permission to lead a recon team after the 007 checked the area out from the air at night. The 007 pilot and observer came back with very disturbing news that confirmed the rumors. They saw several compounds around the island surrounded by barbed wire, with the towers facing inward like they did in the descriptions of the Nazi Concentration camps. As far as Cmdr. Bill MacDonald was concerned, that settled it.

He sent a complete SEAL Team in to investigate, determine where the non-combatants were being held, how many guards they had on them, and the location of the fat cats that were living high on the hog while the peons starved. Tony took 1 of the helicopters and had them drop them off in a deserted spot. They treated it like a beach reconnaissance, and were met by no resistance. They spent the next two weeks sneaking and peeking around, and came back with a detailed map and notes covering where everyone was. The fat cats were holed up in one of the downtown high-rise buildings surrounded by a heavy security force. The only vehicle that was allowed to get close to the building was a white van bringing women and children to the building, and body bags back out the next day.

Tony asked Bill if they could just destroy the building, then liberate the camps. Bill was in a quandary, and called his CO in Allakaket. Once he told him what was going on, Rocky reminded him that any rescue attempt or assault of the building could result in SEAL casualties. Bill hated it when his CO was right. He decided to send an APC/MBT to within the line of sight of the building, and level it with a couple of Hellfire missiles. The rest of the teams would raid the prison camps, and free everyone being held there. An APC/MBT and a heliborne assault team converged at each camp at o-dark hundred. The first warning the guards had was when the APC shredded the towers with short bursts from the 12.5mm Gatling gun, then rammed the gate. Once the SEALS were through the gate, their ROE was anyone carrying a weapon was hostile, and shot on sight. 2 minutes later, the guards were dead, the commandant of the camp was in flexi-cuffs, and the prisoners were free. Several women were obviously being kept as sex slaves, and were cleaned up and dressed before they were escorted out. Tony duct taped the commandant's mouth closed, and they were met by a 100-passenger WIG/Hovercraft that took everyone back to the Gooney Bird.

Tony and Bill took their statements, sent them to the infirmary for medical care, and made sure they were well fed. Their stories described a horror story. Once the balloon went up, the police threw anyone caught on the streets, or anyone who showed up for food into busses, and they were bussed to "safe havens" that later turned out to be prison camps when no one could leave, and attempting to escape resulted in a bullet to the head. All the young girls and prettier women, and some of the young boys were first separated and housed in a separate building. The elderly and infirm disappeared, and were never seen again. The rest were given simple hand tools, chained into chain gangs, and spent 12-14 hours per day working in a large garden

with barely any food or water. None of the produce, except what was rotted on the ground, was fed to the prisoners. Instead it was packaged and shipped to the city center. Every couple of days, the white van entered the compound, several young women and children were loaded aboard, and were never seen again.

That same afternoon, an APC/MBT whispered up to within a mile of the high-rise where the fat cats were hiding out. The tank commander centered the 6th floor plate glass window of the 20-story building in his cross-hairs, and squeezed the trigger. The first Hellfire flew right through the window glass, and detonated seconds later right in the middle of the building. He squeezed the trigger again, and this rocket connected with the building's Natural Gas pipeline, rupturing it. The resulting fireball blew the building sky-high, raining debris within 50 feet of the APC. He turned around and headed back for the mother ship for a ride back to the Gooney Bird.

Tony and Bill weren't too careful questioning the Prison Commandant and the Assistant Commandants. before he died a slow and painful death, he told them the entire rotten story. The whole scenario was dreamed up by the Mayor and the Chief of Police, and they were arresting people for the slightest reason, and even taking refugees to the same camps under the guise of sheltering and feeding them. They didn't realize it was a prison camp until it was too late. The young and beautiful women, and some boys were reserved for the pleasure of the mayor and his cronies, and the rest of the women were rotated through the guards' barracks when they weren't out working on a chain gang. Over 30 thousand people were on Vancouver Island when the CME destroyed all the electrical power. Within a month, 20 thousand people were in the camps, and by the time the SEALS liberated the camps, less than 10,000 people were left. They were either starved to death, or else beaten, tortured, raped and starved to death. According to several women who survived, the lucky ones were assigned to the Fat Cat's Penthouse parties, since they only had to face 1 night of what felt like an eternity of perverted sexual and physical abuse. Most of the surviving women bore scars and burn marks on their bodies. Several begged their liberators to shoot them in the head.

Bill transcribed the statements along with the Commandant's confession, and sent it back to his CO in Allakaket. When Ron heard Rocky's outburst as he read the message, he thought that Admiral Robins might have been a Mustang - he swore like a Chief. Ron and Rocky sat down, and decided they needed to rethink this idea about rebuilding the infrastructure. Rocky told Ron that he could guarantee the big Eastern Cities would probably be like Vancouver Island, and probably some of the more liberal cities in Washington and California. That meant they either needed to bypass the cities, or slow their time-table down drastically. Ron suggested a compromise of dedicating 1 Gooney Bird and 1 SEAL team to doing a recon of all the west coast cities, except the ones within 100 miles of a nuclear reactor since they probably melted down by now. They could then make a judgement call as to whether or not it was safe to try and help them. The Gooney Birds could land on larger inland lakes, or they could use C-130's and C-5a jets to air drop supplies to inland communities that needed help.

Chapter 11 - Inland from the Sea

Rocky and Ron scoured the maps, and realized that the entire Puget Sound could be 1 big huge trap if they landed there without checking if the Natives were restless. Further South, the Columbia River emptied into the Pacific Ocean near Astoria Oregon. There were 2 main hydroelectric dams on the Columbia. The Grand Coulee to the Northeast in Washington, and the Bonneville Dam just east of Portland, OR. If they could get them running again, they could produce over 10 thousand Megawatts of power between the two of them. Rocky and Ron decided to split their forces, and have each of the 2 armed Gooney Birds they were detailing to the project escort an unarmed Gooney Bird which would double their cargo capacity, and double up on the number of hovercraft and helicopters available. Each pair would land at either the Grand Coulee or the Bonneville Dam, restore power if possible, and use the reservoir as a base of operations to rebuild the infrastructure of surrounding areas. They could then follow the Columbia River Gorge eastward, giving them access to the inland western states of ID, NV, AZ, UT, MT, WY which were west of the Rockies. They'd have to divert north and south over the Rockies and cross at the low points.

Ron got Q busy retrofitting 2 more Gooney Birds with flooding well decks and helicopter hangars while everyone returned to Juneau, Fairbanks, and Allakaket to resupply and regroup. While everyone was resupplying and regrouping, one of the SEAL teams started a long-range recon mission to check out the coastal cities of Washington. What they found wasn't encouraging. The bulk of Seattle and Tacoma was a smoldering wreck controlled by violent gangs. Bellingham in the north was in the best shape of all the coastal cities, with most of its buildings still standing, and the Washington State National Guard firmly in control of the rioting and looting that probably destroyed the other cities. Bremerton was isolated, and in fairly good shape considering. Parts of Olympia to the South, and Everett to the north were in good shape, but half of those cities were destroyed. The team leader suggested avoiding the area around Seattle and Tacoma at all cost, since they'd probably come under attack by the gangs attempting to steal what they had. Rocky listened to him, and agreed. It wasn't worth the risk of losing a team or a Gooney Bird to save them until they had overwhelming force available, and an easy way to target the gangs. Even then he couldn't be sure that another gang wouldn't rise up and take their places. Rocky decided to land in Bellingham while keeping watch to their south. Then when they were finished, they would approach Bremerton from the western side of the peninsula on the opposite side from Seattle, and try and help out there. The rest of the coastal cities of Washington would have to wait.

Once Q was ready to go, all 4 of the Gooney Birds were quickly loaded, then flew in formation down to the mouth of the Columbia river. They had detailed maps indicating bridges and other obstacles over the Columbia programmed into their navigation computer, which would temporarily climb over the obstacles and set down on the opposite side. When they came up to the first bridge, the pilot's hearts were in their throats, but the computer performed flawlessly,

and gently floated the Gooney Birds over the obstacles. Once they reached the Bonneville Dam, the first pair landed in the reservoir, and taxied to the center of the body of the water, then deployed their hovercraft to check out the powerhouse and controls. Steve's dad Rick, the computer wizard, was in this group, and it was his responsibility to get the hydroelectric plants up and running any way he could with reasonable safety. One team climbed down the stairs to the generator room while Rick and his team surveyed the control room, and located the power feeds for the control room, and connected a diesel generator to the leads that would power the computers. He knew the CPU would be dead, but he was hoping that the programs were intact, and he could replace the CPU with his high-powered laptop. After several hours studying the system, he was able to bypass the CPU, and connect his laptop in the place of the CPU.

Crossing his fingers, he started powering up the control system, including his laptop. Suddenly he got a call on his portable radio. The lights were coming on in the generator bays. The head of the engineers who were inspecting the generators said they were OK to test the system, but they shouldn't cut in too many generators until they knew that there was sufficient load to absorb the power. Rick selected the #1 generator, which was rated at 100MW, and according to his schematic was responsible for powering the entire complex. He typed a keyboard command, and the wicket gates opened, and the generator slowly spun up to speed. Once the gauges said it was making sufficient power, he called and told the guy standing next to the generator to shut down and disconnect quickly, since the power levels were ramping up fast! Observers outside the building were watching nearby large buildings, and called in to say the lights were on in several buildings. Rick thought that the distribution transformers should have been fried, but when he traced them out, he saw that someone had installed an automatic disconnect that saved the transformers. He knew that the electric company wasn't so careful with the smaller transformers, but at least they had power, and could move businesses to the power, or the power to the business. The first thing they needed to locate was either some working transformers, or a company that manufactured transformers, and build a bunch of them. Once they had the power back on, they drove an APC/MBT into town and located City Hall. A Colonel in the Washington National Guard walked out to meet them, and told them his name was Colonel Ortega, but they could call him Mike.

"Mike, I'm Rick from the Alaska National Guard. We've just flown in from Juneau Alaska, and we're trying to get the infrastructure back up. Another team is at Grand Coulee Dam trying to get it up and running."

"Rick, we're grateful for the power, but now we need to go around and throw the mains on any abandoned houses as quickly as possible, and isolate dead transformers from the system."

"Mike, relax, I only energized the #1generator that runs the plant, and maybe a couple of buildings on the shore. Once you're ready, we can turn on the other turbogenerators as needed."

"Great, we hopefully can power the hospital, city hall, the police and fire stations, and some

shelters."

"Mike, can you locate the power line workers ASAP. We need them to check the lines and transformers before we engage any more turbogenerators. Also, if you want phone service, you need to locate the telephone repairmen to check the switches, etc. Do you have a list of any manufacturers in town that manufacture critical supplies?"

"I've got the lists right here. What do you want first?"

"The power company linesmen, then the critical manufacturers."

"I'll send someone around to collect the linesmen. They're going to need fuel for their trucks."

"Do you have any underground tanks? If so, I've got diesel generators to power the pumps if they're still working. If not, I've got a small fuel truck with a pony pump that can siphon the tanks and dispense the fuel."

"Let's try the generator first. How do I get hold of you?"

Rick handed Mike a handy talkie and a recharging base. "Now that you've got power, you should be able to keep the batteries charged. I'm on Channel 5, and Channel 1 is the Emergency frequency. If you've got an Emergency, call on Channel 1, and we'll send the SEALS."

"You guys have a SEAL team with you?"

"Part of 1 anyway, supplemented by Alaska State Militia members."

"I'm glad you're on our side, when I saw that Hovercraft, I nearly needed to change my underwear. What kind of gun is that?"

"The main gun is a rail gun, and the coax is a 12.5mm GE minigun. The turret on the back carries 2 Hellfire missiles."

"You guys are definitely loaded for bear."

"We already ran into trouble in Vancouver BC. That's why we're being so cautious."

Over the next couple of months, they slowly got things working again. One day Mike ran into Rick, and he had someone with him.

"Rick, I have someone you'd like to meet. This is Kurt, and he's the superintendent of the

Bonneville Dam."

"Mike, what good is that going to do me?"

"Rick, I know were some spare parts are, including enough power transformers to get the town back on line, and then some. Over the years, we stored our refurbished transformers in storage rooms deep in the dam. There's a freight elevator that takes you inside the dam, and I've got the keys to operate it."

"Well, what are you waiting for, let's go!

They drove out to the service entrance of the dam, and Kurt got out, opened the door, and they followed him to a freight elevator.

"Good thing you got turbine #1 running, or this elevator wouldn't go anywhere - how did you do it?"

"I just bypassed the CPU, and plugged everything into my laptop. Your computer seems to have been built in the 1970's."

"Just about. The power company doesn't spend money it doesn't have to."

"So why did you store your excess refurbished transformers?"

"They contain PCB's, and the EPA has a cow when we try to dispose of them, so we just stored them. It's cool and dry down in the middle of the dam, so they should be fine. My guess is you'll find a similar situation at Grand Coulee and the other hydroelectric dams in the Western US, since it's cheaper to store them then to dispose of them. Ok, everyone aboard!"

Kurt closed the door, and punched a button. A couple of minutes later, the door opened, and Kurt said they were at the base of the dam, almost 500 feet below where they were. He told Rick that there was a total of about 5,000 square feet of storage down here, and it was full of equipment from substation transformers to pole transformers and pad mounts. He walked into 1 of the rooms and there were literally hundreds of each type there, with stickers on them indicating the date they were refurbished, and the technicians initials. Rick told Mike to get the linesman down here, and show them what they had available for spares. Once they got to the surface, Rick thanked Kurt and said he had to get back to the Gooney Bird, and tell the team at Grand Coulee Dam to be on the lookout for a freight elevator that went deep inside the dam, because they might have came up with the same idea for storing excess transformers. He shook their hands, then ran back to the hovercraft, and they drove on the water back to the Gooney Bird.

Rick called Sam at the Grand Coulee Dam, and he said they'd start looking for the equipment rooms right away. Sam said he was having problems getting the turbogenerator to start. Rick asked him if he wanted help. Sam said that having Rick there might help them to figure out the control system. Rick boarded a helicopter, and was dropped off on the top of the dam several hours later. He met Sam, and was escorted into the control room while Sam told them everything they had tried. Rick checked the power connections, and realized they had missed 1 connection, threw the breaker, and the lights in the control room came on. Sam said "Thanks Rick, I made you fly all the way up here to throw a breaker switch."

"Sam, don't worry, we found out about that one by trial and error. Let's try to get that #1 turbine running now."

Sam gave Rick the operator's seat because he hoped both hydroelectric plants used the same software, saving the time Sam would need to get familiar with the software. Rick looked the program over, and it was the same software, just a newer version. Once he checked with everyone that it was OK to start #1, he entered the keyboard command, and as #1 started, he called the guy standing next to the generator to tell him to disconnect the generator and shut it down quick to avoid damaging the generator if the circuit tried to back-feed the generator. The lights in the building started coming on, and soon observers were reporting the lights coming on at nearby buildings. Rick was ecstatic. With both units on line, they had enough power for Washington and Oregon for at least limited power since between the two of them, they generated in excess of 10 thousand Megawatts of power.

Once they were finished powering up generator #1, they went looking for the service door. They didn't have the superintendent handy, but they did have an electric lock pick, and the door opened seconds later. Rick remembered that Kurt had pushed the lowest button on the panel, so he did the same thing. 2 minutes later, the door opened to a series of storage rooms even bigger than the ones at Bonneville dam. Rick looked around, and was satisfied they had enough spares to quickly reconnect essential services, then they rode the elevator back to the top. Rick never told Sam, but he was badly claustrophobic, and the sooner he was on the surface, the better. Sam said he could handle it from there, shook Rick's hand, and he boarded the helicopter for the flight back to the Bonneville Dam.

When Rick arrived, the dam was a beehive of activity with electrical repair trucks rolling back and forth from the service entrance to various locations throughout town. Mike explained that they were attempting to at least get the city core power back up for emergency essential power, and manufacturing power, then they would gradually add residential areas as they had the power. For now, they were sheltering people without power and water in the High School Gymnasium, and since they had restored power, they were able to use the rest of the high school for temporary housing at night and for school rooms during the day so they weren't so crowded. They had located the city and county mechanics, and were working on getting essential city and county vehicles running thanks to the chips that they provided. Mike had located some diesel

tractors that were in storage that were old enough not to use chips, and they were being used to prepare fields for planting. Mike told Rick they got lucky, since some Elmer at the County decided to store the older equipment instead of salvaging it, since the salvage yards weren't giving them anything for them anyway. None of the brand-new hybrid vehicles would run since the electronics were fried. He located a couple of diesel-electric locomotives, and they were trying to get them running.

Mike told Rick that they were going to be on short rations for a while, but the seeds he gave them gave them hope for the future. Rick told him to save every seed they could, since they were non-hybrid seeds, and would grow true from saved seeds. Mike made a note of that fact, and told Rick that he'd tell the City Council. Rick told Mike that they'd have to leave soon, and asked him if he had any ideas that would help getting things running faster in other areas.

"Rick, you guys have your act together. I don't know of anything I'd change. I'm afraid you got lucky with the Bonneville and Grand Coulee Dams, Hydroelectric power is pretty fool-proof, but everyone else is either dependent on Grid Power or else they use oil or coal fired boilers to make power. As soon as they run out of oil or coal, even though you get their generators up and running, they're out of power again, so you might want to re-think your strategy. It's too bad that there aren't more geothermal pools like you guys used in Alaska. That would be an elegant solution, since they already have the turbogenerators, and all you'd have to do is drill wells and plumb them to tap the geothermal pockets."

"Mike - what about the area around Yellowstone? I'm sure there's tons of untapped Geothermal power in that area! If we could move the turbogenerators closer to Yellowstone or other geothermal power sources, we'd have virtually unlimited power. The best news is that the EPA and most of the Federal Government is out of business, so they couldn't interfere!"

"Sounds like a plan. What you need to locate would be several towns without power that would be willing to relocate to where you can install the geothermal powerplants. Just make sure to co-locate them with railroads."

"Why's that?"

"When you relocate the manufacturers to the power, you'll need railroads to move supplies in and products out. Since most of the trucking industry went to the new hybrid engines, most of them won't run even with new chips, so you're limited to older non-hybrid technology."

"Rats, I was afraid of that! Alaska ignored the movement to hybrid technology when we found out that it didn't work too well at 40 below zero. The only diesels that worked well were the older mechanical injector types since the computer couldn't compensate for the brutal cold. If there's anything else you need, just give us a call on the radio. Please remember we've very limited in what supplies we can give you, so requests for supplies will probably be refused until

we locate a new source for supplies."

"How about some of the Military Storage Depots?"

Never thought of that - where are they, and what would they have?"

"They stock warehouses full of stuff, enough to supply several divisions for 6-12 months of combat."

Rick grabbed his Laptop, loaded the stored image from the Global Security Webpage, and searched for Depots. What he read was discouraging, Most of the Army Depots were for Ammo storage and disposal, nice but not a priority. Rick looked again, and saw a Naval Supply Depot in Portland, OR which was just a short helicopter ride south from where he was. It was a small depot, but according to the listing, it was a Supply depot, not a munitions depot, and was only staffed part-time so the security could be light or non-existent. He called the Gooney Bird, and they dispatched an Armed WIG hovercraft/transport to check it out. The neighborhood was demolished, but the supply building and compound was intact and deserted. When Rick found out, he turned to Mike and said "We've found a ton of supplies in Portland, but we'll need your help cleaning it out. We need every available man, plus any forklifts you have. We've got 2 armed hovercraft that we can transport the supplies on if you've got a secure place to store it."

Mike made a quick call, and his CO told him that they had a secure warehouse and would be more than willing to act as custodian for the supplies. Rick told Mike that they needed to share the supplies, and store them for distribution. Mike readily agreed, saying that even 10% of what was in that warehouse would solve all their problems. The second WIG/hovercraft landed, and Mike got 100 volunteers to help load both hovercraft. It took them 2 weeks to unload the warehouse, but when they were through, Mike and Rick agreed that they solved their supply problem. Rick called back to Allakaket, and advised them to locate the rest of the Military Supply depots, and to clean them out if possible if they were abandoned. With their supply problem solved, Rick started working on Electricity and transport.

Rick consulted a map, called Sam at the Grand Coulee Dam, and they decided that Rick's group would head into Southern Idaho and Wyoming, then Nevada and Utah. Rick decided to send an armed WIG/hovercraft and an armed WIG/SST to check out Mountain Home, ID. The Gooney Birds would stay at Bonneville until they received word that the coast was clear. The SST took off first, keeping it's speed to no more than 600 knots so it wouldn't get too far ahead of the WIG/Hovercraft, yet it would be close enough to offer support in an emergency. Right as they crossed the Idaho border, the SST's Radar warning horn sounded. Someone was trying to lock them up on radar. 2 seconds later, 2 bogies appeared on the co-pilot's radar screen. Their IFF codes were indicating the normal "Friendly" Blue color, but he realized that Friendly was relative. He made sure their IFF was transmitting, then he heard on Guard "Attention Low level contact to our west, this is Eagle Flight. Contact on Guard if able, and state intentions."

“Eagle Flight, this is Alaska National Guard flight west of your position. We’re not hostile, so please shut down targeting radar, or we will assume you are hostile.”

2 seconds later, the horn went silent, and Larry’s radar indicated that they were no longer being painted by T&T radar, just normal navigation radar.

“Thanks Eagle Flight. We wish to speak to your CO at Mountain Home.”

“Very well, we were going to ask you to land there anyway. Maintain altitude and heading, then turn for runway 45, and escort to the parking area.”

“Eagle Flight, our backup is 15 minutes behind us. I’d advise you not to paint them with your T&T, they’ve got anti-air cannons and itchy trigger fingers.”

“Very Well ANG. We’re almost bingo anyway.”

15 minutes later, Col. Gene “Snake” Simpson saw Mountain Home Air Force Base through his windscreen. “Mountain Home, this is Alaska National Guard #1 requesting permission to land.”

“ANG #1, permission granted. Nice to see someone else for a change. Winds are out of the South at 5, pattern is clear. Expedite since escort is bingo.”

“Mountain Home, we have VSTOL capablity if you wish to have us land on a helipad and bring Eagle flight in now.”

“Roger ANG, divert to helipad half-mile east of runway.”

“Have helipad in sight, will divert. Go ahead and get your Eagles down.”

Snake crossed the runway, transitioned to vertical flight, and touched down on the helipad. Once their engine spooled down, they popped the canopy, and were met by 2 Hummers full of Air Force Police, and another Hummer with General flags. Gene and Larry climbed down and met the Sergeant in charge of the AP detail.

“So where you guys from anyway?”

“Alaska.”

“That is a pretty strange looking plane.”

“It’s pretty weird, it’s actually a Wing in Ground Effect aircraft. We fly no higher than 500 feet above ground in WIG mode, but we can fly at Mach 1.5 for 4,000 miles without refueling. In

Hover/ VSTOL mode, we can fly 50 knots maximum, but it's really hard to hover, so we only use it for landing and take-off if we don't have a runway handy."

General Newman was listening to the conversation, and as soon as Gene and Larry saw him, they stood at attention and saluted. He returned their salutes, then shook hands all around. "You guys mind telling me what the heck this is all about?"

"General, after the CME's we realized that most of the World would be hurting bad, and since we were prepared for it, we're volunteering our services to get people back on their feet. Judging by what we've seen so far, I'm guessing your command is in pretty good shape."

"Actually those are the only 2 working fighter aircraft we have, but we've been able to resuscitate most of our diesel-powered equipment. We've been busy trying to get the surrounding communities back in some semblance of order, but we're running out of food and supplies."

Right as he finished speaking, a huge craft was seen in the west, flying barely above the ground at 400 knots. General Newman's chin hit his chest, he'd never seen anything that big move that fast. Gene grabbed his radio, and said "Condition Green. Land as planned." As it crossed the outer marker, the aircraft flew over the fence, set down quietly on the other side, and coasted to a stop less than 100 feet from the assembly. As the whine of the turbines decreased, the vehicle settled onto it's wheels and grew quiet. The cockpit hatches opened, and 2 more men stepped out.

"General, this is our WIG/Hovercraft. It can carry 100 passengers or 10 tons of supplies. We loaded it with food and medicine. If we can get some help unloading it, we need to talk in your office."

The General turned to the Sergeant and said "Get some men, and get those supplies unloaded pronto, I'll be in my office if you need me."

The Sergeant saluted, and said "Yes Sir!"

The 2 pilots of the WIG stayed with their aircraft to supervise the unloading while Gene and Larry drove in General Newman's Hummer. They stopped outside his door, and they followed him into his office, where he offered them some coffee, and told them to be seated.

"Gentlemen, I don't know what to say."

"General, have you ever heard of Ron Williams and Allakaket Airlines?"

"Of Course, who hasn't."

“We started planning for this almost 10 years ago, and when it finally happened, we were prepared, as was the rest of Alaska. Ron tried to warn everyone else, but no one would listen to him. We don’t have a lot of supplies, but we do have a stock of non-hybrid seeds and medicine, as well as chips for common diesel engines, and a set of data chips that contain practically everything on the Internet, and some stuff that wasn’t right before the Shit hit the fan. We’re giving them to you and we only ask that you continue to help the civilians around you. We need your help coordinating bringing Idaho back on line. Do you have any communications with anyone outside your immediate area?”

“Ok, we could really use the seeds, since everything we’ve been able to scavenge has been hybrids. Most of our equipment is military, so I doubt your chips would help, but maybe if we located some civilian tractor-trailers, we could use them. We’ve had no communications with anyone outside of our immediate area. We’ve even tried sending the F-15E’s aloft and transmitting on Guard, but we’ve gotten no responses.”

“General, I was afraid of that. The CME knocked out everything electronic worldwide including any radios that weren’t protected by Faraday cages. If you had some old tube-style radios, those should work.”

“I’ll get my Maintenance Sergeant working on it. We’ve only been able to help people within a 100-mile radius, and we really haven’t been that much help. We’ve been able to use our generators to power the hospitals, water and sewer plants, but that’s been about it.”

Col. Simpson looked behind General Newman’s head to a large-scale map of Idaho. “General, could you help me locate these coordinates or city names?”

He handed the list to General Newman, who pointed them out on the map, then asked Gene why he needed to know where they were.

“We found some Geothermal hot spots at those coordinates, and we were going to convert the oil and coal burning powerplants to Geothermal power. The oil and coal plants might have maybe 6 months of supplies on hand, then they run out, so even if we get them running, they’re out of business in 6 months. If we relocated them to geothermal hot spots, they could use the geothermal heat to make steam and have power for the next 100 years.”

“I wonder why they didn’t do it before?”

“Beats me General, but now we don’t have any choice. We can’t divert the few trains we’ll be able to get running to keep their coal and oil bunkers full.”

“If you need to move any heavy stuff, we’ve got dozens of lowboy trailers you can use.”

“Thanks General, that would be the best way to relocate the huge turbogenerators.” Gene looked at the paper, and said “General, what’s around Hailey?

“Just Ketchum and Bellevue, why?”

“Any power plants nearby?

“There’s a Geothermal pilot plant already located there. There are probably several smaller conventional oil or coal burning power plants nearby. Before you worry about all that, you realize that the Snake and Columbia Rivers have over 17 hydroelectric dams on them, and they were producing 2/3 of the Northwest’s power needs? Matter of fact, there’s a Hydroelectric Dam not more than 15 miles Southwest of here on the Snake River. I think it’s called the CJ Strike Power Plant. We tried to get it running without any luck.”

“We’ve got a couple of tricks up our sleeves, We got the Bonneville Dam near Portland up and running, and we got the Grand Coulee Dam in Washington running too.”

“Great, if you get it running and get us hooked up we can shut off the diesel generators we’ve been running, and use the diesel in our trucks and heavy equipment to start farming. I’d appreciate it if you could expedite starting that powerplant.”

“Do you have a working small helicopter that can drop us onto the dam, or a convoy of trucks?”

“I’ve got my personal Blackhawk available, it can carry 11 troops. I’ll send a couple of Air Police with you for security.”

Col. Simpson called back to the Gooney Bird, and Rick was still aboard the Gooney Bird at Bonneville Dam. He told Gen. Newman that their hydro power expert and his team were still at Bonneville Dam, but they were available, and they’d be dispatched ASAP on one of their helicopters to CJ Strike to get it up and running as soon as possible.

“What’s a Gooney Bird?”

“How would you like to fly back with us to Bonneville and get a first-hand look?”

Gen. Newman called his 2nd in command, and told him to mind the fort, he’d be back in a day or so, grabbed his kit bag, and followed Col. Simpson back out to the WIG/SST. Gene showed him how to run everything while they strapped in and locked the cockpit, then he started the huge turbofan engine. Once it was in the green, he told the General to hold on, rotated the nozzles to the hover position, and took off, then snapped the nozzles smartly to the rear, and they quickly accelerated to Mach 1. The General was impressed to say the least. This plane flew at supersonic speeds on the deck, and got better gas mileage than his F-15E Strike Eagles,

plus it was carrying Sidewinders, radar homers, and a 20mm Gatling gun. He was glad that the Eagles didn't have to tangle with it, and they were friendly. An hour later, they slowed to a hover and landed on the biggest craft General Newman had ever seen besides an aircraft carrier. When they stepped out, the Crew Chief saluted, then he prepped the WIG/SST for stowage in the lower hangar bays. They rode the elevator down, and were greeted by the senior SEAL aboard.

"General Newman, I'd like to introduce Master Chief Hernandez with SEAL Team 12 from San Diego."

Chief Hernandez saluted, then shook hands with the General. "You're a long way from home Chief?"

"Our CO relocated the entire Naval Special Warfare Group to Allakaket Alaska for the duration of the emergency, since they're more secure than even Elmendorf, and the entire state was prepped for this emergency."

"I was wondering why you had such high-tech equipment until I remembered that Allakaket is the home of Allakaket Airlines, and Ron Williams was one of the richest men in the United States. Must be nice to have an unlimited budget, and the foreknowledge to prepare."

"General, Ron's son Jake told me that they tried to warn everyone over a year ago, but the White House and Joint Chiefs ignored them."

"Makes sense, Chelsea was not only a Megalomaniac, but an Idiot! I heard that right before the CME hit, they tried to bug out in Marine 1, and it crashed into the Potomac with no survivors."

"Shame a couple of good Marines had to die to get rid of that Witch!"

Chief Hernandez gave General Newman the grand tour, and explained the armaments of the Gooney Bird. General Newman commented that the Gooney Bird was better armed than most Aegis Cruisers. When Chief Newman told him that it could cruise around the world without refueling at 400 knots, he was really impressed!

"If we ever get things back together, the Military should definitely buy some Gooney Birds!"

"General, we'll be lucky to save 50% of the population of the US, and in all probability, the United States as we knew it will cease to exist."

"You're probably right, the death toll in the cities must be approaching 100%, and the only people left will be in small towns or rural areas that are self-sufficient, and far enough from the cities to keep the looters and other dirtbags far enough away."

“General, how much territory can you secure from your base? We’d like to have you secure Southern Idaho and the hydroelectric power plants as well.”

“If you can get that hydroelectric dam up and running, we’ll have enough diesel and jet fuel to control Southern Idaho for 5-10 years, but we’ll need more fuel in 5-10 years.”

“We’ve got 2 refineries in Alaska producing in excess of 100 thousand barrels per day as long as the pipeline keeps delivering crude oil. If you get critical, call us, and we’ll try to ship some diesel and jet fuel in a Gooney Bird for you. Have you managed to get hold of any other military bases in the US?”

“Nope, the satellites are all down.”

“Have you tried using the lower bands?”

“None of those bands can reach anyone else in the other states.”

“We’ve got some radio repeaters and weather balloons is stock. The weather balloons are treated with quantum dots, and can generate enough electricity to keep the batteries powering the repeater charged. If you tether it at 10,000 feet, you should be able to reach the nearby states.”

“We’ve got military radios that can do that, if you can give us one of the balloons and a battery bank, I’m sure we can rig up something that will work on military frequencies.”

“Sounds like a plan General.”

“I’d love to sit here and chat, but I have to get back to my command. Can Col. Simmons give me a lift back in that SST aircraft?”

“We just finished refueling and maintaining it, so it’s ready to go when you are. Here’s a list of frequencies we’re monitoring if you need help. Hopefully our team will have the hydroelectric power up and running in a day or so.”

“Thanks Chief. I really appreciate the help. With the hydro power, we’ll be in a position to help more people. You might want to start up as many hydro plants as possible, at least the ones near population centers.”

“Rick was still shaking his head when he left, muttering something about 1.6 Million Kilowatt hours.”

“I read something once that all the Snake and Columbia river hydroelectric plants together

producing about 1.6 Million kilowatt hours, maybe that's what he meant?"

"Who knows - they're going to be busy for the next couple of years getting all those hydroelectric plants up and running!"

"When Rick's finished with our dam, could you have him stop by my office. We've got tons of manpower, and if the start-up procedure can be worked into SOP, my people could help."

"That sounds like an idea General, and I'm sure Rick would appreciate the help!"

With that, they shook hands, and General Newman marched over to the WIG/SST for a quick flight back to his command.

Chapter 12 - The Circle of Life

While all this was going on in the world, life went on in Allakaket. David and Heather had a second son, Jason who was born 12 months after Michael. Josh and Sheila were the proud parents of 3 healthy boys named Isaac, who had just turned 3; Matthew, who recently celebrated his 1st birthday; and John, the newborn. Sheila was even busier than Josh was, if that was possible. Jake, Josh, Mike and Q were busy almost 60 hours per week organizing the worldwide relief effort. Diane and Sarah were busy homeschooling their broods. Ron and Nancy had cut short their world tour to help with the relief efforts. Several of the older people in Allakaket were in poor health due to their advanced years. Colonel Steve Fellows died after a long and painful struggle with pancreatic cancer. Ron was surprised by the news, since he didn't even know Steve was sick. He talked to Ralph, who told him that Steve wanted it to be a secret because he didn't want anyone feeling sorry for him. Ralph was amazed that Steve died of Natural Causes, since he was pretty sure Steve was going to kill himself when the pain got too great, since Pancreatic Cancer was one of the most painful ways to die. Steve was given a military funeral, and cremated as he had stipulated in his will. He had considerable assets when he died, and his entire estate went to a scholarship fund for Medical Students, nurses, and Paramedics.

1 year later, Josh was visiting with Bear at his cabin. "Josh, I'm glad I lived long enough to see my boys grown up and married, and I know the school is in good hands, even if it's temporarily closed. I've always thought of you as a son, and I just wanted to say how proud of you I am."

"Bear, are you feeling OK?"

"I've been feeling lousy for the last year, but now I know everything will be OK. I spoke to the new preacher, and made my peace with God, so I'm OK. Mary will probably live another 10 years, but I've set aside money to take care of her and the boys, and their families. Hunter isn't in much better shape than I am, but I'm worried that he's still an Agnostic. Would you talk to him after I go, and help him see the light?"

"Sure Bear, but you're not going anywhere."

"Just remember Josh, I've always thought of you as a son - bye!"

No sooner had the words left his mouth, then Bear slumped over unconscious. Josh quickly determined that Bear's heart wasn't beating, but he didn't have his Paramedic kit with him, and the plane was parked by the water over a mile away. He knew Bear wanted to die, so instead of trying CPR, he held his mentor and choked back tears. When he got up, he laid Bear's body flat on the bench they were sitting on, took down the flag that was flying over the Survival School, and laid it over Bear's body. He grabbed his shoe phone and called Tom and Gary, and gave

them the news. They said they'd be right up there. Next Josh called Michael the minister, and told him Bear was dead. He said he'd get back to Josh, he had to get back to his office to locate Bear's will. An hour later, the 007 flew to the cabin and landed. Tom and Gary got out, with their wives and children. Josh didn't want the kids to see their Grandpa like this, so he walked over to Tom and Gary, and told them that Bear's flag-draped body was sitting on the bench, but he didn't think it would be too good of an idea for their little kids to see Bear like this. Tom and Gary brushed Josh aside, and the entire family walked over to where Bear lay. Josh decided that now would be a good time to leave and walked back to his SuperGoose and flew home.

When he landed, he drove up to his Dad's house. His Mom met him at the door. "Mom, is Dad home?"

"Yes Dear, we were just sitting down for dinner. What's up?"

"I need to tell you both something. Ok if I join you in the Dining room?"

Josh followed his Mom into the dining room. "Mom, Dad, you better sit down for this one. Bear just died of a Heart attack."

Ron and Nancy both exclaimed "Oh My God! When did it happen?'

"About an hour ago. I was sitting with Bear on the bench in his garden talking to him when he keeled over dead. My paramedic kit was in the plane almost a mile away, so I knew I couldn't do anything for him, so I just held him. He went peacefully, then I draped his body in the flag and called his sons who flew up there with their families. I left when they got there to give them some privacy to grieve."

Josh looked at Ron, who didn't look so hot, then he slumped over. Josh yelled "Mom - quick run out to my truck and grab my Paramedic Bag, I think Dad just had a heart attack!"

Josh laid his dad flat on his back on the dining room floor, and checked his pulse and respiration. He wasn't breathing, and he couldn't get a pulse. Josh immediately started CPR on his dad. 2 minutes later, his Mom handed him his Paramedic bag. He opened his shoe phone, dialed Ralph's number, and put his mom on the phone while he worked on his Dad. Nancy quickly filled Ralph in while Josh worked. He first set up the portable defibrillator/EEG while he maintained rescue breathing. Once the unit was connected and turned on, the electronic voice warned "Clear, Defibrillating" and Ron's body twitched from the voltage. Josh looked at the EEG trace, and it was looking like the defibrillator did the trick, he had a normal sinus rhythm, and he was breathing again. Josh slipped an Oxygen mask over Ron's face right as Ralph showed up with the Advanced Life Support Ambulance. They got him on a gurney and got him in the back of the van. Ralph told Josh "thanks, I've got it - see you at the ER." and Josh closed the ambulance back door, and it sped off to the ER. Josh gathered everything up,

and drove his Mom to the Hospital, and called Jake on the way so they could all meet there.

5 minutes later, the Williams Clan was waiting in the Waiting Room for news of their father. Ralph walked out and said "Everything's going to be OK. He had a mild heart attack. Evidently the news of Bear dying shocked him so much that his heart started fibrillating because his electrolytes and everything else look OK. He's had angina symptoms but ignored it, and I think the shock caused an anxiety attack that lead to the fibrillation. I'd like to fly him to Anchorage for further tests. I called the airport, and they're readying one of the SuperGoose for a medical flight to Anchorage. I wanted to ride in back with him, and I think that Jake and Josh should fly the plane since we're going to be flying back at night. There's no point in the rest of you flying to Anchorage, he's fine and in no danger at this time."

"Ralph, I want to fly with my Husband!"

Josh wrapped his arm around his Mother and told her "Mom, I'll make sure you get aboard the plane. They should have left some seats in, even with a stretcher case. I'll drive you to the airport, then Jake and I have to fly the plane, you're going to be OK, right?"

"Don't worry about me - just fly the plane."

Josh and Jake took Josh's truck and opened the rear door for their mother, then drove to the airport. Jake was going to be in the pilot's seat since he had more experience in IFR flight conditions than Josh. They got their Dad strapped in and hooked up to the oxygen, while Nancy and Ralph buckled their seatbelts for takeoff. The turbines were already idling when they got there, and an ground crewman closed and locked the air stairs and pulled the chocks. Once they were good to go, Josh called the tower and asked for clearance. Jake made sure all the exterior lights were on including the landing light, and taxied to the runway. The new reinforced concrete runway they installed allowed them a much faster wheeled take-off, so they took advantage of it, and were soon flying at 280 knots to Anchorage. Since it wasn't an emergency, Jake decided to fly at the safer speed of 280 knots instead of the top speed of 350 knots. They landed at the hospital's runway an hour and a half later, and were met by orderlies and the ER attending, who immediately admitted Ron after Ralph filled him in. Once they parked the plane, Jake, Josh and Nancy walked back to the hospital entrance, and Ralph was standing there.

"He's going to be here all night. You might as well go home and get some sleep. The doc agreed to admit him, and perform all the tests in the morning, but he said that Ron looked fine considering."

Nancy said "I want to stay with him, the rest of you can go home and be with your families."

Josh and Jake turned to Ralph and asked him "Are you sure he's out of danger?

“Once you defibrillated him, he was fine. These are routine tests they’re running to determine how much damage was done, and if there’s any blockage.”

Josh and Jake looked at each other, and knew their dad was in good hands. They got their mom settled in Ron’s private hospital room, and kissed her on the cheek. She told them to go on home, and she’d keep them posted, then she stood up and hugged her sons saying “I love you both so much, and I’m proud of you - you both did excellent jobs today, thanks!” Once they broke up, the three of them walked back to the plane and flew home.

The next morning, Michael called Josh and said that he’d read Bear’s Will, and he stipulated he didn’t want a formal funeral, but would be OK if the SEALS or others held a Military burial for him, and buried him on the property of the Survival School right near the flag pole. Josh called the CO of the SEALs who were staying in Allakaket, and he said he’d take care of the arrangements. Later that afternoon, Josh got a call to meet the SEALS at Alaska Survival School in his dress whites. Josh thought it was highly irregular since he was no longer a SEAL, then he was reminded “Once a SEAL, always a SEAL” and went into his closet to take out his uniform. He flew out to the school in the 007 at the appointed time, and there were literally hundreds of SEALS in their dress whites milling about, and a small honor guard carrying M-14's standing at attention near the flag-draped coffin. The CO stepped out of the main lodge building at 1700, faced the flag, and saluted it. The senior Chief present ordered “Fall In” and the SEALS immediately fell into ranks with the officers in front, and enlisted in the rear. Once they were in ranks, the chaplain joined the CO, and marched to the head of the casket and read the words of the Naval burial ceremony. When he finished, the OIC of the Honor Guard ordered “Present Arms” at which point all the SEALS saluted, and the riflemen pointed their guns skyward and fired 3 volleys. When they finished, the bugler played Taps, then the CO and the Chaplain saluted the flag draped coffin, then the OIC carefully folded and removed the flag, and marched over to where Josh stood at attention, made a sharp right face, and presented the flag to Josh. He choked back tears as he accepted the flag for Bear’s widow. When they were finished, they carefully lowered the coffin into the ground, and each SEAL took a shovelful of dirt and filled in the hole. The burial plot was marked by a simple marker. Master Chief “Bear” Simmons USN SEAL (ret) RIP with the SEAL emblem. Once Bear was buried, they retired to the lodge for a wake. Remembering what he did for his Team Leader, Josh stood on a chair with a shot in his hand.

“I’d like to propose a toast to Bear, one of the finest SEALS I’ve ever had the pleasure of knowing. Thanks for believing in me, and training me to be the best SEAL I could be. God Bless and rest easy Bear.” When he finished, he drank the whole shot, to cheers of “here, here”. Later that evening, he knocked on Mary’s cabin door and when she opened the door, he said “Ma’am, My condolences on your loss. I’d like to give you the flag that draped Bear’s coffin.”

Mary looked like she’d been crying, but she stepped forward and accepted the flag, then gave Josh a hug. “Bear’s told me so much about you, and how proud he was of you. The day you

graduated from BUDS was the proudest day of his life. Thanks for the flag, it meant so much to Bear, and I'll keep it in a place of honor."

"Take Care Mary, and God Bless."

"Thanks for everything Josh."

Josh shook Mary's hand, then stepped back, saluted, and she closed the door. Josh marched back to the 007 and got aboard without crying. On the flight home, he needed to frequently wipe tears out of his eyes as he thought about all the good times he had with Bear, and everything his Dad had told him about Bear. He reached into his jacket pocket, extracted his shoe phone, and called his Mom. She told him that Ron was resting comfortably, and was fine. They were going to start running a battery of tests tomorrow, and she'd let them know when they were ready to fly home.

Chapter 13 - Bad News

During their next meeting Jake, Josh, Mike and Q were discussing the plans for the rebuilding of America when the CO of Naval Special Warfare Group One walked in unannounced. "Gentlemen, sorry about the interruption, but Team 7 has just come back from their recon mission of California. I'm afraid I've got bad news and really bad news."

"Please Admiral Robins, don't keep us in suspense."

"Very well Jake, like I said, SEAL Team 7 had just come back from a long-term recon mission, and the results of their mission have convinced me that California is a total write-off. San Onofre and Diablo Canyon, and a couple of other reactors are in the final stages of meltdown, and the areas 100 miles to the east of them are so heavily contaminated that they couldn't get anywhere near them to find out what's going on. All the major cities that weren't affected by the China Syndrome have been burned to the ground by rioting and looting. While the San Joaquin Valley and other parts of California are perfectly capable of producing food, the farmers have all been overrun and killed, and the people who overran them don't know how to farm, and would rather loot and pillage than plow fields. The team made contact with the Nevada State Militia, but they're too busy either securing their borders or caring for the refugees that slipped through their lines to do anything else. None of the Southwestern Desert of Nevada is arable without huge irrigation systems. Since Hoover dam stopped producing power, Clark County, NV has no electricity or running water, so they are either fighting over what food and water is left, starving to death, or relocating as far Northeast as the can in search of food and water. I was considering getting Hoover dam running again, but the majority of the decent people have already left the area, and the remainder are Brigands and criminals preying on travelers. It's my strong advice to write off California, and everything south of US 50 in Nevada until such a time as we can come back there with superior and overpowering force to restart Hoover Dam while driving the Brigands out."

"Admiral, what's the status of the Marine Depot at Barstow?"

"The Marines secured it shortly after the CME, and so far have managed to keep it secure."

"Has anyone made contact with them, are they willing to give or sell supplies for a relief effort?"

"My team leader risked his life flying a small helicopter onto the base, and met with the CO, who was willing to sell supplies for Gold, with the understanding that it was going to a relief effort instead of to privateers. He managed to convince the CO that we were legit, so if we want supplies, we're going to need gold and reliable transport. The depot has been cut off and surrounded, so neither rail nor truck transport is possible."

“Could we get an armed Gooney Bird in there?”

“They’ve got no water to land it on.”

Q spoke up “Admiral, I could retrofit a Gooney bird to land on a paved runway, but it would have to land empty, and limit the load at take-off to 60-80% of max.”

“How much can a Gooney Bird carry?”

“About as much as one of your Container Ships, and then some. It’s fully Ro-Ro capable.”

“Let me get with the CO of the depot, and I’ll get a list of what he has, and what we need.”

With that the Admiral left the meeting, and the discussion turned to the new priorities and re-routing the teams. They were looking at the map, and Josh pointed out that once they finished with Idaho, the southern team could head down Route 93 from Twin Falls to Wells, NV. From there they could head west as far as Winnemucca, since Reno was still a disaster area, then turn around and head to Salt Lake City and the rest of Utah. Once the meeting broke up, Q got with his group of apprentices and brain-stormed making the Gooney bird capable of landing and taking off from a concrete runway. They checked, and found out the 747 only had 4 bogies with 4 wheels each, and 2 wheels on the nosewheel. It was 231 feet long, with a wingspan of 211 feet, and a maximum take-off weight of 910 thousand pounds. The Gooney Bird was almost 600 feet long, the maximum wing span was 500 feet, but the fuselage was only 50 feet wide and very boxy. Q though the 4-wheel bogie was a good idea, and started calculating loads and psi loading factors for the aircraft and runway. He knew what the maximum takeoff weight of the gooney bird was, so extrapolated the number of wheels divided by the maximum weight, and came up with a conservative wheel/weight ratio of 57 thousand pounds per wheel. At that rate, they’d need 20 bogies with 4 wheels each for a maximum take-off weight of 4.5 Million pounds. Instead of making them retractable, he was going to make the landing gear bolt-on and fixed, but with an oleo strut to absorb some of the landing forces. The brakes would have to be electric, since they didn’t have the capacity for hydraulic braking. Installing a hydraulic pump big enough to provide pressure to brakes that would only be used maybe 5 times in the life of the aircraft didn’t make sense.

Admiral Robins and Josh made a list of all the supplies that were getting in short supply in Allakaket, or would really be useful for relief services. They made a wish list, and sent it to the Marine Corps Depot using the Doomsday system since the Team Leader of Team 7 dropped a transceiver off when he was there.

2 days later, they got most of their list approved, with a price of $5 Million in Gold. Since gold was trading at $5,000 per ounce, that would be about 1,000 troy ounces of gold, or 83 pounds. They had several times that much in storage already, so they added the gold to the outgoing

manifest, and as soon as the Gooney Bird was retrofitted, they flew it to a huge 5-mile long dry lake bed that was used for bombers during the Cold War, and an emergency landing site for the Space Shuttle. With the brakes and reversing props, landing wasn't a problem, but take-off could be chancy. Q calculated that they shouldn't take off with more than a 50% fuel load, and 3 million pounds of cargo. The pilots were glad that Q was conservative, and they made it with over a mile of runway left. When it landed back in Anchorage, the mechanics checked everything over, and said the landing gear was good for another 12 landing and take-offs before they needed to change the tires and brakes.

Since they didn't have any security issues in Alaska, and the Marine Corps Depot would eventually be overrun or starved out, the 4 leaders voted to make as many trips and spend as much gold as was needed to get everything they needed out of the depot before it was overrun. Admiral Robbins sent the CO of the Marine Corps Depot, General Russo, his proposal. The general asked if they could relocate his command once they had removed everything of value. Josh and Jake wanted to do it, but Rocky wasn't sure they had the room until Josh suggested they land at Elmendorf which could take their biggest C-5a Galaxy, and then spread his command throughout Alaska. Those that wanted to assist would be inducted into the Alaskan National Guard, and the rest would find work and shelter somewhere in Alaska. Any supplies they needed to store in Allakaket could be loaded aboard C-130's or C-141's which could easily land on the runway at Allakaket. The C-141E could carry around 100 thousand pounds per trip, but Elmendorf only had 2 working C-141's and 3 C-130's, with only the spare parts they had in stock before the Big Bang.

General Russo approved, and started making plans to evacuate the base, transfer anything useful to Alaska, and destroy the rest. Over the 6 months, they converted another Gooney bird and slowly transferred everything useful to Alaska, including several shipments of millions of gallons of Jet and diesel fuel that the Militia could distribute to survivors. When they were finished, the fuel bunkers were emptied. They loaded igloos full of weapons and ammo, all the food and MREs in storage, all the medicine and miscellaneous supplies, and any vehicles that worked or were worth scavenging for parts aboard the Gooney Birds, and the rest of the base was set afire to keep the brigands that surrounded the base from getting anything useful. Elmendorf was busy transferring supplies all over Alaska, including the National Guard base in Fairbanks, Allakaket, and Juneau.

Upon landing at Elmendorf, General Russo returned the bulk of the gold to Allakaket Airlines after giving each of his men 5 ounces of gold in lieu of pay, since they stayed at their posts even though they hadn't been paid since the Big Bang. Most of the Marines joined the Militia, and the rest decided to settle in various parts of Alaska and start raising families and farming. The portable buildings they had in stock at the depot allowed them to build housing for everyone, and build thousands of extra greenhouses to grow food in the more temperate regions of Alaska.

Meanwhile, the Alaskan National Guard was busy restoring power in Northern Idaho, to

complete the Snake River power system. Eventually they made their way to Coeur d'Alene Idaho, which was rumored to be full of Skinheads and Aryan Nation radicals. The leader of the group rebuilding the Snake River system ordered the MBT's to clear out the AN goose-steppers which had taken over the area and were refusing anyone access to the dam so they could restart the power system. God must indeed have a sense of Humor, because the lead tank commander was Sergeant Leon Schwartz, a Black Jew from New Jersey who recently relocated to Alaska to work for AA. He was a tank Sergeant in US Army Reserves, now he was a new tank commander in the Allakaket Militia. He was incensed when he encountered an M -113 with a Nazi swastika blocking road.

"Dang, those Aryan Nation idiots really torque me off! Gunner, Target. I'm going to give this racist honkey 3 seconds to clear the road, then I'm doing a bit of urban renewal, and take out the trash."

Sgt. Schwartz got on the PA "M -113 blocking road, this is your first, last and only warning. Clear the road or face the consequences!"

All he saw through the vision blocks was the panicked white face of the tank commander trying to bring his Ma Deuce to bear. Sgt. Schwartz saw that they didn't take his warning, laid the gun on the center of the M -113, and fired. The 260mm gun was virtually recoil free due to the rail gun technology. A foot-long depleted uranium penetrator lanced through the M -113's armor, and the results were horrific. The hypersonic round practically vaporized the armor of the APC, and caused massive secondary explosions, reducing the M -113 to shrapnel.

Seeing the destroyed APC, Sgt. Schwartz commented "Now that's what I call Urban Renewal!" As they drove further down the road, they were faced with a solid wall of Aryan Nation Brownshirts, wearing Nazi armbands, and acting really tough. Leon saw why when a German Leopard tank appeared behind them.

"Gentlemen, we're here to restore law and order, and get the infrastructure back up. You're in the way, so I'll ask you politely to stand down."

"Listen up you Damn Nigger. We don't want your kind here, so leave."

"You're not being offered a choice, the nearby hydroelectric dam is too valuable, and is needed to power Northern Idaho."

"Get Lost Nigger, We run this part of Idaho and we don't want you here!"

Sgt. Schwartz popped his head out of the turret so they could get a good look at him and kept talking on the PA. "Gentlemen, I'm your worst nightmare, I'm a Jewish Nigger with a Tank.

You've got 1 minute to get that piece of trash off the road and clear out before I clear it for you!"

Several skinheads opened up on the tank with their subguns. Sgt. Schwartz dropped back down in the tank, double-checked that the Leopard was still in their crosshairs, and fired the cannon. The shockwave from firing the hypersonic round knocked the Nazi trash over, and they were just regaining their feet when they looked over their shoulders and saw the Leopard's turret laying on the ground upside down 50 feet from the burning hull of the tank and ran down the street. Some of them had obviously soiled their pants judging by the way they were running.

Sergeant Schwartz and the rest of his tank team spent the rest of the day with their "Urban Renewal Project" and destroyed all the Aryan Nations heavy weapons and fortifications. Next a team of Militia Infantry lead by several SEALS came in and rounded up the troublemakers in the group, and collected all their weapons.

The team leader laid down the law for the Skinheads "You're free to live however you want with these exceptions. 1 - you cannot interfere in any way with the operations of the hydroelectric dam, the power distribution system, or the operators. 2 - you will not cause harm to anyone coming into your area. If for some reason you do not wish to associate with people of color, you can escort them to the edge of your city, or provide them transport to the nearest town. 3 - any violation of these rules will result in the total destruction of your town. 4 - there will be no negotiation of these rules."

The lead skinhead started mouthing off, so the SEAL Team leader pulled his 45 and blew his head off. He turned to the rest of the group and said "Any other objections?" The rest of the group wisely decided to study their shoelaces and keep their mouths shut.

"One last reminder, we can and will overfly your area, and send in ground recon at any time. You will not know we are observing you. There will be no notice if we decide to destroy your town, so act accordingly."

Later that day when Josh heard the report of the pacification of Coeur d'Alene, he was laughing so hard he was having problems breathing. Finally, he showed the report to Jake, who was laughing hysterically as well when he finished.

Chapter 14 - The Rebuilding Accelerates

Rick flew to the CJ Strike Power Plant, and quickly got it up and running. He recorded everything they did on video, and took extensive notes. When he finished, he presented the files to General Newman, who said they would take care of getting the Southern half of the Snake River powerplants up and running. Once Coeur d'Alene was pacified, and the garbage dumped by the skinheads onto the dam structure cleaned up, Rick flew up to the hydroelectric dam, connected the power leads to a generator, and quickly got the hydroelectric power running. The Seal Team leader told the neo-nazis that they could use 30% of the dam's power for their own use, but 70% would be diverted to other areas, and if they messed with the distribution system, they'd be cut off, and if they damaged it, they'd be wiped out. Some of the more levelheaded members of the group realized that even 30% of the dam's capacity was a lot of power, and they could rebuild the town.

Rick got a call from the Fairbanks CO, and he flew up to Whitehorse in the Yukon territory. They were running low on diesel for their generators, and he was available. It took over a month, but they finally got the elderly hydroelectric powerplant running reliably. There were over 20,000 people in Whitehorse, which was the capital of the Yukon Territory in northwestern Canada. With the powerplant running again, they were able to pump water out of the river 24 hours a day, and maxed out the number of greenhouses now that they had the water to irrigate them. Their food shortage would be over as soon as the new crops matured.

With that solved, they concentrated on getting the Geothermal powerplants near Yellowstone up and running. The easiest ones to do first were the pilot plants, so the first one they did was Hailey Idaho. The Idaho National Guard provided the lowboys and the cranes to move the turbogenerators from the nearby oil and coal-fired plants to the geothermal pilot plant, then they installed and connected the turbines to the geothermal steam plant, and quickly increased its capacity from 10MW to over 100MW. The rest of the Idaho National guard was busy relocating critical manufacturers, and any people that wanted to relocate to Hailey and the environs. The Union Pacific Railroad passed just east of the existing town, and a river meandered through the western edge of town. Between the geothermal power, existing farms, river and well water, and an existing town, it would be a perfect relocation area. General Newman met with the city council, who agreed to accept any Idahoan's willing to relocate to Hailey as long as they were willing to work hard and help rebuild. They were grateful for the Guard getting their geothermal power on line, and wound up taking in over 100,000 people between Hailey and the surrounding areas over the next year.

Several manufacturing plants relocated to Hailey, and were soon manufacturing essential products. A large food packing plant was installed which could can all the vegetables, and bag all the wheat and potatoes the farmers could grow. The Mountain Home base diverted enough diesel to Hailey to ensure that they could keep farming for several years, then they got a

replacement shipment from Alaska including several million gallons of Diesel and Kerosene, which would work OK in their turbines. They saved what little JP-5 they had for their jets, since they didn't have a supply of the additives to make Kerosene into jet fuel. General Newman contacted Elmendorf, which had a stockpile of Jet Fuel Additives thanks to the Marines, and they shipped enough to convert their Kerosene into JP-5.

The Marines were busy working in Alaska and Canada getting things running smoothly. Since they were assigned to a depot, they were either Supply or Repair specialists, and the repair specialists were being flown or driven all over the place trying to get various diesel-powered equipment running. Eventually they brute-forced the hybrid powered vehicles and either replaced the hybrid system with a conventional drive train, or replaced or rebuilt the electric motors to make them run. As word spread that they were able to rehabilitate the diesel-electric hybrids, they were in great demand. Several flew down to Mountain home to show their mechanics how to do it. They started writing procedures, which helped greatly. With the excess manpower they were able to rehabilitate the pacified regions more quickly than they planned. They still stayed out of California and the big cities.

Once they were finished in Idaho, they drove/flew down Route 93 to Nevada, where they met a whole new bunch of challenges. They didn't have much in the way of Geothermal or Hydroelectric power available, and the ranches that were still working were relying on 1800's level technology to get things done. Horseback, wagon or shank's mare were the only means of transportation once the fuel ran out. The population had relocated away from towns that couldn't support them to ranches scattered all over the place. Every rancher had taken on at least 50 hired hands to help with the chores. They were living in primitive quarters, and were glad to have food and water. Several ranchers commented that if they could get some Solar power generators running, they'd have enough electricity. One rancher commented that NV had more sun than anything else, and Rick remembered the huge heliostat at 4 corners near Barstow California. It produced hundreds of megawatts of power by using solar energy to convert water to steam. If he could get some highly polished sheet metal, they could build simple trough-style heliostats and small turbogenerators on each ranch to give them some power. Bigger units could be built where they wanted to manufacture stuff close to the railroad tracks. If they could build some solar panels and inverters, or even use the 12vdc power directly, they could eventually ramp up the level of technology and productivity all over NV. Rick gave a set of chips to the Elko County Commissioners, who seemed to be in charge, and gave them his idea for manufacturing heliostats, turbines, solar panels, and batteries or inverters to power a manufacturing base.

They traveled east to Utah, and were pleasantly surprised that Salt Lake City was a thriving town. Shortly after the disaster, the townspeople voted out the "Whinny-ass Liberals" and asked the Mormon Church to take over. They quickly reverted to Frontier Justice, and any looters who weren't shot on sight were quickly and unceremoniously hung at a huge gallows across the street from City Hall. One of the senior SEALs was a Mormon, and was able to meet

with the Bishops. Evidently the Mormons were already self-sufficient, all they did was revert to 1800's technology, and start growing food as soon as the power went out. With their year of stored food, no one who was willing to work starved. Those who didn't want to work were asked to leave. Those who couldn't work were taken care of, including the elderly and infirm. Everyone was given suitable work, even people who thought they were "retired" soon found themselves working in Church day care centers so that the children's mothers could work. In the outlying areas, the ranches and farms quickly reverted to 1800's technology. The only thing Utah wanted or needed from them was some way to get the railroads running again. They were willing to revert to steam-powered locomotives until someone noticed that all their locomotives were GE gas turbines from the correct date range, and they swapped the CPU's and soon had the locomotives running. With Nevada and Utah taken care of, they were recalled to Alaska to resupply, rest, and get their new assignments.

With the Marines and the Idaho National Guard helping out, they decided to change the program, and start setting up enclaves all over the Western US. They would relocate supply depots from abandoned areas to the enclaves, and leave a security force behind to control the weapons needed for the defense of the enclaves. Elmendorf was getting too full, and they really couldn't use all the heavy weapons that were stored at the Barstow depot. Remembering what General Newman told them, Josh started searching the Global Security Site data for the locations of airbases that would have a large quantity of heavy cargo planes like C-5a and C-17's. Checking first in the Western US, he located Davis-Monthan AFB in AZ. Digging deeper, he realized this was one of the Air Force's Boneyards, and might have flyable heavy-lift aircraft, or parts to scavenge that could make other aircraft flyable. He contacted the CO of Elmendorf and asked him if he could detail some mechanics to a mission to Davis-Monthan to see if they could locate some flyable heavy-lift aircraft, or parts needed to make his craft flyable.

The CO's response was "Heck yeah!" Josh suggested they use the C-5a since it wasn't being currently used, and send a team of heavy-lift qualified pilots and mechanics to DM with a heavy escort of 4 of their rail-gun equipped MBTs. He said that they would only need 2, and they'd need some transport to run parts around. Josh made a list of what they'd need including food, supplies, generators, tools, etc., then cleared it with Jake and Mike, who both agreed that if they could get some more C-5as or C-7's flying, it would be worth it, since the Gooney Birds were not designed for landing on pavement, and were stressing their landing gear between landing on pavement, then dragging the gear through salt water when they landed back in Anchorage. They were replacing gear faster than they thought they were going to have to, and if it weren't an emergency, they wouldn't do it at all!

2 weeks later, the C-5a landed at Davis-Monthan AFB, and they were very discouraged by what they saw. The base had been deserted, and all flying aircraft were flown elsewhere. They were glad to see that they must have left too quickly to take everything, and they still had the use of their machine shops. Since they were in metal buildings, and the electronics were buried deep

in the machines, most of the machine lathes worked fine. They made a note to take them with them when they left. A few of their machines were CNC's, and the head mechanic definitely wanted to take them when they left. A group of "scavengers" scoured the boneyard, and located promising heavy lift aircraft that still had everything on board, and once they got a tug running, they were able to tow them to the shops, where the mechanics swarmed over the aircraft, checking everything. Most of these aircraft were older planes, and weren't fly by wire, which meant that even if the avionics suite was toast, they could still fly. Over the next months, they got 5 more C-5a's working, and 7 C-17 Globemasters. The C-17 had a unrefueled range of over 5,000nm with a payload of 130,000 pounds. The C-5a had double the payload at 216,000 pounds, but half the range at 2900nm fully loaded. They could just make the trip to Anchorage at max load from Tucson, AZ. When they finished, the CO of Elmendorf asked if they could stay there a while, scavenge some parts, and try and get some C-130's flying since they were short of them. They found a bunch in the boneyard, and managed to get 6 of them in flyable condition.

When they were looking around more, they spotted thousands of C-130's that weren't worth fixing, then they remembered that they needed electric power. 1/3 of the C-130's had engines, and maybe 80% could be made to work. All they needed now was a bunch of generator heads to couple to the propellor shaft. Since it was already turning a huge prop, they were geared down sufficiently to run a 300KW generator. Once they did the math, they'd know exactly. For now, they started collecting the C-130 turboprops, and sorting them between the ones that were still flyable with parts or repairs, and the ones that should be relegated to running generators. They called the CO at Elmendorf and said they were going to be in Tucson for a while. When they told him why - he told them to stay as long as they had to. He had some useable generator heads about the right size, but the motors were fried. He was pretty sure if they looked around, they'd find a bunch there as well. They took 2 of the most promising turboprops to the machine shop, mated them with generator heads, and were able to shut off their diesel generators to save them for an emergency. The 2 generators put out 600KW between the 2 of them, and the waste heat went for hot water, and other projects where they needed to heat something up.

While they were scavenging the boneyard looking for turboprops and generator heads, they spotted a KC-130 in flyable condition, and towed it to the repair shop. It still had all it's refueling equipment, including the spare fuel tanks, drogues, and the probe. One of the Mechanics quipped that it was bi-sexual, and the Sergeant gave him a dirty look, so he explained that Navy refuellers usually used drogues, and the Air Force used Probes. This plane had 2 underwing pods with drogues and a flying probe, so it was bisexual, since it could fuel both Navy and Air Force aircraft. Further on, they saw what looked like a pair of AC-130H gunships. They had to get them flying, just for the "cool" factor! Both planes were stripped of the 20mm Vulcan Gatling guns, but had their 40mm twin Bofors and 105mm Howitzers still mounted.

They towed both back the repair shop, and told the mechanics that they should try and get both of them flying, and if they could install a couple of 20mm Vulcan guns before they left, they'd be grateful. The Scavengers had a couple more items on their list now - get some Vulcan guns! They knew that the sight of an AC-130 flying overhead would convince anyone without air-defense missiles to quickly surrender! They were dismayed at all the aircraft they saw there collecting dust. Perfectly good planes were relegated to the boneyard because some Congressman wanted to buy some new planes in a Pork Barrel plan to bring jobs to their district, instead of doing what was best for the country. None of that mattered much now. They had no current need for 2/3 of the aircraft sitting there, but they knew the reason the Air Force had selected the Arizona desert for the boneyard. It was so dry here that the planes rusted slowly, if at all, and they'd probably be here 20-50 years from now.

When they were through cruising the boneyard, they started surveying the weapons storage igloos. They located so much useful stuff, that they decided to start flying what they had to Elmendorf, and return for more trips. They found and entire igloo full of various caliber Gatling guns from 7.62 to 30mm, and took them all. The next igloo contained all the ammo for the Gatling guns, so they took that too. They felt like kids in a candy store - every igloo was like opening a Christmas present. Between the C-5a's and C-117's, it took weeks just to unload the igloos. Elmendorf was quickly becoming overloaded, but they had to move it someplace secure, since they didn't want some MZB's to get hold of the guns or ammo.

They called Mountain Home and asked the CO if he wanted any weapons or Ammo, or flying aircraft. He suggested landing a cargo plane at Mountain Home on the way back from Elmendorf, and they'd fly pilots and mechanics to DM to select what they could use. They wound up with 2 squadrons worth of FA-18E's, 2 more of A-10 Warthogs with their GAU-8/A cannon, several helicopters including Apaches and Kiowa Warriors, and several Blackhawks. It took them a while to put them all together, but they finally got all their aircraft in flying condition, and they asked if they could borrow the KC-130 to refuel them in the air. They checked out the KC-130, filled all it's tanks, then took off. They made sure they could refuel while they were still within bingo range of DM, then turned northwest to Mountain Home. 2 days later, the KC-130 flew back with over half of their pilots, and instructions to take any useful planes that would fly. They concentrated on the turboprops and older jets, and soon had more planes than Mountain Home could use in the near future. The mechanics showed them the C-130 generators, and the Mountain Home mechanics helped them build a dozen, and brought them back with them.

Since the C-130's had enough range lightly loaded (20,000 pounds) to reach Anchorage unrefueled, they loaded spare parts aboard each airplane before they took off. They loaded all the planes to their max safe load for the trip to Anchorage, and flew the flight crews back and forth until all the aircraft and all the parts, tools, and equipment they would need were at Elmendorf. The C-5a's flew back and forth with scrap aluminum, steel, copper, titanium, and any other metals they needed when they located the piles of scrap metal in the boneyard. They

knew it was easier to recast metal into parts they needed than to make it from raw materials. The boneyard was a goldmine between parts, scrap and flyable airframes. Most of the aircraft they had there they didn't need right now, but they might later. It took several years, but finally the mechanics were finished, and went home to Elmendorf.

While they were busy, the construction and rehabilitation crews were busy too. They had finished Arizona, Colorado, and New Mexico, and Montana and Wyoming up north. They were eager to get East of the Rockies to the Breadbasket, and the bulk of the US Manufacturing capabilities.

Chapter 15 - The Other side of the Mountain

After several weeks to re-supply the Gooney Birds, and re-arm what few munitions they expended, the team leaders met with Jake, Josh, and Mike to figure out what to do next. Eventually they decided that they'd keep 2 Gooney Bird teams like before, with the one that took care of Montana and Wyoming using those states as a base of operations for projects in North and South Dakota, Nebraska, Iowa, and points east, stopping at the Mississippi River for now. The other team would head south through New Mexico to Texas, Oklahoma and Kansas if they had time. Both teams were to maintain radio contact, and return after 1 year regardless, or sooner if necessary. Before they left, the leader of the northern group checked the databases compiled from the internet before it crashed during the Big Bang, and was dismayed to learn that North Dakota only had 1 hydroelectric plant, and a half-dozen coal-fired plants. He hoped the coal supply was close to the plants, or they would be out of luck.

2 days later, they left, and the Northern contingent arrived in Great Falls, Montana. Due to the 5 small hydroelectric dams and coal deposits, it was an ideal place to relocate essential manufacturing plants, so they established an enclave there based on townspeople and survivors who were willing to work and be relocated to Great Falls. When they came back 1 year later, everything was the way they had left it. They were mining coal for use in coal-fired power plants and storing it for now. Even though it was so far north, they were able to grow produce at least 6 months out of the year due to the greenhouse materials they were given last year.

A WIG/SST and a high-speed hover/WIG were dispatched to North Dakota, and as soon as they got within radar range of Minot, ND, the SST's radar warning horn went off. Col. Mitch "Hawkeye" Barnes flipped his radio to guard and heard "Low flying aircraft to our Southwest, please ID and state your intentions."

Hawkeye replied "This is Alaska National Guard Recon flight. We wish to make contact with your CO. We're not hostile, and we'd appreciate you turning off your targeting radar."

The radar warning horn went quiet, so Mitch took that as a good sign.

"We're from Alaska, and we're trying to get the rest of the country back on it's feet. So far we've helped parts of Washington, Oregon, Idaho, Nevada, Utah, Colorado, Arizona, New Mexico, Montana and Wyoming."

"Sounds like you guys have been busy. We've managed to keep things stabilized around the base, but we would appreciate any help you can offer. Maintain current speed and heading, and we'll escort you to base."

"Ok, but make sure you don't target our backup. They've got much heavier armaments and

itchy trigger fingers. They're about 15 minutes behind us."

"I was just about to ask you about that huge radar contact moving at 400 knots behind you - what the heck is it?"

"It's a hovercraft with Wing-in Ground effect capablity. He's flying at about his top speed to try and keep up, and we're loafing along at 600 knots so he can keep up."

The lead pilot of the F-16 that was flying the intercept finally got a visual of the WIG/SST.

"What the heck are you guys flying?"

"It's a combination of a WIG and a supersonic VSTOL aircraft. We can't fly very high, not much out of ground effect without hovering, but I've had this little baby up to Mach 1.6, and I've got 4 times the range you're little F-16 has."

"Sweet, I can't wait to get you guys on the ground so I can see your aircraft. Ok, you need to make contact with the tower."

"Minot tower, this is Alaska National Guard #1 requesting permission to land. We're VSTOL capable if you need a runway for our escorts."

"Thanks ANG. Maintain your current heading, you're straight in for 27L, and the helipad is just to the north of it. You should have the runway in sight."

"Roger, runway in sight, diverting to helipad - runway is clear."

Mitch swung the thrust vectoring nozzle from full aft to 15 degrees forward, slowing the craft and establishing a hover right over the helipad. They deployed their landing gear, and touched down with a soft bump, and shut down the engines. They got the canopy open in time to see the 2 F-16's on final for landing. They climbed out of the cockpit, and a Crew Chief was pushing a ladder to their craft to make it easy for them. Once they were on the ground, the Crew Chief saluted the pilot and Co-pilot, then they saluted the CO, General Mike Sharp. He was staring openmouthed as the WIG/hovercraft came into view, floated over the perimeter fence, and landed next to the WIG/SST. He could tell these guys were loaded for bear with a pair of 40mm Bofors cannons mounted on a turret, and a bunch of missiles under the wings. He checked the WIG/SST, and it had a 20mm Gatling gun, and a bunch of missiles too.

"You guys expecting trouble?"

"No Sir, we're just being good Boy Scouts. We're a long way from home, and have to be able to defend ourselves."

“Ok, let’s meet in the conference room next door.”

The 4 pilots followed the General, and as soon as they were seated and sipping on their coffee, they gave the general a sitrep. He shook his head. He knew it was probably bad, but didn’t realize the casualties would be this bad. He had most of the state of North Dakota under control, except the “big cities” which had burned to the ground before he was able to help. They had an intact base, with all the support personnel, cargo, heavy lift and everything they would need. Since Minot AFB was a SAC base, all the hangars were EMP hardened, and the storage was underground for EMP and nuclear protection. The only vehicles and planes that were damaged when the EMP hit were the alert aircraft, and the vehicles that weren’t in shelters. They got some warning when the Base Meteorologist came running into his office, and they sounded the alert. They had EMP defensive procedures to follow, and they saved 3/4 of his command. He had no outside supply, and was getting critically short of some supplies. They had torn up several right-of-ways and started planting seeds when they realized that they weren’t getting any more shipments of supplies.

“General, where’s the nearest supply depot, regardless of Service?”

“Bismarck has a huge National Guard headquarters.”

“Maybe you guys could work out a trade?”

“I haven’t been able to raise him on the radio.”

“How would you like to take a trip in the WIG/SST? We could be there in less than half an hour, and you could ask him face to face, then we might be able to set up comms between your two commands.”

“Sounds like a plan, let me get my flight gear, and we’ll get going.”

“Uh General, the reason the big hovercraft came with us is they have about 100 tons of supplies we got from the USMC depot in Barstow. We’ve got food and medicine, plus some non-hybrid seeds and a set of data chips with some stuff you might be able to use.”

“Great, I’ll have my men unload whatever you want to leave while we’re flying to Bismark. By the way, thanks for everything!”

“Hopefully you’ve got a big supply of JP-5. We need to fill up the hovercraft and the SST.”

“Sure, we’re sitting on several million gallons of JP-5 and diesel fuel - wouldn’t look too good if the BUFFS ran out of fuel in the middle of a war!”

10 minutes later, General Sharp had his flight suit on over his uniform, and had his flight gear and helmet in his flight bag. He was ready to go, so Col. Barnes climbed in the left seat, while a Crew chief helped the general. Once they were all secured, Col. Barnes closed the cockpit, and started the big turbofan. He did a quick preflight, and taxied over to the fuel depot. He shut down while they were filling the tanks for safety, then once they were secure, he restarted the engines, and got the bearing and distance to Bismark from the general. It was just over 100 miles, so Mitch didn't go supersonic, but kept it to the most efficient cruise of 600 knots. They were over the base 10 minutes later, and General Sharp called the tower on Guard.

They orbited the field until General Banks verified that it really was his friend Squeaky. He looked at Col. Barnes, who understood if he breathed a word of that nickname to anyone, he'd be in deep kimchee. They landed next to General Banks' Blackhawk, and the two generals got caught up. Col Barnes saluted, then General Sharp introduced him. The 3 of them sat down to talk, and worked out a mutually beneficial agreement. General Banks was short medical people and supplies, and Minot was short on food and basic supplies that the NG depot had tons of. Once they were finished, they flew back to Minot and the hovercraft was just finishing unloading and refueling. Mitch dropped the general off at his helipad, his co-pilot climbed back in, and they taxied to the fuel farm to top off. Once they were ready to go, the Hovercraft said they were ready as well, and they flew back to Montana.

The other team had set up a base of operations at Kirtland and Holloman AFB in New Mexico, since both Air Force Bases were secure, and had long runways suitable for the C-5a and C-117 to land and take off with full loads. Take-off had to be limited during the summer due to density altitude, but they could land almost anytime. The base personnel were already involved in rebuilding the New Mexico infrastructure when they arrived almost a year ago. Now they were branching out and leaping forward to West Texas. The CO's of both bases warned them that Texas would be a tough job since it was so huge, didn't have hardly any hydroelectric powerplants, and most of the oil had already been pumped out of the ground decades ago. They didn't know about the geothermal situation, but they assigned a couple of technicians to review the data they had provided, and check. The Technicians came back with very disappointing news - there were no significant geothermal sites East of the Rockies, all the way to the Mississippi. Any power they would be generating would be from hydroelectric or coal-fired plants, since there was no geothermal available. Wind power or solar should be looked into.

Their report made it's way up to Allakaket, and Q suggested at their next meeting that they start manufacturing Quantum Dot photovoltaic paint and using it to roof buildings, paint cars, and anything else they could think of where they had a surface exposed to the sun. Q told Jake that his apprentices had located plans to build a modern version of Edison's Nickel-Iron battery that used a nickel-iron lightweight matrix that weighed 1/3 the same as a lead-acid battery, tolerated 80% discharges with no ill effect, and lasted 50-60 years. He knew there were nickel and iron deposits in the Midwest, or they could scavenge the materials from the Arizona Boneyard. If they looked really carefully, they might find storage warehouses full of them since they were

using them in the hybrid vehicles, forklifts, and 18-wheelers.

The database listed hundreds of warehouses in all the states they already controlled, so Q printed up instructions for making the Quantum dot paint, and how to apply it, and connect a charge controller and battery bank to an inverter to run a house, or a bank of inverters to run a business utilizing a grid intertie so the surplus power generated could help power smaller businesses. The communities quickly formed energy co-ops that made sure that all the debits and credits balanced at the end of the year, or the people with the debits paid the people with the credits. Between the quantum dot paint, wind turbines in windy areas, and what hydroelectric power existed in areas, they were quickly able to get the power back on at least in local areas. With the QD paint, they didn't really need the interstate power grid, and they were building inverters, controllers and batteries as fast as they could. Oil for diesel and jet fuel was still a priority, but they had to get the power back on in as many states as fast as possible to stop the downward slide into anarchy.

Jake, Josh, Mike and Ron were pleased at the pace of reconstruction now that the US military had gotten into the act. Everything west of the Mississippi was either abandoned or firmly under control. The people were much better off under the new system, which left most decisions to local control. The survivors had adopted a much simpler lifestyle without the pressure to buy the latest and greatest toy your neighbor just bought, or the mindlessness of Televison or movies. People worked 12 hours per day and slept soundly for the first time in their lives. Every band of brigands was destroyed in place if they refused the first offer to surrender. Looters and murderers that made it into custody were given a short and simple trial and hung from the community gallows. Suddenly all over America, criminals realized that crime didn't pay, and they weren't taking any excuses for their behavior. They started settling down and becoming farmers and decent citizens, or they died when citizen militias or the military caught up with them.

The South was in pretty good shape except for the cities, which were just about totally devastated. They were growing their own food, and once they had reverted to a more agrarian society and moved away from the cities, things had settled down quickly. Farmers stopped raising cash crops, and started raising what they could sell or trade locally. They all produced huge gardens, and were multi-cropping since they didn't have their fancy combines to harvest 100 acres of soybeans per day. Draft horses were at a premium, and even quarter horses, mules and oxen were being utilized. When necessary, they reverted to human labor to work the fields. The good news was no one starved in the rural south. The cities were almost a total loss.

Until now, they hadn't bothered with anything east of the Mississippi, and the debate raged for days about whether they even should. Finally heavily armed scouts were sent in, and discovered that the big cities were burnt to the ground and ran by huge gangs of warlords, and the suburbs were stripped bare by roving bands of predators. When word got back, they decided to use the BUFFs stationed at Minot AFB to destroy NYC and make an example of it, since it was the most thoroughly destroyed, and centrally located so the word would spread. The next day, a flight of 6 BUFFs flew over NYC, and dropped their load of 500 pound bombs, then the last B-52 dropped leaflet bombs telling the warlords that they faced destruction from the air unless they immediately surrendered, and provided instructions for surrender. Within weeks, there were reports of warlords surrendering en masse, and a number of hangings when the leaders refused to surrender, and their foot soldiers rebelled and hung them, then surrendered. When news filtered back to Allakaket, the 3 honchos decided they needed to meet with the military leadership and discuss how to safely rehabilitate the East coast. They suggested a 3-pronged "invasion" for lack of a better word. The armed Gooney birds would come in from the sea, the Army would travel overland, and the Air Force bombers would fly over in a show of force right as the hovercraft came within sight of land. The show of overwhelming force should stop any attempt at an attack dead in the water. Once ashore, they'd meet with any leadership, and start rebuilding the East coast. They were going to abandon the cities and relocate everyone in much more suitable areas for growing food in the Midwest.

Quantum Dots Article:
http://www.findarticles.com/p/articles/mi_m1200/is_25_157/ai_63090658

Chapter 16 - "Heck No, We Won't Go!"

For some stupid reason, the survivors of Boston, MA not only wanted to stay where they were, but they insisted that the new "government" take care of them. When Ron heard this, he wondered if any relatives of the Kerry's or Kennedy's were among them, because it sounded just like them. "The Government will take care of you." was their mantra, and evidently these people, who had survived a TEOTWAWKI - level natural disaster were screaming for FEMA to come in and take care of them. When they were told that FEMA no longer existed, and they would have to relocate, they somehow found cardboard placards and sticks, and wrote some vaguely remembered Anti-war slogans, and were protesting in The Commons. Ron was laughing so hard that Nancy was worried about his heart. Finally he said "If they don't want to go - screw them - we're out of there!" He called the relocation team, who packed up, took all their supplies with them, and drove their hovercraft back to the Gooney Bird. The protesters stood on the shore with a look of shock on their faces as the hovercraft disappeared over the horizon.

The next day, they landed in Martha's Vineyard, and were surprised at the lack of people until they made it to the Kennedy Compound. The smell of barbequed pork was making their mouths water, until they got closer and saw a pile of bones and protest signs saying "Save the Whales" and "Earth First". Fearing the worst, they masked up, and locked and loaded. As they climbed the 8-foot concrete fence, they greeted by the sight of a huge pit barbeque with a spit, and an empty 55-gallon vat of barbeque sauce. Finally they ran into a huge immensely fat man with barbeque sauce on his fingers eyeing them like a piece of Prime Rib. The Team leader shot him in the forehead with his .45 and searched the rest of the house. Strangely, the rest of the house was empty. They located a freshly killed victim with a ice climbing pick buried in his head. Jerry remembered a line from Rocky Horror Picture Show, and said "Frankie, that's no way to pick your friends!" and the rest of the team who had seen the movie laughed hysterically while everyone else wondered what the heck was so funny about a guy with a climbing pick in the back of his head. After they wired the compound to blow, they got back aboard the hovercraft, and were 2 miles out to sea when Martha's Vineyard blew sky high. Evidently that Natural Gas line they located still had gas in it! When the shock wave reached them seconds later, they were grateful they were already several miles out to sea when the explosion went off. Jerry was wondering out loud why anyone would resort to Cannibalism in a little over 2 years. The team leader told him "They weren't that far from Cannibalism to start with."

They located and ignored several bunches of loonies from Boston to Maine. Finally in Vermont and New Hampshire, they ran into thousands of well-prepared people who called themselves "The Frugal Squirrels." Their beloved leader John had died years ago, but his son Jeremy was doing a good job of filling his dad's shoes. They were so well prepped that they told the people who came to help "Thanks, but no thanks, but we're more than willing to trade for stuff. We've got listening posts set up, and we'll call you on your military radio if we need

anything."

With that out of the way, the Gooney Birds returned to Allakaket. By now the ionosphere was in good enough shape so they could talk on the long-range radios again, and had set up a nationwide communications system. Over the next couple of years, they were discussing what kind of government they wanted, and the consensus was they didn't want any central government at all. There were no external threats, since everyone was too busy trying to survive to worry about attacking the remains of the US across the Atlantic or Pacific. Canada and Mexico were in a similar situation, and for once the flow of illegal aliens had reversed when most Mexican illegals realized they might be better off in Mexico, or just wanted to get back to their families.

When everyone had recuperated, they held a big meeting about what to do next. Jake pointed out that a large portion of Washington and California was still in the dark, and they needed to do a fresh recon and find out what was going on there. General Newman offered the use of Mountain Home AFB as a rear staging area, and Davis-Monthan AFB in Tucson, AZ as a forward base, since they both had huge runways that could handle anything they had. Rocky dispatched a team to check out Washington State, and another to check out Northern and Central California. They came back with mixed news. The warlords were still in charge of the big cities, but their gangs were much smaller, and with their superior firepower and manpower, should be not too hard to pacify. They debated for 2 weeks about how to pacify the cities. Most of them wanted to try the same tactic they did in NYC, and the Marines wanted to try an amphibious and air assault. The rest of them vetoed that idea, since half the Marines under their command were supply clerks and mechanics, not front-line Marines. Besides, these were US citizens they were up against, and they didn't want them slaughtered wholesale unless it was absolutely necessary.

When the second SEAL team came back, he told them that LA was a ghost town, and San Diego was down to small pockets of survivors without any organized gangs. Josh wondered where the gangs went, and the SEAL team leader didn't have any good answers. All he knew was that they weren't in LA or San Diego. That wasn't good news, because that left Northern or Central California, or the deserts between NV and CA, or CA and AZ. He didn't see how a large gang could survive in the desert, which meant that they were probably hiding somewhere in Northern or Central California. He dispatched a pair of WIG/SST's to make contact with the Nevada State Militia and find out if they knew anything. 2 days later, the WIG/SST's came back with good news. The stupid gangs had tried to cross into Nevada just East of Barstow, CA. They drove right into a Nevada State Militia ambush made up of Tanks, APC's, helicopters, anti-tank rockets, artillery, and anything else that could be brought to bear. Over 10,000 dirtbags were reduced to ink stains on the concrete of I-15. It wasn't fair, but war never is. They got a big assist from the US NAVY via NAS Fallon, and the Air National Guard from McCarran International. The fighter-bombers dropped pairs of CBU's on both sides of I-15, decimating 10-mile long convoy of the road-bound invaders. With the news of the demise of

the dirtbags, they decided that they should try to rehabilitate as much of California and Nevada as possible.

With the decimation of the gangs, and the lack of population in Southern California, they decided to concentrate on the San Joaquin Valley and the rest of inland Central California. San Francisco didn't have anything to offer, just a bunch of mouths to feed, but the Central valley was the breadbasket of the West, and grew most of the fruits and vegetables eaten in the US for decades. Hopefully they'd be able to locate some of the original farmers, and help them get back up to speed. Rocky suggested an aggressive approach, since they weren't sure wether the MZB's were still in charge, and a show of force might convince them to surrender, or evacuate. He wanted them to send 2 MBT's backed by a WIG/hovercraft into the towns, with armed choppers flying top cover and scouting in advance. Josh told them that they needed to get power and water into the valley before they could grow anything, and they'd probably be out of diesel fuel as well. They could fly in diesel as soon as the situation was stable, either using a runway, or flying it in smaller quantities via the WIG/hovercraft. They mapped out their strategy to traverse the entire length of the San Joaquin Valley, and decided to land 4 Gooney Birds in the San Francisco Bay if it were safe near Vallejo, CA. They would disembark 8armed WIG/hovercraft carrying 2 MBT's each, and 2 squads of heavily armed infantrymen to accompany them from each hovercraft. They would then proceed overland toward Sacramento, and see how things were. If they ran into trouble they couldn't handle, the Gooney Birds had cruise missiles and Slammers to attack any targets on land that the WIG/HC or the MBT couldn't handle.

They loaded up, and flew in trail formation from Alaska to the opening of San Francisco Bay. They flew over the Golden Gate bridge, and landed in the bay past Alcatraz, and coasted to within 2 miles of the coast in San Pablo Bay near Vallejo. They dropped their rear ramps, disembarked the WIG/HC's, and left their engines turning in case they needed to make a quick exit. While the hovercraft were exiting the rear, the helicopters were busy on the "flight deck" as 2 Kiowa Warriors and 4 armed Apache II's per Gooney Bird were lifted to the flight deck, and had the rotors deployed and locked. Once they were ready, they lifted off and formed up into squadrons. The WIG/HC's weren't far behind, and everyone was in radio contact.

"Bird Dog to Eagle Squadron. Feet Dry, so far so good."

The pilot of the lead WIG breathed a sigh of relief as the first Kiowa scout copter indicated that he had made landfall, and everything was OK. As the rest of the Kiowas started crossing the beach, they were all reporting the same thing. Vallejo was virtually deserted, and there was no organized activity. Finally the WIGs made landfall, and used their wings to climb off the water, and fly for a short distance until they reached the Interstate. They overflew Mare Island and downtown Vallejo, then turned Northeast to follow Interstate 80. There were too many damaged and abandoned cars to fly right above the roadway, so they climbed to a much safer 150 feet, and followed the roadway to Sacramento. They only had to travel 50 miles so they

flew slowly to allow the helicopters to stay in front and scout. From the Internet database that Q had copied, they knew the Governor's mansion was at 1526 H St in downtown Sacramento, just a few blocks from the Capitol buildings. Bird Dog came on the air, and advised the WIGs that they could set down in Capitol park, drop off their MBT's, then hover off to clear the landing area. It took a while to get everyone unloaded, and finally one of the Kiowas heard a radio transmission.

"California State Security - why are you landing on the Park Lawn?"

Being a total Smart-Ass, Joey keyed his mike, and said in his best Alien Voice he said "We're here to speak to your leader."

The operator cracked up, then said "OK, who the heck are you?"

"Alaska National Guard unit 2. We're here to speak to the Governor if he's available. We've been busy trying to get the US back on it's feet, and we might be able to help."

"Governor Cortez is busy."

"Fine, tell him we were headed to the San Joaquin Valley to try and get the farms started again."

"Good luck, a couple of warlords are running that area. Even we don't mess with them!"

"What happened to the California National Guard?"

"They've all been federalized and sent to the East Coast the last I heard."

"I've got some bad news for you - We've already been there, and didn't see any National Guard Units. They probably got chewed up by rioters and looters."

"I think you're probably right. The President wouldn't let them take any lethal weapons when she nationalized them."

"And they still went - Damn, they must have been pretty dumb!"

"No just following orders, anyway, I'll tell the Governor you were here."

"If he needs us for anything, we always monitor Guard."

"Ok, and thanks for not smashing any of the buildings."

"Ok, guys, load up, we're headed to Modesto. Team 7 said the first warlord we need to take out

has his headquarters in Modesto. All the slaves are living in the surrounding farmland, so Modesto is a free-fire zone. Anyone openly armed, or any armor or heavy weapons are to be considered hostile. You may engage at will."

Just outside of Modesto, the WIG/HC's disgorged 2 MBT's each, and they took the lead of the "tank formation". The WIG's assumed anti-air defense and turned on their radar. The helicopters broke into squadrons, with the armed Kiowa Warriors acting as scouts and bird dogs for the heavily armed Apache Longbow II helicopters. The Advanced Attack/Scout variant of the Kiowa Warrior (OH-58G) carried 2 7-round 2.75-in rocket pods carrying either multi-mission Hydra unguided rockets or the new 2.75-in LCPK rocket with a new laser seeker nose and a guidance system for use in MOUT or close-support missions. The low-cost precision kill rocket was built as a bridge between the 2.75 inch unguided Hydra rocket, and the very costly Hellfire missile. It's smaller warhead was perfect for soft targets and was 1/10th the cost of the Hellfire, but still gave the Kiowa a 1-shot 1-kill capablity, increasing their number of kill stores. With 2 7-round pods mounted on their weapons stations, that gave them up to 14 discrete soft targets per reload. The 20mm chain gun mounted in the chin turret gave it even more punch.

Back in 2020, due to the rejection of the Comanche program, the US Army approached Congress with an upgrade to the OH-58D Kiowa Warrior that used most of the existing helicopter, and brought the 1990's technology up to current avionics and turbine technology. The new turbine increased the maximum payload by almost 30%. It was still a 2-seater observation helicopter, but now it carried enough weapons to safely and successfully engage anything less than a Main Battle Tank. The tail rotor was replaced with the Comanche's NOTAR system which reduced the noise signature of the helicopter, and reduced the risk of the tail rotor striking trees, etc. when the pilot was observing enemy forces. The Advanced Mast Mounted Sensor system incorporated the Longbow radar plus the day/night visual, thermal sights, and the laser designator/range finder. The new OH-58G was only slightly bigger than it's predecessor, but 5 times more capable.

As they approached Modesto, the Kiowa Warriors were out front acting as Scouts. The co-pilot was manning the radio, keeping the rest of the team aware of what they were facing. As they flew over a farm, they could see huge groups of Mexican-Americans chained together, and guarded by AK-toting guards. The gunner settled the pipper on the chest of the guard, and fired a single round from the chain gun, not realizing that it was a HE round, and blew his body into mist. The rest of the guards stupidly tried to shoot the helicopters, which promptly shot the rest of the guards. When the KW's told them the coast was clear, the 2 Blackhawk slicks in the rear of the formation landed and deployed their armed squads. They quickly liberated the slaves, and the Spanish-speaking team members gently interrogated the recently freed prisoners, who were a gold-mine of information, including the exact location of Dead Eye's headquarters, and where the rest of the gang slept. He warned them about a "recreation center" where the female slaves were kept for the amusement of the troops. They noted all the locations on the map, and then told Jose some interesting news. Dead-eye's gang was using old NG M-113's to intimidate

everyone, and several had been converted to flame-throwers. He showed Jose which building they were in, and he decided to blow that building up first. He'd fire a Hellfire through the window in "bunker buster" mode and hopefully explode the stored fuel for the flamethrowers inside the building, destroying the M-113's with it. Jose climbed back into the Blackhawk to use the digitally scrambled radio, and discussed his plan of attack with the other pilots. The MBT commanders were bummed, the chopper pilots were going to have all the fun again! They were going to wait a couple of hours so they attacked at 0'dark hundred when everyone should be sleeping off the night's debauchery.

At 3:00am, the helicopters attacked Modesto. The first Hellfire blew up the fire station that stored the M-113's and the flamethrowers. It flew directly through the window, and detonated in the center of the building, rupturing and igniting 30 55-gallon barrels full of gelled gasoline, causing a massive fireball that the Apache only avoided by being almost a mile away from the building when he fired. The explosive concussion and shrapnel penetrated the thin armor of the M-113's and ruptured the fuel tanks and on-board tanks for the flamethrowers. The fire from the gelled gasoline got so hot it melted the aluminum armor, destroying the M-113's. One of the Kiowa Warriors detached from the group, flew over the Mayor's house that Deadeye had taken over. The gunner wanted to make sure Deadeye was awake when he landed in Hell, so he fired a short burst from the chain gun, then launched a salvo of 7 Hydra 2.75" rockets into the building, blowing it into rubble. One of the other Apaches fired a Hellfire into the barracks, and the building mushroomed then collapsed in a burning conflagration, or as Manny said later "A fitting funeral pyre for a bunch of trapped rats."

2 Blackhawks touched down in front of the Recreation Building, and the teams assaulted the building. One teenage girl was tied to a rack, and showed signs of recent torture. They cut her down, and the team medic did what he could for her while the rest of the team killed the dirtbags and freed the prisoners. Fortunately no one else was injured as severely as the girl, so they were able to herd them outside the building and escort them to safety. The medic said the girl would have to be flown back to the Gooney bird for immediate surgery if she were to live. Her mother pleaded with them to let her go with her daughter, so they loaded her and her mom aboard a Blackhawk and flew both back to the Gooney Bird. The trauma team was alerted, and managed to save her life. The head Trauma surgeon was sickened by what they did to that girl, and when word spread back to the troops, most of which had families, they resolved to take no prisoners from there on out. Any dirtbags, armed or not, would be shot on sight.

The next morning, when the town and the surrounding farms had been liberated, they all met at City Hall to discuss the future.

Chapter 17 - California Dreaming

The Town Meeting in City Hall was interesting to say the least, and Chaos pretty accurately described it. Finally Jason, the Team leader pulled his .45 and fired into the ceiling.

"Ladies and Gentlemen, Quiet Please - we've got a lot to do, and not much time. Let's keep this organized. First of all, we know you have lots of questions, so I'll let my second in command give you a briefing about what's going on outside of Modesto, then our ideas for rehabilitating the San Joaquin Valley, and getting your produce to market. Nick, if you would."

"Ok, first of all, we've been busy over the last couple of years trying to get what's left of the US back on its feet. Sorry we took so long getting here, but last time, the gangs so thoroughly ran the state that we would have taken horrific casualties with little gain. When we found out that the majority of the gangs were destroyed when they attempted to invade Las Vegas, we did a quick recon, and realized it was reasonably safe for us to come in and try to help free the people and rehabilitate the state. We've determined that 2/3 of the pre-bang US Population is dead, and a 100-mile long funnel to the east of the nuclear power plants at San Onofre and Diablo Canyon is still radioactive. Most of the San Joaquin Valley is uncontaminated, and as soon as we get water and power restored, we need as many farms producing vegetables and fruits for the rest of the country. We've been passing around and raising non-hybrid seeds for the last couple of years, but the areas we're growing food in aren't ideal for the vegetables and fruits we need to feed everyone. We have no intention of taking over, or seizing anything in the Valley, we're only interested in getting the fields producing as fast as possible, and returning a semblance of order to the area. As far as government goes, you're free to elect your own government, and we'll help with the security of the area until you have your own security forces established and trained."

An elderly man stood in the back of the room. He had to shout to be heard, but he kept a respectful tone. "We' d all like to thank you for rescuing us, but what assurance do we have that you're not just replacing the dirtbags you killed?"

"Sir, we're asking anyone who wants to join your new militia to meet after this meeting, and we'll issue either an AK-47 or AR-15/M -16 to anyone who is old enough, and you feel you can trust to protect the community. We'll train them, and provide them with ammunition and some other items to defend Modesto with. Anyone else who is of good character will receive his choice of a bunch of captured weapons and spares we have, including pistols, shotguns, and some rifles. These aren't full-auto, but will provide everyone with a defensive arm."

"Why are you giving us all these weapons?"

"You're going to be responsible for your own defense, and we can't stay here forever - we've

got a bunch of the US left that needs our help."

With that the meeting broke up, and a line formed of younger men and women who wanted to join the militia. They were segregated into people with previous military experience, especially infantry and Special Forces, and civilians who were willing to go through a crash training course.

The old man walked up to Jason and introduced himself as Hector Lopez. When Jason found out he was a retired non-com from Desert Storm 1 and 2, he checked with his 2nd in command, and they didn't have any previous officers volunteering for the militia. He asked Hector if he knew if anyone in town would be willing to serve in the militia that was an officer.

Hector looked like he was going to cry, and said through his tears "The first thing that diablo Dead-eye did when he took over was to kill anyone with military experience who wouldn't join his gang. I was spared because he didn't think a lame old man was a threat. Still he took my daughter hostage and treated her horribly. I found her body a week later, and buried it. I can't begin to tell you what he did to her. He was trying to intimidate me, and told me if I tried anything, he'd kill my Granddaughters the same way. I'm sorry, but I couldn't let him kill my granddaughters, they were just ninos!"

"Hector, I wish we could have gotten here sooner."

"Don't worry about it, she's in Heaven - there wasn't anything you could have done anyway unless you would have gotten here 6 months after whatever knocked out the power happened. We thought someone had popped a nuke."

"Hector, we need someone to lead the militia. I know you aren't up to marching and stuff, but they need a leader, and you seem to be the most senior military man in town."

"Very well, I accept. I want to help, but I don't get around so well anymore."

"Thanks Hector - I've got to do something, and we'll talk later."

Jason whispered something to his second in command, and walked out of the City Hall. He grabbed a radio, and contacted Central Command in Allakaket with the news that Modesto was pacified, and the dirtbags buried.

Over the next couple of weeks, they located some older equipment that was stored in some older abandoned farms that ran on diesel and didn't require chips to run. Jason did some checking, and a C-5a could land at the local airport since their main runway was 5100 feet - 100 feet over the minimum for a C-5a, and deliver over 200 thousand pounds of diesel fuel per trip from Alaska. At around 7 pounds per gallon, plus the weight of the fuel bladder, they could deliver

about 28 thousand gallons of diesel per trip. This made the farmers very happy. Soon the Upper San Joaquin Valley was being prepared for planting using diesel-powered equipment for the first time in years, and they were able to plant most of the remaining farms. Now they had to figure out how to get the produce to market, and where the markets would be. For now, the C-130's and the occasional C-5a could fly produce to Mountain Home for distribution to the rest of the US. The California Aqueduct was still working, and all they had to do to water their fields was to insert draft tubes into the canal, and pump out the water they needed.

Once things were settled in the upper San Joaquin Valley, Jason knew he had to get the lower half liberated soon. He had heard rumors of brutal warlords, and hoped he could liberate the southern valley to Bakersfield without losing too many men, or too many innocent civilians.

Later that afternoon, Rocky called Jason and gave him the bad news. Bakersfield held what remained of the gangs, and they were being run by a powerful and professional gang called M - 13. Their only hope of pacifying the area would be to shell the town and wipe out the gangs, or else go house to house and face terrific losses. He hung up, and walked over to Hector and explained his problem.

“Hector - it’s worse than we thought in Bakersfield, M -13 is running things, and they’re well armed and organized. The only way we can take them on without taking heavy losses is to shell the town. If we do that, any civilians caught in the shelling will be killed.”

“If you can tell me exactly when you’re going to shell the town, I’ll send my son as a runner to tell the people to vacate the town right before the shelling starts.”

“Hector, if they are caught, or the gangs find out, it will be a massacre.”

“How about if they quietly walk out with what they can carry on their backs - all the equipment is stored at the farms. They’re used to being poor, and starting over is nothing new to them. I’m sure they’d rather have a chance to escape than be destroyed outright in an artillery barrage.”

“Ok, Hector, I have to check with command.”

Jason called Rocky back, who gave his approval if Jason felt that Hector could tell his people without wrecking the surprise barrage. Jason was afraid Rocky would say that - he was telling him to make the call since Rocky didn’t know Hector from Adam. Jason knelt in prayer right then and there - this was too tough of a call to make by himself. When he stood up again, he knew his answer - he couldn’t slaughter innocent civilians even at the risk of his own men. Jason told Hector he could give him 24-hours advance warning. Hector shook his hand with tears in his eyes, he knew Jason was risking his operation and his own men to give the civilians a chance to escape, and some of the people in Bakersfield were distant relatives of his.

One of the Gooney Birds was carrying 6 155mm Howitzers and enough ammo for 3 days worth of fire missions. Jason knew that he wanted mostly VT fuse rounds for this mission, with some incendiary rounds. He did some checking, and Meadows Field Airport had a 10,000 foot runway, easily big enough to handle their heavy-lift air transports. It was only 3 miles from Bakersfield, which meant it was too close to stage the artillery bombardment from, since anyone with half a brain would assume a bunch of C-5a' s landing at the airport weren't there to deliver Christmas presents. Jason decided to convoy down Route 99, and set up at the extreme range of the 155's. They'd have M-1a Abrams, Bradley fighting vehicles, Kiowa Warriors and Apaches, and all the Gooney Bird's hovercraft including the rail-gun equipped MBT's in support. The Bradleys and Abrams tanks would have to be trailered down, but with the helicopters scouting ahead, they shouldn't be too vulnerable.

He set the time of attack at 3:00am Wednesday, which gave Hector 48 hours to get the word out. Hector's instructions were to remain in place until Midnight, then sneak out as quietly as possible so they could surprise the dirtbags who would hopefully be sleeping it off. Hector's son Juan drove his old pickup south on Route 99, and made contact with the people being held in Bakersfield. There wasn't much to stop them leaving, except the dirtbags had taken all their vehicles and gasoline, so they'd have to leave on foot. No one knew if conditions outside Bakersfield were any better, and the warlords spread rumors of vicious warlords that treated their people far worse than they were being treated to pacify the population. Right after Juan left, they made preparations to road march down Route 99 to Bakersfield, then do a quick setup and fire mission. One of the Kiowas was tasked with taking pictures of the town so they could plot their targets in advance. He flew high over the town, and took a whole roll of pictures using a reconnaissance pod the mechanics mounted to the belly of the Kiowa. Once the film was developed, they quickly laid out a grid-sector map of the town with the distances and bearings from their pre-planned setup area. Jason knew if the dirtbags were still asleep when the fireworks started, it would be like shooting fish in a barrel.

Juan made careful contact with one of Hector's cousins, who knew Juan on sight. The two of them met with the fathers of the families, and organized an escape plan that wouldn't alert the dirtbags, who had grown complacent since the townspeople weren't causing any trouble. Right after midnight Wednesday morning, they quietly grabbed what they could carry, and started walking out of town. Strict noise discipline was enforced, and the dirtbags never caught on.

Meanwhile, the convoy arrived at the pre-plotted firing spot at midnight, and set up as quickly and quietly as they could. They were over 10 miles out of town, so they doubted that anyone could hear them anyway - but they took no chances. The guns were set up, and the ammo carriers backed up to the breech end of the guns. The 6 guns were set up in a semi-circle to engage as wide of an area of downtown Bakersfield without having to make major adjustments to the guns once they were set. The targeting list had already been printed, and the first salvo of the barrage would be a TOT mission so they'd hit the major targets at the same time. Once 3 salvos had been fired, they'd switch to a hurricane barrage, and basically fire as fast as they

could until they ran out of targets or ammo, since they knew that the enemy had no effective counterbattery. The battery commander had 3 ROV's assigned to him to act as spotters, so he knew when to switch fire, and was able to adjust on the fly. While the battery was setting up, the tanks and Bradleys set up to prevent the escape of any dirtbags from the town. The civilians would already be in safe areas when the barrage started, so anything moving in town at 3:00 would be a target.

At 2:30 Jason received word that all the civilians were out of town, safe, and accounted for. He said "Why wait?" and called the artillery commander, who said they were ready. He called the rest of the team, and advised them that they would start the attack at 0235 instead of 0300. Everyone was already in place, so at 0235, the battery commander received the FIRE command, and 6 strings were pulled, and all the guns fired within a second of each other. The results downrange were horrific. 1 single M795 155mm round weighed 103 pounds, and contained almost 24 pounds of TNT The VT fuses caused the rounds to airburst over the targets, creating a large cone of high-speed shrapnel and a massive shock wave that destroyed buildings. The big guns were able to fire 1 round every minute or two, and the controllers were observing the video displays from the ROV's and calling in corrections. "Gun #1, drop 10, left 50. Gun 2, switch to target #2, Gun #3, drop 50, right 10..." Jason had assigned extra men to the gun teams, and they were able to fire as fast as they could reload and aim the gun. Half an hour later, the battery commander called "All Guns, Clear and Cease Fire!" Each gunner that had a loaded round in the breech pulled the lanyard, sending the round downrange to eliminate the risk of cook-off, and then the battery stood down. The ROV's showed nothing but burning wreckage where the town once stood. They saved whatever they could, but most of the buildings downtown were reduced to rubble, as was the Mayor's mansion where the leader of the gang and his closest lieutenants stayed.

Once the barrage lifted, and the All Clear was given, the armored teams drove into town to make sure the dirtbags were dead. There was sporadic single shots as the wounded were killed. Finally they brought in the CEVs with their huge bulldozer blades to knock the buildings down and contain the fires. 15 minutes later, a Hummer drove up, and Hector's cousin Ernesto got out. Hector limped to him, and gave him a bear hug. Ernesto was crying with joy to see his cousin again. They both enlisted in the Marines right out of high school, and were in Desert Storm 1 and 2 together. Hector introduced his cousin to Jason, who apologized for leveling the town.

"No Problemo Senior, our houses are intact, and you killed the Diablos who were terrorizing us."

Hector filled his cousin in about what had transpired since the last time they had seen each other. When they finished, Jason asked Ernesto if he'd like to be in charge of the Bakersfield Militia. Hector explained in rapid-fire Spanish, and Ernesto was nodding vigorously, then shook Jason's hand.

Once they got the town cleaned up, Jason and the rest of his SEAL team were busy training the new militias while they scrounged around for more diesel-powered tractors and farming equipment. One of the Jet fuel tanks at the airport was empty, so they had a C-5a fly in a load of diesel for them to use at their farms. The airport had 4 fuel trucks, and the farmers kept them busy 6 days a week. The majority of the citizens were Catholic, so they took Sunday off to attend Mass and socialize. Jason called Rocky and gave him the good news. He told Jason their next task was to get Hoover dam up and running, and try and rebuild a small power grid tying Central California to the hydroelectric power from the Colorado River. Jason realized he was going to have to locate some engineers, power company employees with high-tension line experience, and a whole bunch of parts. He knew he was going to be busy for the next couple of years, and probably not see Alaska for almost 5 years unless they were able to give him leave.

Chapter 18 - Back in Training

Admiral "Rocky" Robbins came to the realization that the US and Canadian governments, and the Military as we knew it, had ceased to exist after the CME had hit. He contacted the CO's of the bases he was in contact with, and they brain stormed their situation. He remembered the Alaskan Survival School that Bear had built was still intact, and could provide a training base for the new generation of warriors. Their job would be to train the civilians that they encountered while rebuilding the infrastructure, and like the Green Berets, would train them into an effective Militia using Guerilla tactics**.** They all agreed that the days of conventional warfare were over, because the tanks and planes wouldn't run, and there weren't any suitable parts to fix them since the parts were exposed to the same EMP that destroyed the equipment. There were no stable governments, so no one would have the money to rebuild equipment later.

Rocky suggested that they get the training Cadre trained up, then they would send their best and brightest recruits to Alaska to complete the training program, and train the people back home. Any armories not needed for the existing military would be doled out to the civilian militias for self-defense. The whole group agreed that the civilians were best equipped to defend themselves, since the mobility of the existing army was sorely limited. Using stuff they knew was still working they came up with a basic TOE for the militias including small arms, RPGs and mines**.** Any missiles that had chips in them were immediately suspect.

Rocky thought about that, and checked with the supply sergeant, and the stores that they had of missiles was slowly being refurbished and certified by the technicians. He asked how tough it would be to make new ones, and the Sergeant had a good laugh.

"Admiral, unless you can get Hughes and the other Missile builders back in business, this is all we have. They're way too complex to be built by anyone else, and they were the only ones that stored the chips necessary to build them, and they didn't have that many of them on hand. Not only that, but the rockets, etc. were built by other contractors. They were spreading the wealth around to the point that if you want to start building new Hellfire missiles, you'd have to start up 2 dozen companies again, and some of them are overseas. If we refurbish all the missiles we have in stock, we've got about a 10-year supply, then we either decertify them for age, or build a new one."

Rocky realized the complexity of the problem, and decided it wasn't worth it. They'd step back a generation and abandon their attack helicopters, tanks and fighter aircraft as they wore out. Eventually someone will have to rebuild the cargo planes, but they'd be a priority instead of fighters or bombers, since there was no one to fight, and they'd be bombing people who were already barely surviving. Once they reached consensus, Rocky thanked them and terminated the call, since they needed the bandwidth for essential communications.

Rocky approached Josh, and floored him by asking him "Josh, how'd you like to be a SEAL officer again?"

Josh looked at him like he'd grown another head, so Rocky explained what he wanted to do, and he needed Alaska Survival Inc. as a training base, and they needed his expertise in Combat Medicine, since he was one of 8 Special Forces Medical Technicians, and the senior officer among them.

"Admiral, with all due respect, I resigned my commission years ago. Why do you want me back?"

"Josh, we're not getting any younger, and someone needs to train the next generation. Alaska Survival Inc. has been shut down for the last 5 years thanks to the CME, but I checked it out, and it would make a perfect training base for the new Special Forces trainees we need to train. They'd be closer to Green Berets than SEALS, since I doubt they're going to need to assault any tankers or oil derricks any time soon. We need teachers to train the people who will then go back to their communities, and train them in self-defense and Guerilla tactics."

"Sir, I need to ask Sheila, could I let you know tomorrow?"

"One last thing Josh, If you come back, it will be as a full Captain."

"Sir that's 2 full ranks above my rank when I resigned."

"If you would have stayed in, you'd be a Captain now, so I unilaterally decided to promote you!"

"Aye Aye, Sir, I'll let you know."

Josh shook his hand, and jogged off to give Sheila the good news. She was ecstatic, since Josh was getting bored, and frankly was a pain to have hanging around the house with nothing to do. She realized this would be a training command, and he would be home every night for dinner. She gave him a big kiss and told him to tell the Admiral Ok. He jogged back to Rocky's office and gave him the good news. Rocky shook his hand, and said "Welcome aboard Captain Williams." Josh hoped his dress whites still fit! Before he left, Rocky handed him a folder with what Josh had to do to get ready for training new recruits at Alaska Survival Inc. By now Hunter had died, so Mary and April moved back to Allakaket to be closer to their grandkids. Josh remembered the last conversations he had with Hunter, who had aged visibly after the death of his lifelong friend and swim buddy. Hunter's mind was on where he was going to spend eternity, so he was receptive to Josh's message, and after several visits, gave his life to Christ, and was assured that he'd see Bear again in Heaven. With their 2 houses available, they would be able to expand the operations, and house 100 recruits at a time in barracks. Josh went

home and reviewed the training curriculum, and agreed with Rocky's advice. The note he attached to it said

"Captain Williams,

I'm leaving you in charge of the training program. You have 6 months to get the training cadre ready to accept 100 trainees, and have them trained in 6 months time. We want to have 2 classes per year until further notice."

Josh saw that, and realized that they'd be better off with 1 class per year with more students, since they only had 6-9 months per year of weather that wouldn't kill the trainees if they were outdoors. He called Rocky, who told Josh he was in charge, and if he wanted to run 1 larger class per year, to do it. Rocky's clear message was "It's your training program - make it happen!"

Josh wished he'd read the rest of Rocky's letter before he called him. "Implement any changes to this you feel necessary - but do not fail! We will probably be the sole training command for the entire North American Continent for the next 10-20 years."

Josh contacted the mine, and had them fly a backhoe over to the school, and called Jake and asked him to send a team of loggers and carpenters to the school to build 2 additional barrack buildings to hold an additional 100 students. He decided to have 1 class per year lasting 9 months with 200 students to meet Rocky's 200 students/year training goal. 3 months later, the 2 additional barracks were built, and they were ready to train the trainers, since the snow had just melted. They flew in from all over the former United States and Canada. Since the CME, the people and governors of the states who survived the CME had decided that the United States and Canada as federal governments had ceased to exist, and a coalition of Sovereign States was formed called the North American Federation. Each state or territory was a sovereign nation unto itself, and the Federation only existed for mutual aid and coordination of rebuilding efforts. Several "Dark Zones" as they called them were ungoverned and ungovernable, either due to nuclear contamination, gang warfare, or both. These areas were isolated and left alone to either die off or come to their senses. The west coast of the former United States from Washington to Baja California from the coast to approximately 50 miles inland, and the east coast from New Hampshire to Virginia was a wasteland with pockets of survivors, mostly inland in the small rural farming communities. Norfolk VA was the shining exception since the US Navy was able to maintain control of the areas around them, as were Annapolis Maryland. The center of the country away from the big cities was in excellent condition, and the breadbasket of the US was intact. As soon as they got chips to power their equipment again, the farmers switched to older farming methods, located huge storage facilities full of non-hybrid seeds, and started farming. Slowly but surely, the transportation system was rebuilt, first the railroads, then local trucking companies took responsibility to get food and supplies from the trains to market.

Once Josh got the training cadre together, and had their first morning PT, he was greatly disappointed in their performance and told them so.

"Gentlemen, We're supposed to be SPECIAL forces, not your average line doggies, yet this morning's PT reminded me of a bunch of Civilian Recruits at Fort Dix - this is unacceptable. I'm not in the best shape I can be either, so I'm going to make 2-a-day PT mandatory for everyone until we're back in fighting shape. Since Master Chief Reynolds is the senior chief here, he'll lead the drill, and anyone not measuring up to his standards will answer to me. Any questions? Very Well, Dismissed!"

None of the SEALS present dared to argue with Josh, they knew that if they weren't 100%, people died. Some of the Rangers and Marine Recon soldiers grumbled very quietly until Chief Reynolds got in their faces.

"Gentlemen, you seem to have a problem?"

One of the Junior Rangers made the mistake of replying

"Chief, it's not that we don't want to get in shape, I resent the dressing down in front of the troops. We're all elite here after all!"

"Gentlemen, you used to be elite - from what I saw Josh is right, and you have a choice to make, either get with the program, or get out!" He turned and marched away from the group without waiting for their comments. It finally dawned on the group that they volunteered for this duty, but it didn't mean that their CO had to accept them. They all desperately wanted to be members of the training cadre, and realized that they just had their first, last and only free pass.

Over the next 6 weeks, Chief Reynolds got the team back into shape. He started with jumping jacks, push-ups, and jogging, and gradually picked up the pace and the number of repetitions. Right when they thought they were "lean mean fighting machines" Chief Reynolds threw them a curve by announcing that they would be swimming a mile in Lake Allakaket for their morning PT for the next week, without their dry suits. Josh thought that Chief Reynolds was a devious SOB, and would either get 100% cooperation, or some of the people would be going home. He did make 1 concession in the interest of safety - there were going to be 2 motorized RHIB's following the pack. The downside of which was if you whimped out and got a ride while you were still conscious - you were headed home. He explained that the water wasn't cold enough to kill you, just cold enough to make you wish you were dead.

Monday Morning, they met at the water's edge. Chief Reynolds was laying the psyops on thick and heavy "Gentlemen, the water this morning is a nice balmy 40 degrees. Anyone who would like to go home now and spare themselves the agony, just hold up your hand." Josh was pleased to see there weren't any hands up in the air. With that, Chief Reynolds ordered them

into the water. Josh remembered what Bear had done to him 20 years ago to toughen him up for BUDS and Hell Week. He didn't remember the water being this cold. He also remembered being much younger then. Finally he remembered the SEAL Motto - "You don't have to like it, you just have to do it!" And with that thought, he dove into the freezing water, and started swimming for the opposite shore as fast as he could, remembering the secret to staying warm was to keep moving. Either you shivered to stay warm, or your used your muscles to propel you toward your goal. Most of the SEALS were in the front of the pack, and the Rangers were bringing up the rear - since swimming wasn't emphasized in Ranger training. Their pride wouldn't let them be the last to finish, or quit, so they mustered their energy and tried to catch up to the SEALs and Recon Marines, who were much better swimmers than they were.

Josh was feeling the cold seep into his body, and new he was dangerously cold, but he realized that the finish line was just a quarter mile away, so he gutted it out. Near the end, most of the Rangers were plucked from the water when the medics feared that they were becoming dangerously hypothermic. They were enclosed in special sleeping bags that had hot water pumping through them, and their body temperature and heartbeat were monitored. An hour later, when everyone else finally staggered out of the water, they were handed Mylar blankets, hot cocoa, tea or coffee, and told to sit in front of the fire to warm up. At the end of the day, Josh was told that none of the Rangers completed the mile swim and had to be rescued due to hypothermia, and everyone was showing signs of mild to moderate hypothermia when they finished. He called Chief Reynolds into his office and put the kibosh on any more lake swimming for medical reasons. They could swim as long as they wanted in the heated pool, but he couldn't risk their lives unnecessarily. He told him how Bear made him swim in the lake as preparation for BUDS, but he was 20 years younger, and in much better shape back then. They decided that tomorrow's session would be held in the pool for safety reasons, but he'd make them swim even longer and harder to make up.

The next day, Chief Reynolds had them all muster at the pool, and told them that since they couldn't handle the cold, he was going to try and see how far and how fast they could swim in nice warm water. He expected that they would be able to swim at least a mile during the hour they had the pool available. Josh knew that the SEALS could all accomplish a mile in an hour, but he doubted the Marines or Rangers could. He decided to wait and see. When the whistle blew, the first group of 12 dove off the side of the pool, and started swimming. When they got half-way down, the next group took off, and then the next until all 12 lanes had 6 swimmers in each. Luckily Chief Reynolds put all SEALs in the first 8 lanes, so he wouldn't have to worry about running over a slower swimmer. On the other hand, some of these younger SEALs were really fast, and he'd have to keep an eye out so they could pass him! Chief Reynolds marched up and down the poolside barking harassment at the swimmers. "My Grandmother swims faster than you do - and she's been dead for 10 years! Come on, get the lead out!" Josh kept track of his laps, and just finished the requisite mile inside an hour. Meanwhile Chief Reynolds was down by the "Kiddie pool" as he called it, barking at the Rangers. "Come on Girls - get it moving, we don't have all day - half the class has finished already and you're bringing up the

rear."

Later that day, Josh called Chief Reynolds into his office. "Chief, I appreciate what you're trying to do, but you have to remember that Rangers aren't trained the same way we are. Their skills are highly valuable, and I don't want someone we need washing out or quitting."

Chief Reynolds stared at Josh, then saluted and said "Aye, Aye, Sir!"

Josh returned his salute then said "Dismissed."

They swam the rest of the week, but Chief Reynolds knocked off the harassment. Gradually the Rangers got better at swimming. Finally the week was through, and they met at the rifle range to practice their shooting techniques, and to learn how to train others to shoot, and how to train others to train others. The whole point behind this program was to train the trainers. The Rangers did much better shooting the M -16 using open sights at the 100-300 meter targets. Everyone qualified, and the Recon Marines put on a demonstration since half of them were Scout/Sniper qualified. Josh decided to take them out on the 600-yard range that afternoon for a little friendly competition. He had his personal M -25, and they each had their own personal 7.62mm sniper rifle. He had 6 lanes set up for 600 yard bullseye targets, and they spent the next two hours deciding who was Top Dog among the 6 of them. Josh was in his 40's by now, and the Marines were 10-15 years younger, and right out of Scout/Sniper school. Even still the match was closer than Josh would have guessed, and it came down to 1 shot to decide the best of the 6 of them. Based on X-count, Josh came in second to a Marine Corps 2nd Lieutenant. Josh had 19-20, and he had 20-20 in the X-ring at 600 yards.

The next day, they went over pistols, subguns, and other weapons. Finally they tackled the Obstacle course, then spent the rest of the time in Field Exercises, or Field-X's. The Rangers decided to get even with everyone else, and got Josh's permission to put on a "Robin Sage" field exercise in Whitehorse. 1 week later, they were all geared up and hustled aboard a C-130 in the evening to fly to Whitehorse. None of the new trainers had been to Whitehorse before, so this would be as close to the real thing as possible. When they were overhead, they were informed that they were to jump from the plane, and land in the field laid out by the Pathfinders. The Jumpmaster quickly ordered "Stand up", then "Hook up" and finally "Stand in the door". They quickly checked each other's gear, then stood in the doors, which had been opened, and the wind was howling inside the C-130. When the green light came on, the Jumpmaster yelled "Go...Go...Go..." and slapped each jumper on the back. Josh was 4th in his stick, and had made so many night jumps that he could do one with his eyes closed. He stepped out the doorway into the air, and seconds later, he felt the tug of the cable releasing his chute, then his chute banged open above him. Looking up, he counted cells, and was glad his parachute was fully open and not tangled. He steered for the drop zone, and 20 feet above ground, released the connector on his pack, dropping it on a leash below him. As soon as it touched down, he checked his PLF position, and prepared for the landing shock. As his boots touched down, he

rolled to his right just as he had been taught, then released and gathered his parachute as soon as he was back up.

For this operation, the "newbies" would be in charge to give them some experience at leadership, since almost all the senior officers had either been through the actual "Robin Sage" scenario, or else had been through their service's equivalent. Josh was back to his role as the team corpsman, and the #2 man on the team. A junior SEAL Lieutenant was in charge of Josh's team, since he hadn't been through this scenario yet. Josh gave him a heads-up before they left, and told him that if he had any questions, to ask him quietly, and treat him like a senior non-com advisor. Rudy thought that was a great idea, but felt kind of funny with Josh saluting him, since he had taken off his silver eagle collar device for the duration of the exercise. Josh had decided that since they didn't have enough Ranger Instructors for each team to have an instructor with them, the senior officers would remove their rank for the duration of the exercise and act as instructors while they went through the exercise with them. Since he had been out of the SEALs for several years, and considered his Captain's rank honorary, he didn't have a problem with it.

Once everyone was on the ground, they formed up and marched in patrol file to their link-up location. Josh had forgotten how heavy the basic load was, and was already perspiring even in the cold air. 2 hours later, they arrived at their rally point, and sat down to rest in the Ranger Roll to take the weight off their backs while they waited for the trucks. Rudy made sure that 1/3 of the team was on security before he let anyone rest including Josh. Josh was glad to see that Rudy was on the ball, and treating the exercise like a real mission. 15 minutes later, a dozen deuce and a halves showed up with Canadian flags painted on the sides. The Rangers had set up another surprise for the other instructors - they wouldn't all be in Whitehorse. As each 6-member team boarded their transports, Rudy made sure he was the last aboard so he could peek out from under the flaps to keep track of where they were. He kept track of the turns as best as possible, and noted any mile markers. Several hours later they were ordered out, and told to make camp. Josh checked with Rudy, and was glad to see Rudy pointing to a spot on the map that was right were they were, or as close as they could estimate without GPS equipment. Josh gave him a friendly pat on the back, and Rudy ordered them to make a secure camp and set the watches. Josh thought that was smart, because even here, there might be "hostile" personnel about. Besides, it was SOP for the SEALS to always assume they were in hostile territory because Vietnam had shown them that even a concertina wire enclosure wasn't any more secure than the alert sentry could make it.

Chapter 19 - Hold that Dam!

General Newman was in his office at Mountain Home AFB when his radio chirped.

“Sir, you have incoming emergency traffic, please come to the communications room!”

He jumped up, and ran 3 doors down, and entered the comm shack. A radioman handed him a message form. As soon as he read it, he said “Give me the radio!”

“This is General Newman with an urgent message for Rick Wilson from the Alaska National Guard. I’ve received word that the Hoover Dam is threatening to go over the top, and they need the generators started ASAP. If you can hear me, call me at 418.487 MHz. Urgent - Anyone who knows the whereabouts of Rick Wilson, please relay an urgent message for him to call me on this frequency.”

General Newman released the microphone, and 5 minutes later he heard a somewhat familiar voice. “General Newman, this is Rick with the Alaska National Guard. I just heard part of that message, could you repeat it?”

“I received an urgent message from the Nevada State Militia that Hoover Dam is in danger of spilling over, and they can’t stop it unless someone can get the generators working. Seems someone redesigned the systems after 09/11 to be more secure, not figuring that a massive EMP would take down the entire dam.”

Understood General. I’ve got a WIG SST available, and I can be in Nevada in 2 hours. Please advise whoever’s in charge of the Nevada State Militia to contact me on 478.616 MHz.”

“Thanks Rick, I’ll relay the message - Good Luck and Godspeed!”

Rick went into Controlled Panic Mode, grabbed everything he could remotely need to get Hoover Dam up and running, including a diesel generator large enough to power the control room, his laptop with the control software already loaded, and his “Emergency Kit” he had built over the years of rehabilitating stubborn hydroelectric dams. Several crewmen helped him load the cargo/passenger compartment full of all the gear he might need to get Hoover dam up as fast as possible. When they were finished, he strapped himself into a passenger seat, and the pilot spooled up the huge high-bypass turbofan, and they lifted off. Once they were airborne, he rotated the nozzles aft, and quickly accelerated to Mach 1.5, his maximum speed. The radar and computer were hard-pressed to avoid all the obstacles in their way, but Rick had impressed on the pilot that every minute counted. Finally, 1 hour and 59 minutes later, they touched down on the top deck of the Hoover dam, which was barely 5 feet above the waterline, and 20 feet above it’s maximum design waterline. The emergency spillways were 5 feet under water, and millions

of gallons were spilling over every minute, but it wasn't enough since the aqueducts weren't taking their normal load off the Colorado River, and the full flow of the Colorado was being impounded by the Hoover Dam.

As soon as the WIG/SST shut down, a dozen men swarmed the aircraft and hustled Rick and his equipment into the control room. He quickly hooked up the generator to the power leads, started flipping breakers, and told someone to get that generator running ASAP. As soon as the generator started running, he ran to the center command console, unplugged the computer that was connected there, and plugged the connections into his laptop. Just when the lights were coming on, he flipped the switch, and his laptop booted up. Rick was literally counting the seconds it took to get the Windows operating system menu up. Finally the main desktop was displayed, and with a few keyboard commands and mouse clicks he loaded the control software. First he needed to get the #1 turbogenerator spinning. He called on the radio, and the engineer said that it was OK to start #1 - so he sent the command, but nothing happened. He waited, and finally the engineer said the turbine was starting to spin. He could see on his display that the rpms were coming up, and it was starting to make power. As the gauges continued to climb, he told the guy watching the generator to shut down and disconnect ASAP before the power started to backfeed the generator. He got it shut down and disconnected in record time. Once the Number 1 turbine was at 100%, he sent the command to the floodgates to open, and the engineers cheered as the gates slowly opened. Once all the gates were open, the water level slowly receded.

Rick knew that this was only a temporary fix, and he needed to fix the dams and aqueducts quickly to restore the water distribution and power systems of the Southwest. He remembered that Bonneville and Grand Coulee Dam both had dozens of storage rooms with transformers in the base of the dam, and asked someone if there were a service entrance to the dam. One of the guys pointed out a locked door, and Rick took out his electric lock pick, and got the door open. The engineers were stunned when they saw it opened to a freight elevator. Rick told them that if they pushed the lowest button on the panel, the elevator should stop at some storage rooms that were filled with refurbished transformers and stuff they'd need to restore the power distribution grid. Rick wasn't going down himself, since he was pretty sure what they'd find, and it wasn't worth getting freaked out by his claustrophobia. They rode the elevator down, and 10 minutes later, they were back on the surface shaking Rick's hand vigorously and slapping him on the back. The head engineer said that there were hundreds of transformers down there ranging from huge distribution units to small neighborhood units. Rick checked his database, and the only nearby hydroelectric dams were the Davis and Parker Dams, and both were downstream of Hoover. They took their time reloading the SST/WIG while Rick filled the engineers in about how they rehabilitated the area around Bonneville and Grand Coulee Dams. He had a spare laptop with all the data they needed, and handed it to the head engineer along with a small solar panel to keep it charged when they weren't near a source of AC power.

Rick sent teams up and down the Colorado river to check the condition of the Aqueducts and

get them taking load off Hoover dam ASAP. They came back with the good news that they only needed power to the pumping stations, then they could get the water over the mountains, where gravity would take care of the rest. He quickly traced out the power to the pumps, and realized they could power the pumps from the existing distribution system, which a couple of modifications. He got with the engineers, described what he wanted to do, and told them getting the aqueducts taking load off Hoover was their top priority. Once the dam was safe, they could send power to Las Vegas and other areas that needed power. 6 months later, they had the aqueducts running, which solved 2 problems. 1) the lack of water in Southern California and, 2) the overloading of Hoover dam, and Parker downstream of it with the spill gates running wide open. Rick got the Parker dam running next, since it was responsible for at least 1 aqueduct.

Once the aqueducts had water flowing in them, he dispatched helicopters to follow the water, and advise anyone in charge to expect a bunch of water, and to either safely divert it, or use it. The reservoirs in Southern California, which were critically low, slowly filled up due to the low demand for water. Once the water levels got high enough, gravity started filling the distribution pipes, and parts of Southern California had water again. Irrigation and drinking water was the priority, but without power, they were unable to treat the water like they had in the past, and put word out on the radio they had water, but it was untreated, and they had to take precautions. The first result of the water was Imperial Valley was able to raise crops, at least where they still had diesel or some other means to work the land.

Meanwhile, back in Alaska, Ron Williams received a strange call from Governor Adkins. He had to resign as the Governor due to his heart condition - he couldn't take the stress, and asked if Ron would be the interim Governor. Ron asked "What about the Lieutenant Governor?"

"He died in a plane crash when the CME hit. He was trying to get home, and was still airborne when it hit. It's only for 6 months until the next election. I've already cleared it with the Legislature."

"Ok, Governor Adkins, I'd be honored. But I'm only serving as the Interim Governor, I've got heart problems too. Luckily my Doctor has them under control."

"Great, get to Juneau tomorrow for the swearing in. There isn't much going on right now that you're already not doing. Alaska's in pretty good shape, and I'd stay in charge, but I've got to have bypass surgery, and the cardiologist wants me to take it easy for 6 months after surgery."

The next day Ron and Nancy flew a SuperGoose to Juneau, met the Governor and his wife, and the Speakers of both Houses. They both assured him that there wasn't much going on, and they needed a caretaker Governor until the next election for Constitutional reasons. Ron asked them why they didn't take the job, and they told him they both wanted to run in the next election, and it would seem improper for either of them to serve as Interim Governor, so they agreed not to

seek the position until the election was over. They assured Ron that neither house would give him any headaches, and thanks to Governor Adkins, he had the authority to take care of emergencies without waiting for a vote of the Alaska Legislature, but they'd appreciate being kept in the loop. Ron looked at Nancy, who nodded. "Very well Gentlemen, I'll serve as the interim Governor, but only for the remaining 6 months on Governor Adkins' term, then I expect to be replaced by 1 of you two gentlemen. I'm supposed to be retired!" Next there was a simple swearing in ceremony with the Chief Justice of the Alaska Supreme Court holding an Old King James Bible, and asking Ron to repeat after him.

"I Ron Williams do swear to support and defend the Constitution of Alaska, so help me God!" Once he finished the Oath of Office, Governor Adkins shook his hand, and said "Thanks for serving Governor Williams." There wasn't anything he needed to do right away, so he asked the Speakers of both houses if they minded if he lived in Allakaket for the duration. They had radio communications, and he had planes capable of being anywhere in Alaska in a couple of hours.

"Frankly Governor, you'd be better off in Allakaket than in Juneau. We've heard about your set-up there, and might decide to move there ourselves when we retire." With that Governor Ron Williams of Alaska boarded his SuperGoose, and flew home to Allakaket.

Chapter 20 - The Federation

Over the years since the CME destroyed most of the infrastructure (at least the part that required electricity, or electronics) the States and Provinces soon realized that their respective Federal Governments were flat on their backs, and in no condition to run things. Slowly, states and provinces in the areas that had been rehabilitated declared their sovereignty, and the governors were in charge. Once air travel was reestablished, the governors of the various states met in Kansas, and decided to form a Federation of Sovereign States called the North American Federation. It included the former Continental US and Alaska, Canada, and Mexico to the Panama Canal. Hawaii became Isolationist, so they were left alone. South America soon followed suit with the South American Federation. Europe was a disaster area, and anarchy still ruled the majority of the continent, with small pockets of civilization trying to survive. Siberia didn't give a rip, and the Native Siberians decided they didn't need anything more than local government. Australia, New Zealand, and the rest of the Pacific Islands that survived including the Philippines formed the Pacific Federation. Japan, most of the Middle East, the Indian Sub-Continent, China, Korea, Taiwan, and Southeast Asia had ceased to exist as organized countries due to the almost 100% death toll from the CME and starvation.

The North American Federation was established solely to coordinate trade, and establish a common defense. The states were 100% sovereign, and could resign from the Federation at any time. Each State or Province sent 1 representative appointed by their governor to Topeka Kansas for the first session of the North American Federation. By now, Ron Williams was the ex-governor of Alaska, and was appointed by the new Governor to be the Alaskan Representative. He had his personal WIG SST available to fly him back and forth to any meetings, which wasn't expected to be many. Their first meeting established the Federation, and it's bylaws. With no pressing business, they voted unanimously to adjourn until such time as they were needed. One thing they did agree to was a Federation Militia, made up of a small contingent from each State. Their only job was the defense of the Federation from outside attack. With no other threats, they were told to remain in their home states, subject to call up by the Federation Council. Suddenly, Alaska Survival Inc. was very busy again training State Militias from all over the Federation, with the notable exception of the Province of Quebec, who refused to send anyone, since no one in Quebec was allowed to own guns anyway.

Ron guessed where all the Canadian Liberals had migrated to. They were practically a Communist Worker's Paradise they were so far to the left. All the assets and infrastructure were owned by the Provincial Government, and everyone lived in Government Shelters. Alberta was decidedly Anarchist/Civil Libertarian. Anyone who was Pro-gun or didn't want the Government taking care of them quickly moved to the province of Alberta until Quebec started draconian measures to keep their subjects in place, like surrendering all their property to the State before they could get permission to emigrate to Alberta or other states. Even with the draconian surrender policy, thousands of people still moved to Alberta. The Quebec

Government, seeing a huge drain in their talent pool and tax base, enacted more and more draconian measures, and finally started building a fence. When Gilbert Jennings, the governor of Quebec, realized that most of his prominent businessmen, and the bulk of his tax base, had fled to Alberta, taking their money and expertise with them, he ordered the State Police to arrest them and bring them back for trial. The JBT's who had gotten their jobs based on their ability to blindly follow orders, were sent into Alberta, and were promptly caught and hung by Citizen Militias when they confessed they were there to take people living in Alberta back to Quebec. The citizens of Alberta realized that was tantamount to kidnapping, charged the JBT's with attempted kidnapping, and hung them the next morning. When Gilbert found out, he threw a snit fit. "Those Vicious Brutes, how dare they kill my Agents. I'll show them!"

This time, instead of sending 5 agents, he sent 50, with the same results. He called up the Governor of Alberta to protest, who told Gilbert to go do something obscenely impossible to himself, not realizing that he might enjoy it! The Governor of Alberta told his Federation Representative what had happened, and that he feared an attack by Quebec - not that it would work, but that he'd have to waste resources burying the bodies. The representative sent out a voice mail to the rest of the representatives, who agreed to meet in 1 week in Topeka Kansas. The following Federation Council meeting was lively to say the least. At their first meeting, they set a rule that any motion had to pass with a 3/4 super-majority. Ron made a motion to censure the government of Quebec for illegally attacking Alberta. Their representative tried to weasel out of it, but Ron wouldn't let him off the hook. "We were trying to capture citizens who had left Quebec illegally, and the agents we sent were executed by an illegal mob."

The Alberta Representative immediately rose in defense. "Actually what had happened was several businessmen decided to move from Quebec to Alberta when they discovered the confiscatory taxes the Quebec Government was going to impose on all businesses. In some cases, it was in excess of 75% of the value of the product or service. No businessman in their right minds would want to work under an environment like that - that would constitute indentured servitude or slavery to the government. They legally left the state, and only took their personal property. The Militias are the state-recognized law enforcement in Alberta, since we have no organized police force. If they tried and executed the Jack Booted Thugs that Quebec sent to kidnap citizens of Alberta, the government of Alberta supports their actions!"

To several shouts of "Here...Here" Ron Williams rose and spoke "We have a Motion of Censure against the government of Quebec on the floor, do we have a second?"

The representative of Alberta rose and said "I second the motion!"

Ron called for a vote "Councilors, we have a motion, it's been seconded - I need a show of hands for those who approve the motion."

The hall contained 72 Councilors. Ron knew for the motion to pass, he needed 54 votes for the

motion. When the Secretary finished counting, he announced. "The Motion passes with 71 Ayes, and 1 Nay." The Councilor from Quebec left in a huff. Ron guessed he was going to throw a snit in private.

Ron stood again "Councilors, it's self evident that the Federation needs to pass some basic Civil Rights that apply to all member states, in order to prevent this from happening again. I suggest the following.

1) Right to Travel - Citizens are free to immigrate from 1 state to another, with the permission of the state they are moving to. Travelers have the right to travel to any member state with no restrictions.

2) Right to Self Defense - Citizens have the right to self-defense. States have the right to place legitimate restrictions on that right, but they cannot disarm their citizens.

3) Right to Free Speech - Citizens have the right to speak against the Government without repercussion. This does not excuse Libel or Slander, and does NOT give a newspaper blanket immunity to print knowingly false stories, or without verifying the facts.

4) Right to Worship as they see fit - Citizens have the right to worship as they see fit, without government interference.

5) Right to Life/Due Process - No Citizen may be imprisoned, or killed without due process. No warrant-less searches.

Ron wanted an absolute right to Self Defense, but knew he would not get a super-majority to go along with that. He realized the compromise was the best he could hope for. The language of the law didn't say the state HAD to restrict the right, just that they could. The Councilors debated the proposed Bill of Rights for several days. Finally, there was a motion to approve the Bill of Rights as stated. Ron seconded the motion, and it passed with 54 Aye votes.

When Ron returned home, he was told that the world faced a critical shortage of petroleum products, and they needed a cheap replacement. He called his sons and the rest of the advisory board, and gave them the news. At their next meeting Q proposed that they convert everything they can to run on Hydrogen. Right before the CME hit, someone perfected a way to contain hydrogen gas in a stable gel, that was 100% safe and didn't require a pressure container. The gel compound was cheap to make, and could be recharged at a simple pumping station that replaced the hydrogen quickly and safely. The hydrogen could be transported and stored as gel, with a heater used to heat the gel to release the hydrogen. They could use their excess hydroelectric power to produce hydrogen with hydrolysis, and they could build huge Hydrolysis stations anywhere they had access to power, either solar, wind, or hydroelectric. Hydrogen was a cheap way of storing the power created by various means. All the houses, cars, and buildings

now had the Quantum Dot paint, which produced their own electricity, greatly reducing the need for generated power. Now they could use that generated power to make Hydrogen for storage and transport. Almost any existing motor could quickly and easily be converted to burn hydrogen. The most efficient use of Hydrogen looked to be the Automotive sector, where Q pointed out that using hydrogen instead of a huge battery bank would reduce the weight of hybrid cars even further. He was working on a Super Fuel Cell to replace the motor/generator set, but the power/weight ratio and power output wasn't where he wanted it yet. Ron sent an e-mail to the rest of the councilors and their respective governors, who agreed to the idea of using Hydrogen for portable power storage, and started a crash program to convert all automotive applications to hydrogen power.

With the reduction in the need for gasoline and diesel, he re-crunched the numbers, and they would have enough petroleum to make jet fuel, Avgas and diesel fuel for the military for another 50 years. He knew in 50 years that they'd develop a much better power source, so he considered the problem solved. Q told Ron that it would be real easy to convert existing jet engines to burn Hydrogen, and told him how. The gelled hydrogen fuel wasn't flammable, and the gas eliminated problems associated with jet fuels including water and other contaminants in the fuel, and was lighter and safer. It would also greatly extend the range of jet engines compared to regular jet fuel even including the weight of the gel. Ron told him to make it happen. Q started to convert all of Allakaket Airlines planes, Gooney Birds, helicopters, etc. to Hydrogen. 6 months later, Q e-mailed all the Military bases with detailed instructions to convert their jets to Hydrogen fuel. Mountain Home had the huge Hydroelectric plant 25 miles away, and could make as much hydrogen as they could use, and have tons left for export. Their CO authorized the mechanics to convert all their jets to hydrogen power. Slowly the North American Federation converted to gelled Hydrogen as a portable fuel source. Ron e-mailed the data to the other Federations, who implemented the suggestions as they were able.

6 months later, hydrogen powered tanker trucks were delivering gelled hydrogen to filling stations powered by a roof full of Quantum dots. Once the transfer hoses were connected, a heater heated the gel, converting the hydrogen to gas, and transferring it to the storage tank under the filling station, where it was absorbed by the gel in the storage tank. Once the hydrogen was encapsulated in gel, it was non-flammable and perfectly safe. The driver disconnected his hoses, and drove back to the power station to pick up another load of hydrogen. Later, vehicles of all descriptions were connected to the tanks through a meter that charged them by the cubic foot of hydrogen gas. The gas went into their holding tanks, where the gel absorbed it, rendering it safe. Several benefits of burning hydrogen were later discovered - the standard oil change interval went from 3,000 to over 10,000 miles, spark plugs lasted 10 times longer, and fuel mileage tripled along with horsepower. The manufacturers were able to downsize the engines, even further increasing fuel mileage. The major airlines, and the military had fully converted to gelled hydrogen fuel, with similar results. The new Federation Transportation Committee discovered that the few accidents they had didn't result in massive fires, like it used to when they were using jet fuel. The Gooney Birds could now fly

farther and carry greater loads since the hydrogen gel was 4 times as efficient as jet fuel, and the weight savings and efficiency made WTI even more profitable. The Supercruisers and Gooney Birds could make their own hydrogen when they were docked or anchored using their Quantum dots and sea water. The recombination process in their fuel cells generated 100% pure water, which took demand off their reverse osmosis desalinators, and increased their stored fresh water.

Q finally perfected the Super Fuel Cell, which produced 50KW and was the size of a suitcase. His bigger 1MW unit was the size of a refrigerator. They were even more efficient than the hydrogen powered engines, and soon locomotives and commercial vehicles had replaced all their conventional engines with Q's Super Fuel Cell and electric motors in the wheels. Several 4wd buffs installed the setup in their vehicles, and soon exceeded the off-road driving capabilities of the most advanced Military Vehicles. The military quickly caught on, and converted all existing vehicles to electromotive drive. Ron and Q decided to buy up all the surplus vehicles for pennies on the dollar and store them in case another CME hit.

Chapter 21 - Australia or Bust

Things had quieted down in the North American Federation. Quebec decided it was better to oppress their own citizens than risk the fury of their neighbors, who were better armed and trained. When Ron returned from Topeka, he had an E-mail waiting in his in-box from Jack Bannon in Australia.

Dear Ron Williams:

Things are going to hell in a handbasket in Australia. Here in the Territories, we've got plenty of food, water, and power, but no manufactured products, including diesel fuel or Jet fuel. Meanwhile in Sydney, they've got fuel and manufacturing plants, but no food. Various territorial governments are acting like kids in a sandbox, and won't share their toys. We've offered to buy or barter for fuel, but no one seems to care what happens outside of their little town or territory. I heard you are Alaska's representative to the North American Federation. Congratulations. I'm not asking for the entire Federation to help us out, but I'd appreciate if you could come over here and talk sense to the dunderheads running the territorial governments.

Sincerely,

Jack Bannon

Ron printed the letter, and presented it to the Allakaket Advisory Board at their next meeting. They debated what they were going to do, and finally Josh stood up.

"Ok, I've got a personal interest here because the Bannons are Sheila's parents, but still we should help out Australia, it's in our own best interest to keep a friendly democracy in power in that region. They've been our allies since World War Two, and they've always been loyal to us. Secondly, it won't cost us much to ship them enough Quantum dot technology and anything else they need to get everything up and running. With the manufacturing plants running 3 shifts, we've got tons of spares of everything. I propose that Ron and Nancy take a 100-person contingent to Australia with 2 Gooney Birds, 1 armed and 1 unarmed transport. Dad can fly the WIG SST to his meetings with the heads of state and have 5 heavily armed bodyguards with him to ensure his safety. Things have quieted down significantly here, and I'm sure he wouldn't have any problems recruiting a security force, and enough specialists to fix anything that needs fixing, or build stuff from scratch."

When Josh finished, Q said that if they included a bunch of 5KW fuel cells, the hydrogen gel technology, and enough Quantum dots to cover half of Australia, they could solve most of their fuel problems by converting to Hydrogen instead of relying on petroleum products. He'd ship 20 data sets with them containing everything they'd need to build everything he could remotely

think of. At this point, the rest of the board agreed to send Ron and Nancy, with 100 volunteers to Australia and try to get things running smoothly down there. When the meeting broke up, Ron e-mailed Jack, telling him they'd dock in Brisbane in a week or so, as soon as they got everything loaded.

Jack sent back a reply "Make sure you stay at least 10 miles off the coast - they've had problems with pirates along the coast, stopping and hijacking vessels."

Jack replied "We're coming loaded for bear - the first thing we'll do when we get there is take out the pirates, and free up your shipping lanes."

"Thanks - the Pirates aren't too bright, and are flying a black skull and crossbones from their masts. Any vessel flying that flag is fair game."

"Roger, we'll take care of it!"

Ron called the rest of the board, and got permission to add another 100 SEALs and Marines to the complement, and added another armed Gooney Bird to the convoy. They were hunting Pirates!

2 weeks later, everything was loaded and ready to go. Ron had explained the Rules of Engagement to the captains of the two armed Gooney Birds, and the pilots of the WIG SSTs and transports. Anything flying a pirate flag could be shot on sight, and he didn't care about prisoners. 14 hours later, they landed 20 miles off the coast of Australia near Brisbane, and offloaded 4 WIG/SSTs and 4 WIG transports loaded for bear. They separated into pairs and flew up to the coast, then flew north and south along the coast. Minutes later, the northernmost pair had a small contact on their radar scope. They closed within visual range, and they were flying the Jolly Roger. The gunner centered the pipper on the boat, selected guns, and fired a brief burst from the 20mm Vulcan gun, shredding the boat, which sank from sight with all hands. The pilot was tempted to do a Victory Roll, then realized WIG aircraft don't do aerobatics very well, so he waggled his wingtips, and set off to locate more pirates.

2 days later, there were no pirate vessels to be found between Sydney and the northern tip of Australia. One of the WIG Hovercraft located a survivor from a Pirate vessel, and brought him aboard for questioning. After several rough hours, the captain decided to make the pirate walk the plank. They extended a board out over the side, blindfolded and bound the pirate, who was screaming "You can't do this to me, I've got rights!" The captain, who had located an old Marine cutlass, used the point to encourage the scumbag pirate out further onto the plank. He lost his balance and tumbled into the ocean, fought for a second, then went under forever. Once the coast was clear, a WIG SST located a suitable landing area where the RAAF had beached Catalinas during the war, and the Gooney Birds rolled up nose-first out of the water, so they could unload their cargos. While the SST's were sweeping the seas clear of Pirates, Ron was

busy on the radio and telephone locating whoever was in charge of Brisbane, then flew to their offices with a 5-man SEAL bodyguard to negotiate and discuss the situation. It turned out the Territorial Governor was more than willing to trade, he just didn't have the infrastructure to transport stuff from Brisbane to the Northern Territories, since they were low on diesel fuel as well. Ron said "I can solve your problem right now" and described the process of converting all internal combustion engines and turbines to running on Hydrogen. Then he handed him a set of data chips and his laptop, and showed him how to do it, and schematic drawings for any parts that needed to be built. Ron suggested scavenging raw materials from Junkyards and Aircraft graveyards to build the necessary stuff. With that out of the way, he left a copy of the disks with the Governor, excused himself, and flew out to the ship to pick up Nancy to see Jack and Nellie again. At Mach 1.5 it didn't take long to reach the ship and fly to their station in the Northern Territories. Ron called ahead to tell Jack when they were arriving, and Jack was treated to the surprise of his life. One minute he was staring at empty desert, the next a big black plane with short stubby wings was hovering 50 feet in front of him, then slowly settled to the runway. As the turbine's whine decreased, Jack could see hatches popping open, and Ron and Nancy stepping out to greet him.

"Now that's what I call traveling in style! Just how fast does that thing go?"

"It can cruise at up to Mach 1.5 for over 5,000 miles, and hover to land in VSTOL mode."

"Cool, so where can I get one?"

"Sorry Jack, they're not for sale. NG was building them for us, and their factory was destroyed in the looting and rioting following the CME. We haven't located a manufacturer to build more since then."

"If you found someone, I think a lot of people might want one, even without the Vulcan gun and the missiles."

"You understand this is a Wing In Ground-effect Aircraft, and can't fly much higher than 200 feet unless it's hovering?"

"So, at Mach 1.5, you could get anywhere in Australia in a matter of an hour or so, instead of a whole day to cross the country that it takes now."

Ron thought that Jack might be on to something, and called Q. He said he wasn't doing anything pressing at the time. If they wanted to, he could build as many WIG/SST aircraft as he thought they could sell. Ron said he'd get back to him, and hung up. They drove to the Station, where Nellie greeted them like long-lost relations. They ended up spending a week at the station getting caught up with everything. Finally Ron said he had to get back to the ship and get back to work. He had a bunch of meetings to go to, and get everyone singing from the same

page in the Territorial Governments. Nellie and Jack hugged Ron and Nancy, then Ron flew back to the Goonie Bird, dropped off Nancy, picked up his guard force, topped off the Hydrogen tanks, then flew to Sydney and the other Territorial Capitols. It took several weeks, but Ron convinced them to work together, and they established regular communications between the territorial governments for the first time since the CME hit. They discovered that they really did need each other, that what 1 Territory was lacking, the other had in abundance. When he made the Quantum Dot technology available, and gave them 100 tons of Quantum dots to get started, they quickly painted as many large buildings with the QD material to take advantage of the "free" electricity. Several factories started manufacturing the Quantum Dot paint and selling it. Within the next two years, almost 100% of Australia was using electricity made by Quantum Dots.

While Ron was getting things organized, the CO of the armed Gooney Bird had located the headquarters of the pirates, at least on the Eastern coast of Australia, and decided to target the building with a laser-guided Slammer, using a WIG/SST to designate the building with their laser pod. The pirate they had captured told them where the headquarters were, and that there were no friendlies or innocent Civilians for miles around. They had taken over an abandoned dock and warehouses somewhere between Sidney and Brisbane. The SST made double-sure, then once the building was illuminated by their laser pod, the Gooney Bird fired 1 Slammer at the warehouse, destroying everything for almost a mile around it. The SST pilot radioed back "Bravo Zulu - No survivors." and returned to the Gooney Bird. Next they tackled the Western Australian coast, with similar results. Finally, when Ron was ready to go home, they had cleared the waters around Australia, and out to 100 miles of any known pirates.

On their way back, Ron decided to make a detour and check out conditions in Asia. The CO of the Armed Gooney Bird insisted that Ron ride in an armed WIG/SST with another one flying his wing for self-defense. He flew up the Vietnamese Coast, and around the entire area, including the coast of Mainland China. What he saw depressed him. There were few signs of life, and they were very scattered. When they overflew Japan and Taiwan, they didn't see much if any signs of survivors. He was afraid that Q's estimated 100% casualty figure in Asia might be right, between starvation, disease, and war, there were precious few people left. When they checked out New Zealand, it was in much better shape. The Philippines were somewhere in the middle of Australia and Japan. Sections were deserted and decimated - mostly the cities including Manilla, while the rural areas showed little or no damage or loss of life. Ron realized that in a few years, the Asian area would be available for colonization. They'd help any survivors, and live along side them, instead of replacing and removing them like the US did to the Native Americans.

Chapter 22 - Ambassador At Large

When Ron returned, his report on conditions in Australia, New Zealand, Asia, the Philippines and the rest of the area made it's way from the Governor's desk to the North American Federation. They unanimously agreed with his recommendations, and elected him an Ambassador At Large for the North American Federation. That meant that Alaska would need a new representative, since he'd be busy for the next 10-20 years getting Asia back on its feet. Ron flew back to Alaska to make plans and build the equipment they'd need to get food production, power and water to Asia. Between the Quantum Dots, and hydrolysis plants turning water into Hydrogen gas, the power was easy to fix. If they used fuel cells to make electricity from the stored hydrogen, they would manufacture thousands of gallons of pure water in the process. Food production in Asia wouldn't be a problem with the very fertile soil. What would be a problem would be getting the local farmers from subsistence farming to producing enough food to feed the rest of the people. With the hydrogen technology and simple machines, they could mechanize the process, and produce 10-100 times more food than they were currently able to.

Several Canadian provinces had Asian enclaves, and the call went out for volunteers to act as translators and assistants for a Federation project to rehabilitate their homeland. Thousands of Asians volunteered, and were screened for language abilities, reliability and other attributes they deemed vital to the mission. The Special Forces operators that were selected to go were already fluent in several Asian languages. Ron decided to start in the Philippines due to their location and infrastructure. They started in the villages, and eventually spread to the big cities of Manilla, Davo, and Quezon. With the Quantum Dots, hydrolysis, fuel cell and battery technology, the citizens slowly rebuilt their country. When they finished, they agreed to help rebuild the rest of the region. Next they tackled Indochina, then Japan, Korea, and China. The new technology jump-started the farmers and transformed them from subsistence farming to producing enough food to feed their village, then the region. They also experienced a population explosion now that they had the food to feed people. Doctors from the Asian enclaves of North America went back to their native countries to train new doctors, nurses, and health care professionals. Eventually they got to the point where they could manufacture their own medicines and supplies, and they turned the corner on their birth/death rates due to the better medical care.

While he was in Thailand, Ron suffered a fatal heart attack, and died just before his 80th birthday. Nancy flew his body home for burial, and decided to stay in Allakaket to be with her grandchildren. The entire town turned out for the funeral service, and the Williams clan now filled 1/3 of the new huge church. Ron had requested that he be cremated, and his ashes buried next to his mom and dad at their old house. With the secession of Alaska, the IRS didn't get a penny of Ron's money, which was divided among his heirs and several trust funds for various philanthropic functions including scholarships, research, and healthcare for indigent Alaskans.

The next year, the first class of Trainees graduated from The Academy as they called it, and were already busy teaching people in their communities self-defense and first-aid skills. Alaska and several other nation/states expanded their Militia and created 2 components - Active Militia and Reserves. You could either volunteer for the Active Militia any time after your 16th birthday, or by your 18th birthday, you served a compulsory 90-day training period and became part of the Reserve Militia with a basic issue including either a M -16 with or without the grenade launcher, or an H&K G-3, or a FAL or 1 of their few remaining M-1a rifles with a telescopic sight if you were a really good shot. Active Militia members were issued H&K G-3's or other weapons suitable for their duties. Maybe 10% of the Militia was Active and the remainder was either inactive or Reserve. The Militia had 3 duties: 1) Protect the citizens of the nation/state, 2) Assist with natural disaster relief, 3) Train Reserve and Inactive Reserve members. They had no duties outside their nation-state unless called up by a super-majority vote of the Federation Delegates to defend the Federation from outside attack. Inactive Reserve members were Militia members over the age of 50 who were not subject to call-out but were still capable of volunteering and providing useful skills like medical or comms.

Once the situation on Earth stabilized, the Federation decided that they needed to do something to keep everyone focused and not fighting each other. With the tremendous wealth of the new nation-states, they decided to re-evaluate their Space Program and set the goal of permanent colonies on the Moon and other planets, and eventually to leave the galaxy all together and investigate nearby galaxies including Alpha Centauri. They decided to abandon the archaic Space Shuttle program and vertical launch in favor of a horizontal launch system using a rocket sled and a maglev rail system. By now Q had been dead for almost a decade, and his "apprentices" were now the leading scientists and inventors of the Federation. They had each trained 50 students and apprentices, and were in a position to design and build a new 100% reusable launch system, and all the systems they'd need to live on the moon. Rick's son Steve was now in his 50's, and was the reigning Computer Expert, and had taken Q's basic computer design and quadrupled the speed and memory capacity. The computers were now so smart that they were truly Artificial Intelligence. Steve could carry on a conversation with a networked computer system programmed with the entire knowledge base they had extracted from the world's computers shortly before the big bang. Instead of a screen and stylus, he described what he wanted, and the computer itself designed it based on it's expert knowledge.

They build a shuttle-like craft, but 10 times bigger, made of a development of Q's composite, and covered with ablative ceramics to absorb the heat of re-entry. It was lighter than the original Space Shuttles, and 10 times stronger. The rocket Maglev sled carried the shuttle, and a ramjet booster along a Maglev track 50 miles long that turned upwards to a 70-degree incline. Nellis AFB/Dreamland had been shut down since shortly after the Big Bang, and they decided it was the perfect site for the new Space Launch facility. The Dry lake bed ran right into a 10 thousand foot mountain, and there wasn't anything around for hundreds of miles. Within 20 years they had a viable colony on the Moon, then another one on Mars. Finally they developed a faster-than-light drive they called the Hyperdrive, and tested it using a robotic ship, which

successfully flew back and forth to Alpha Centauri, recording all the flight data along the way. They built a much larger science/survey ship they christened the Daedalus, and after several unmanned test runs, they were ready to send a big scientific survey mission to the nearest galaxy.

David Williams was now over 100 years old, and was the last surviving son of Ron Williams. The Williams family was synonymous with wealth and power, and they had donated most of the funds needed to build the Daedalus from 1 of their philanthropic trusts. David's 20-year old great-granddaughter Samantha was to be the Commander of the Daedalus Mission, and he flew to Dreamland to see them off. His wife Heather had died years ago of Natural Causes, which was almost unheard of in this day and age of modern medicine. Almost everyone had biogenetic implants to replace or augment various organs or structures. David was one of the first recipients of the Williams Heart, and he also had the first artificial internally implanted kidneys. He'd already requested his Consciousness be implanted into a cybernetic intelligence when he died. Centuries ago, the wealthy and powerful tried to cryogenically preserve their bodies in the hopes that they could be woken up later and healed. It didn't work - when the power failed, the refrigeration circuits needed to keep their bodies super-frozen failed, and the warehouse soon filled with the smell of decaying dead rich people. Implanting in a Cybernetic Consciousness was virtually fool-proof, but cost over a million dollars, so only the super-wealthy could afford it.

David rode his powered wheelchair up to the VIP viewing stand, where Samantha met him, gave him a kiss and a hug, and then jogged to the Shuttle with her new husband for the quick hop to Luna 1, the lunar colony spaceport where Daedalus awaited them for their 20-year scientific journey. Once they were aboard and strapped in, the Solid Fuel rockets fired, and the Maglev sled disappeared from view in a cloud of rocket smoke. On the monitors, David could see the sled accelerating down the rail, then a rocket fired in the nose at the critical instant, helping the rocket sled to turn upwards, which was now headed up Mount Edwards at over Mach 2. Seconds later, when they ran out of track, the Shuttle jettisoned the now burned-out SRB sled, which floated back to Earth on parachutes. The massive twin ramjet engines took over, and accelerated the ship to 90% of escape velocity. As the oxygen content of the atmosphere dropped below what was required to power the ramjets, oxidizers were added to the fuel mixture, and they continued to accelerate until they reached the edge of space and the ramjets ran out of fuel and were in turn jettisoned to return to Earth and land on their own parachute system. The main engines fired briefly to accelerate the craft to escape velocity, then shut down until they reached the moon days later.

With all the excitement over, David turned around and wheeled back to his huge limousine/van, followed by his personal bodyguard and Chauffeur. He drove right into the vehicle, which automatically parked the wheelchair, locked it in place, and connected the power leads for his life support systems. They drove back to his research laboratory while Samantha's shuttle was heading to the Moon. David thought back to all the things that had happened since that day

when the Sun threw everything it had at the World. Humanity almost didn't make it, but thanks to the foreknowledge and assets of his famous father, they managed to not only survive, but make the world a truly better place. Everyone was as free as they could be. Crime was virtually unheard of, as was poverty and hunger. Energy was so cheap that no one bothered commercializing it, and spent their time building things that no one had thought of before. The rampant commercialism that had almost collapsed the world economy was replaced by a serious work ethic, and the betterment of self and Mankind. True, there still were problems, but Mankind had learned to Adapt, Improvise, and Overcome.

The End