Presidential Emergency Facility
Site 2 - "Cannonball"
Atop Cross Mountain, near Mercersburg, PA

Cross Mountain Pa.	
 View of Cannonball from the access rd.	
Elevation	2,062 feet (628 m)
Location	
Location	Franklin County, Pennsylvania, USA
Range	Appalachian Mountains
Coordinates	39.728313 N -77.992115 W

Cross Mountain is the highest peak in the Bear Pond Mountains, a sub range of the Appalachian Mountains. This grouping of mountains straddles the Maryland and Pennsylvania border. Cross Mountain and Hearthstone Mountain 2,021 feet (616 m) which is on the Maryland side, form a unique geologic formation known as the "Punchbowl". This feature was created by the weathered shale's of the Ordovician age in the center of a south-plunging anticline, having been eroded to expose a large amphitheater like feature (punchbowl). Cross and Hearthstone Mountains are made of hard resistant quartzite of the Tuscarora Formation of the Silurian age. Cross Mountain is also the site of a deactivated microwave relay station that was used during the Cold War. The unit was encased in a 103 ft. tower, and known as the "Cannonball" site 2. The site was closed in 1977. Access to the summit is still restricted.

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Tower History and Purpose

Construction of Cannonball tower was complete during the late 50's to early 60's. Originally named "Concrete", the cylindrical tower, renamed "Cannonball" in 1965, was built on the site that once was a fire-watch tower and had a fire-tower legacy two-room cabin within the PEF security fence. The concrete M/W tower was part of a Presidential Emergency Facility microwave network designed to provide communications to the President of the United States and emergency communications in the event of a nuclear attack. The M/W network connected Camp David and other key bodies of government directly to the White House.

The Cylindrical Tower

The Cannonball tower is approximately 103 feet tall and 25 feet in outside diameter, constructed of reinforced concrete with walls about 15 inches thick. It has no windows and entrance is through a single exterior door (not shown).The recessed section at the top is a two-level antenna deck, which was completely enclosed by two circular rows of Plexiglas panels, coated with opaque paint. Behind each row of panels is space for mounting the parabolic microwave antennas ("dishes"), six feet in diameter, which linked Cannonball with other stations in the network. The panels allowed radio waves to pass through but prevented the curious from seeing where the dishes pointed, and thus locating the other towers. Due to vandalism, only fragments of the panels remain in place. The dishes themselves are gone, too - as is all of the tower's communications equipment.

Cannonball appears to have a single basement level which is of the same diameter as the above-ground floors. However, this could not be positively determined because the space was almost completely full of water.

The Doorway

The tower's sole entrance was secured by a heavy steel blast door - essentially a vault door - which was welded shut when the tower was abandoned in 1977. Despite that precaution, the door has been stolen. Only the frame and attached hinges remain.

The circular opening above the doorway is the exhaust for the tower's ventilation system.

The rectangular outline surrounding the doorway and the vertical pieces of lumber attached to the wall with the bolts protruding from the wall and stoop suggest that the tower had an enclosed porch.

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The "Foyer"

This photo shows the tower's entrance area, as seen from just inside the exterior doorway. The rusted door frame at the extreme left leads into what was probably a decontamination booth. The two vertical bars in the background, at the center of the image, are guide rails for an electric elevator which ran from the basement to the floor just below the antenna deck. The doorway at the center, under the "snakes" graffito, gives access to the ground floor's main room.

Decontamination Booth

This small room is immediately to the left of a person entering the tower. The operation of its door (now missing) was coordinated with that of the exterior door by a mechanical linkage in the doorframe, so that both doors could not be open at the same time.

Note: The Cannonball facility is now located on private property and not accessible to the public. It was visited and photographed by special permission from the owners. The tower has deteriorated very badly over the years since its closing.

Entranceway into Cannonball Tower (2011)

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Near Mercersburg Pa. on Cross Mountain, a peak in the Bear Skin Mountain chain, are the remains of a cylindrical, poured concrete tower. This facility was a hardened, manned communications relay station operated by the US Navy in the 1960s and part of the 1970s. The site was a Presidential Emergency Support Facility, operated by the Navy's Special Programs Office on behalf of the White House Military Office and the White House Communications Agency (WHCA).

It doesn't look too impressive from the air, but the tower is 103' tall (atop a 2062' mountain) & has a diameter of about 30', people worked and lived inside here

While this mountaintop site is easily visible from miles away, finding the access road that leads up the steep slope to it is a different story. Once the access road is located, the next problem is gaining legal access to the property, especially since the road is securely gated. I obtained legal access several years ago, and briefly explored the site. About 50' feet up the road from the gate is an old sign indicating something along the lines of "No Trespassing, US Government Reservation." The sign had been taken down and was lying next to the sign post. The paved road is narrow and very steep, winding on for about three miles from the bottom gate to peak. The view from the peak is quite extensive (and of course even greater from the top of the tower).

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Entrance and Access Rd. to Cannonball Tower (2010)

The grounds near the tower consist of a flat grassy area that was treeless (probably a former grass helipad or low/high frequency antenna site), the foundation of a former garage/maintenance structure, and a concrete pit approximately10’ x 12’ and 10’ deep that were filled various pieces of junk, an old bed mattress, miscellaneous chemical drums, etc. The original use of this pit was to house the power transformers and the emergency generator.


The emergency generator and power transformers were located it this pit.

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The generator pit filled with debris

Most of the surrounding area was wooded; with evidence of recent logging activity probably someone getting firewood. One concrete block with an eye ring in it was observed about 50 feet from the tower, it was probably an old antenna guy wire anchor block. There was also evidence of an old gate that would have crossed the access road just prior to reaching the clearing (helipad) at the top of the Mountain.

The helipad and tower from the front gate

The old garage floor and foundation

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Sole entrance/exit (blast door is missing) in 1999, steel plate covers entrance in 2011

The tower was entered by walking up one or two concrete steps, through an entranceway that based on the door frame, once had a vault-like door. The first chamber entered was the decontamination room, where you'd remove contaminated clothing & shower, then be let into another small room (walled with pink tile, ROBERTSON 39 MADE IN USA cast on the back of the tiles) to put on clean clothes before finally entering main ground floor area. There was a 1'x l' window which would allow someone inside the second room to observe a person entering the bunker and decontaminating before they were allowed into the second small room.


First floor entrance, Decon room with pass through and changing area

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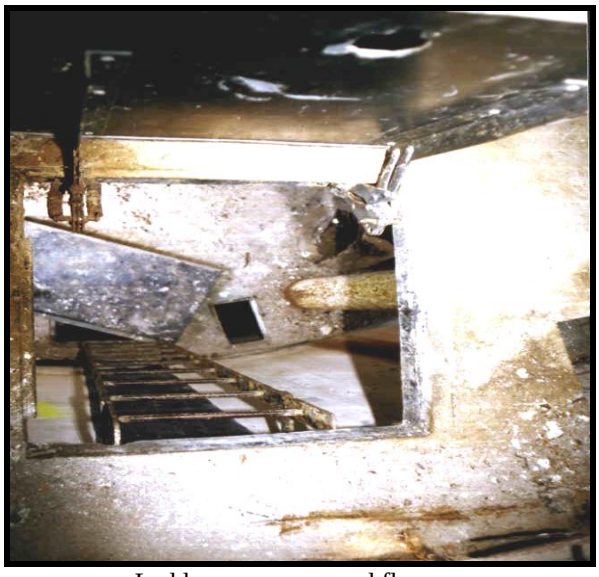
The main ground floor at the entrance was mostly open, with an old elevator on the far wall, and small (frail) metal loops built into another wall forming a ladder which would let you climb up to next floor level. A metal hatch could close off each level from the ladder way. This was probably to prevent someone on an upper level accidentally falling through if walking in the vicinity of the ladder opening.

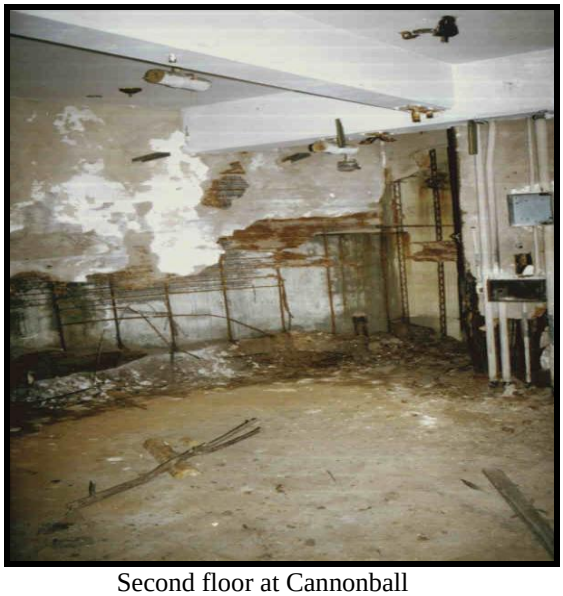
Decontamination changing station

(Otis) elevator shaft, Note all of the misc. water pipes, power, and air ducts.

There was at least one level below ground, but it was of indeterminable size due to it being flooded. US Army Corps of Engineers records indicate it was small and just used for storage.



Ladder way on second floor



Second floor at Cannonball

Microwave Radio Relay Site
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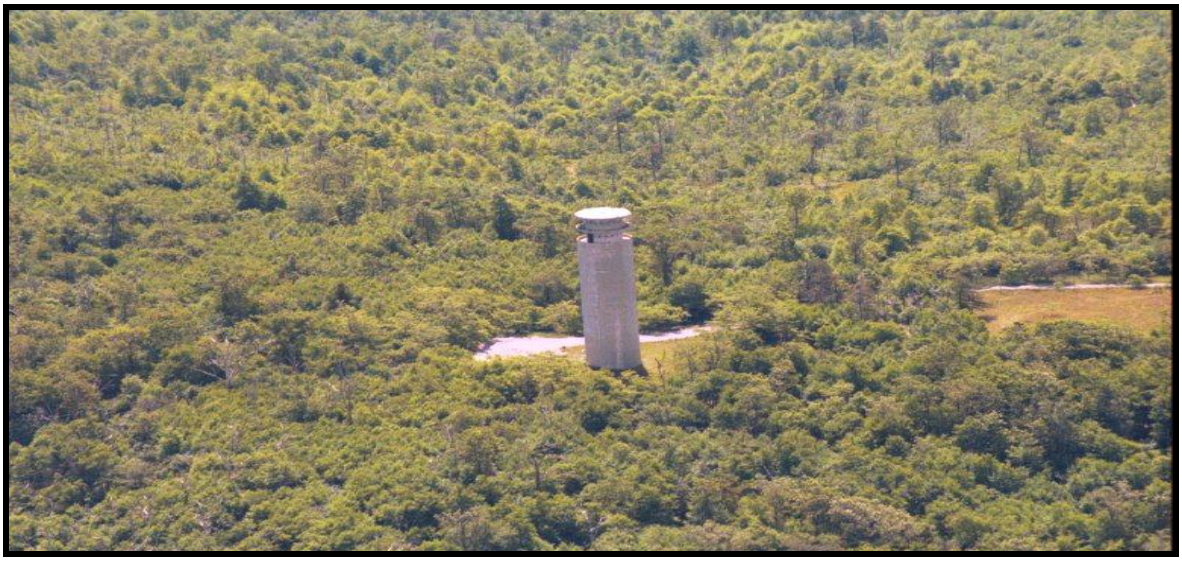
However a second-hand report from a local person is that the basement level was large enough that a friend of his used to ice-skate in it during the winter, when whatever quantity of water in there at the time had frozen! Another source claims to have explored the site in the late 1970s, shortly after it was vacated by the government recollects the basement level as being “... large, with lots of old equipment in it."

Exterior walls consist of steel reinforced concrete, with a thickness of approximately 16 inches and the interior diameter of the structure is about 29.9 feet. The tower had approximately 7 interior levels above ground, each having a 9 foot height. Floor/ceiling slabs are about five inches thick. All floors were explored by me, though I couldn't spend a lot of time in each because I needed to get out of there and head back down the treacherous access road before dark. Each level had at least an inch of dirt and bird or bat guano on the floors. layout was usually the same, except for one or two levels that apparently had a living area and galley, with storage closets.



Ariel view of Cannonball tower

These levels were painted with a light green hue (probably supposed to be psychologically appealing), and were divided into smaller rooms and closets with normal 2x4s and plasterboard.

Most floors apparently had a center equipment rack hanging down from the ceiling via springs (shock-mounts). Though it wasn't apparent during my exploration, the flooring on each level was also mounted on springs to help absorb the shock of a nuclear blast. Personnel assigned to the site gradually got accustomed to walking carefully to avoid causing the floors to bounce. Each level had the elevator shaft running up a side, with various ventilation ducts, old electrical paneling and with pipes that apparently contained electrical conduit.

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The top level was reached by climbing a makeshift wooden ladder near the center of the previous floor -- the original access method had been removed, probably for safety reasons. This Penthouse level had a large doorway (door missing) leading to an exterior 'balcony' which went all the way around the structure, and a small circular hatch also leading out. The circular hatch for this level was found on the ground, and was made by a company that made hatches for the US Navy. This floor level had approximately 20' from floor to ceiling, with an interior metal gangway going around at about the halfway point. Approximately 6' and 15' above the floor in a ring around the wall were large 'porthole' type openings, spaced about 2' apart. They were used for mounting microwave antennas. The exterior balcony area at one time was enclosed with a 1/2" thick Lexan or Plexiglas type material (samples taken), which was coated on one side by a bluish-gray material. Jagged pieces of Plexiglas are still in place on the tower, and extreme care must be taken when on the ground in the vicinity of the tower so as not to be hit with a piece that might falloff! Interior walls near the upper gangway area had signs painted onto the walls, but the lettering was blackened out. I am assuming the blacked out lettering identified other classified sites --perhaps some still in operation-- that each microwave antenna was aligned with.

The top two floors were the antenna decks originally enclosed by Plexiglas

The exterior had a metallic support loop with platform/gantry way also, apparently to allow workers access to upper tier of microwave antennas. The 360 degree view from the exterior of the top level of the CANNONBALL facility was breathtaking. Factoring the mountain plus tower height above sea level, the visual horizon is 45.696 miles away, and the maximum VHF or UHF line of site distance is 65.803 miles. Of course, since the region is quite mountainous, those numbers are more theoretical than practical.

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The top tiers were home to microwave antennas, protected behind a Plexiglas cover (busted but shreds are still in place, and fall to the ground occasionally!) You can see the doorway on the upper left, which allowed personnel to adjust the antennas. It was a blast door, The flat open land clearing to the right was a helicopter landing zone, a large log periodic antenna was in-between the tower and the helicopter landing pad.

Plexiglas protected the microwave dishes on the top level from weather elements, and it was coated on the inside by a special, RF-transparent paint manufactured by Sherwin-Williams. The paint was purely an operational security measure -- it prevented anyone in the vicinity of the tower from seeing where the microwave antennas pointed and having clues as to where other classified sites linked by microwave with Cannonball were.

Cannonball Tower (2011)

The specific mission of the CANNONBALL site is unknown, however it seems to have been a National Command Authority communications relay site for use during Trans and post nuclear war scenarios. Communications systems known to have been in use at this and similar sites include VLF/LF, HF, VHF and UHF (microwave) radio. Some sites additionally had small telephone switchboards. Perhaps these sites were redundant communications outlets for other senior command facilities in the area such as Site-R or Camp David. And/or perhaps they were primary communications relay sites for secret emergency relocation centers, and linked Site-R, Camp David, Mount Weather, the Greenbrier Bunker, and the National Emergency Command Post Afloat,

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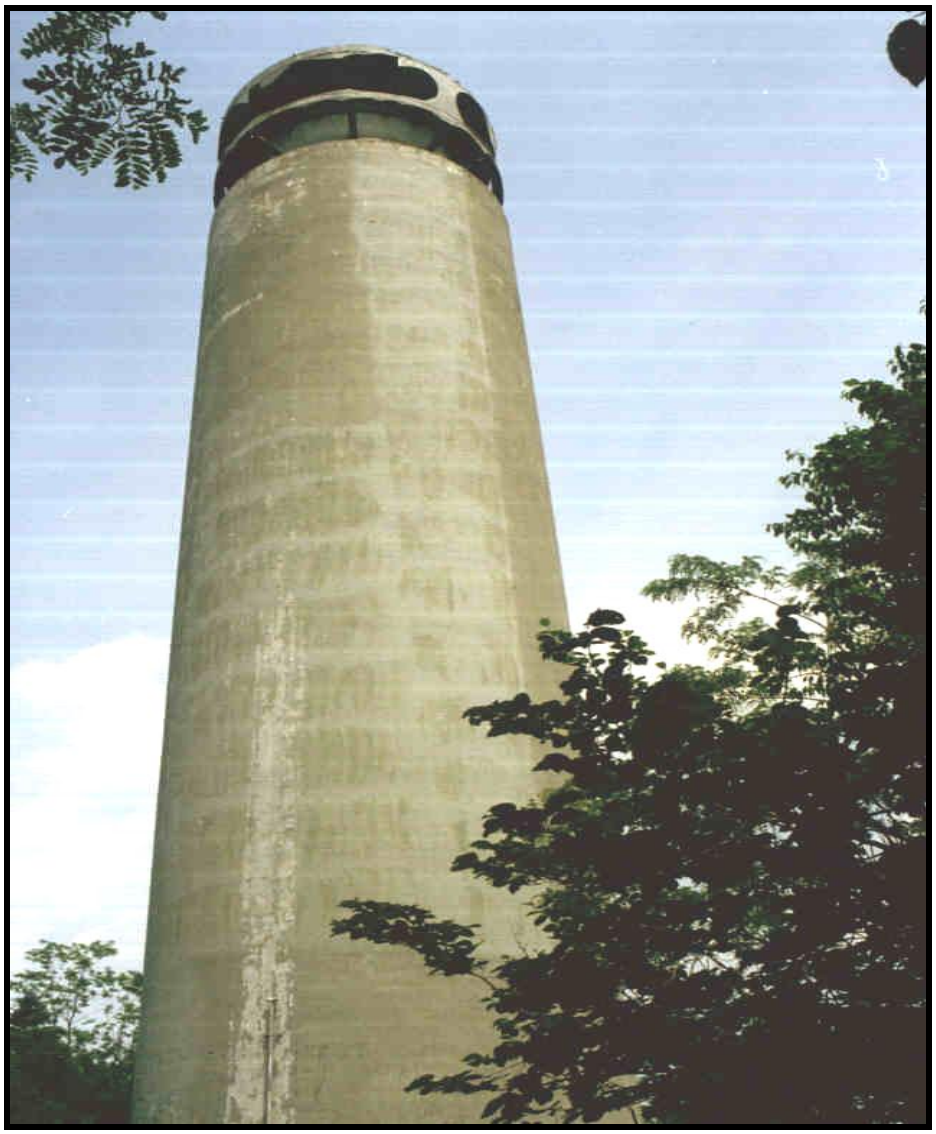
As a Navy operated communications facility under the operational control of the White House Military Office and White House Communications Agency, this presidential emergency communications station had the CANNONBALL codename, which was probably also used as a static radio call sign for the site. For communications over long haul high frequency radio nets normally operated by Army Strategic Communications Command on behalf of the Joint Chiefs of Staff, the Cannonball tower was allocated the "audio call sign WAR-45. Other similar sites (also deactivated) are known to have been located in or near Camp David Maryland, Mount Weather Virginia, and Brandywine West Virginia.



103' tower, "The broken Plexiglas layer at the top is quite visible. A sharp piece falling from the top could kill!

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Cross Mountain (note the tower on the summit)

In March of 1967 I was permanently assigned to a microwave relay site named Cannonball. It was located on Cross Mountain, near Mercersburg Pennsylvania. I was assigned permanently along with a Navy Seabee (Al Jensen). I was responsible for the overall operation and communications and Al was responsible for maintenance of the tower and grounds. Two Microwave maintenance men would rotate in on a weekly basis from Cactus. They would be confined to the site for that week.

While we were TDY at Cannonball cooking was the pits, especially when you lived off of TV dinners and Bologna sandwiches, but when I was assigned permanently to Cannonball I could at least go home and eat good cooking. I can remember some of the Guys broke into the C-rations that we stored on site for emergencies, just to get to the 20 year old Chesterfield, Pall Mall, and Lucky Strike cigarettes. They had to have been desperate and I guess they considered it an emergency, to smoke those things although he never admitted it I know it was Denny McLeod.

I can also remember that the worst sound in the world was the GQ (General Quarters) alarm, especially when it went off in the middle of the night while we were sound asleep. I am surprised that we didn't suffer some sort of hearing loss! I can remember that the reset button didn't always work, was on the 8th floor and the bunks were on the 6th floor so that thing continued to ring until someone made it to the 8th. Floor and reset it. There were detectors on the roof for percussion, flash, and radiation (nuclear blast) and sometimes during storms lightning would find ways to set off the flash and/or percussion sensors. What a nightmare when up there in your underwear and the monster just wouldn't shut up!

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The gate that allowed entrance to the site as was located at the top just as you entered the clearing with the chopper pad on the left and on the right there was two silver I-beams with a chain stretched between them this was to block access to the ridge going across to the AT&T site. The perimeter fence ran along the tree line and enclosed the entire grounds surrounding the tower. At the time there was no gate at the bottom of the mountain in 1970. Of course the gate was locked and the fence had three strands of barbed wire on top. There were several telephone poles with red beacon lights just outside of the fence that marked the pad for night landings and there were two red beacons on the top the tower. There were only a couple of night landings while I worked at Cannonball. It appears that everything was removed or cut down from recent photos.

The chopper pad looking at the front gate from the tower

All of the PEF sites had an area that was usable to fly in personnel, equipment or supplies as needed by chopper. There were marker lights installed at Cannonball and Cowpuncher that could be used for all night landings, The Executive Flight Detachment would regularly fly training exercises where Marine One or Army One would practice landings and takeoffs. Each site had a UHF radio to communicate with the aircraft. When they were five minutes out we would go into the garage and wheel a fire extinguisher down to the edge of the pad and standby in case of a problem. There was one emergency landing that took place on one of these flights, the aircraft sprung a leak in one of their hydraulic lines and had to make an emergency landing. They then called Ft. Belvoir for help. While they were waiting for the maintenance crew to arrive, everyone wiped down the chopper the pilot told me that the last thing they wanted to do was damage the paint job on a Presidential Helicopter! That's one of the more exciting things that happened up there, was usually pretty mundane.

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It was a routine beautiful day and Al Jensen our resident Seabee was out doing maintenance on the red aero lights on the poles by the perimeter fence (for night helicopter landings). Eventually someone said "I wonder where Al is" so I went out to see. I went back into the tower and said to Jim Wallius "you have got to come out and see this". I picked up got a long handle shovel and we walked out to see Al. As we stood there laughing, Al unleashed his entire Navy and New Jersey list of swear words at us. There was a sizable timber rattlesnake at the base of the pole that Al was on. After a bit (Al thought it was forever), I chopped off the head of the snake with one quick swing and Al shakily climbed down from his perch. Al had a few encounters with varmints.

There was the old cabin next to the garage? We used it for storage and Al had it pretty organized at the end of his tour of duty. In early 1967 the cabin was a mess; everything was just thrown in there and basically forgotten about. Al got the idea that we needed to clean out the cabin, so in he went, well he suddenly found himself face to face with a skunk. The skunk let it fly and so did Al. It took a couple of weeks before you could even open the door and go in for a few seconds. Decon was the bait and it finally got the skunk.

There was hardly any preparation for the ORI that was conducted at Cannonball in 1967 by the Military Aides Office. At the time we didn't have a printed SOP the procedures were quickly developed by Terry Fields and I just before it happened, we were notified in advance that it was going to take place. To the best of my knowledge there were none of the other locations involved in the exercise. All we did was to restore the microwave routes check the telephone system and check the FM radios. I think it was for show to the military aide, but it was fun. I didn't remember everyone that came up the mountain that day. Jim Wallius, Al Jensen (our Navy Seabee), Terry Fields (my predecessor), myself and one other TDY duty man got to play games for a few hours. I can't remember who else but Hugh Robinson the Army Military Aide, Mr. Fontaine and others joined us to simulate a nuclear attack and observe the procedures we had in place to respond to this emergency. They simulated a total power outage and we went through the tower making sure that all systems restored when the generator kicked in. If I remember correctly only one fuse blew on eight and that was replaced quickly. Poor Al had to check for any damage that might be accessed to the generators and transformer vault, as well as the outside HF antennas. This meant he had to dress in all of the CBR protective clothing including gas mask, booties, coveralls headgear etc. Now this was early summer and was warm day. So Al took some tools and a portable Able radio for communications and out he went. The first thing that happened was the radio died and I could not raise him, after about 10 min without knowing if he was still in the game, we decided to dress someone else (it could have been Jim) to go out and see what happened. About then Al came back in and went through the Decon chamber and the exercise was over. I GUESS WE DID ALRIGHT BECAUSE NONE OF US WERE TRANSFERRED. There was never another ORI ran again and I did not hear of any other location going through one. . I Talked to Terry Fields (my predecessor at Cannonball) only once after he left but like so many people that you knew and worked with you lose touch.

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Tower viewed from the chopper- pad (2011)

Tower viewed from access rd. (2002)

View of Cannonball from AT&T site at Hearthstone Mt.

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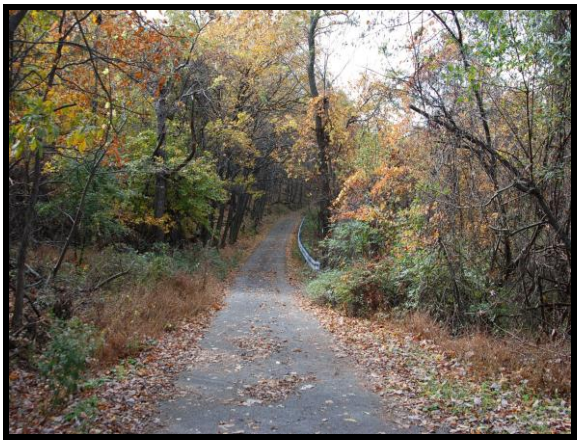
There's not a lot that I know about the AT&T facility at Hearthstone Mountain. It is an AT&T underground hardened site and is known as Hagerstown #2. On my first TDY trip to Cannonball in Jan. 1966 a 100 pr. underground cable that connected the two facilities was just turned up and tested. We had voice circuits going over there from Cactus but I never knew where they went once they got on to the AT&T network. I would test the circuits monthly with the AT&T guys and we talked about a few things. These guys were local and were most curious about the touch and go landings that the Presidential White Tops would do. I was over at Hearthstone there several times but no offer of a tour. I know that this was strictly a communications site and no missiles were ever installed. I never saw any satellite dishes or antennas at least none that were visible from the ground. I do know that WHCA looked at several of these locations nationwide for possible relocation sites. When I was in San Clemente I visited a hardened site in San Louis Obispo to see if it would be a suitable location. All of the equipment was on floors that were shock mounted and all of the environmental equipment was underground and safe from contamination.

About our ability to "blend in" 'we were all on "civilian status" and never wore military uniforms even when we were on military installations. None of the vehicles were marked in any way or even resemble a military vehicle. I had less trouble blending in with the general public (although we are talking the 1960's here) than I did on military installations. We had a Green 4WD International Scout and a later a Blue 4WD Dodge Ram (The Beast) to drive up and down the mountain. The 4WD Dodge Ram truck had a blade on the front, but the access road was very steep and narrow and we were lucky to reach the top with chains on all four tires. There was so much snow that the only way to push it over the side was to plow downhill. We had some pretty exciting times during the winter months. We also had a 5 ton snow plow to keep the access road clear during the winter. We had a 2.5 ton water tanker at Cannonball, and we would haul water up the mountain whenever we needed to top off the 8,000 gallon storage tank. Both vehicles were kept in a Butler Garage just outside the main entrance.

Tower viewed from access rd. (2002)



Access rd. to Tower in (2011)

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The water truck and the snow plow did not have radios, but we would take a portable radio (Able) with us just in case we had problems. I experienced several ice storms while at Cannonball, I can remember one that was so bad that we could only get half way up the mountain because the weight of the ice on the tree branches caused them to touch the ground and we just couldn't see the road. When we got to the top we had to break the ice off of the lock on the main gate and found everything covered with at least an inch of ice. The elements on the beam antennas were drooping so badly that they looked like a U the triangular towers were covered from top to bottom. I can remember that we all wore steel pots while we broke the ice off of the two towers. We kept them on when we plowed and salted the access road and retrieved the Beast. Winters there were so much fun, I will never forget the daily trips up and down the mountain. I don't believe that anyone ever got snowed in and couldn't leave to go home when they were scheduled to go.

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Entrance to access rd. January 2010

We had quite a few construction projects take place during the 1968 thru 1970 one was the construction of some Log Periodic HF antennas. The 80 ft. tower was equipped with a winch which allowed us to raise and lower the tower and antenna for maintenance. We spent a couple of months building the LP at Cannonball and adding a second three element beam to the rear of the garage. The plan was to have Cannonball become the remote transmitter site for Cactus. We also installed a four channel Multi-coupler on the fifth floor. I am not sure of the exact time frame but Cactus was also constructing a similar LP antenna I think it was going up behind the barracks and Mess Hall. I think the plan was to add additional transmitters because I was sent to the Naval Station at Norfolk VA., in May of 1969 for training on the AN/URT 23 and the AN/URR 1051(these units would become part of the CCT packages); however we would never receive any additional systems. Unfortunately we would never have the opportunity to really use the system as a remote transmitter because in the fall of 1969 during a severe storm the LP antenna was severely damaged and was never repaired.

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Base of the LP Antenna and Anchor for one of the Guy Wires

Another large project that we completed in 1969 was the shock mounting of the tower. Part of this project consisted of re-cabling the entire tower. We had a cable tied from the bottom of the elevator car to an old screw type cable terminal on the fifth floor inside the elevator shaft, which continued down to the MDF in the basement. On the inside of the car I wanted to replace the old, two line telephone with a key telephone set and I was making a box to put on the inside of the car to house the handsets and speakers for ABLE and the UHF radios so we could monitor calls and while we were at it I wanted to extend the alarms from the TCC-13's with both visual and audible indicators. I also decided to change out the old connecting block and put in a 66 type punch down block in the shaft. I think that Dan Maribelli was on the top of the elevator with me and Dennis McLeod was in the basement. Are you still with me? Off we go on top of the elevator to the fifth floor. I wedged myself in the water pipes, called down to Dennis to make sure that everything was unplugged on the key system and proceeded to cut out the old cable! Did I mention that the dykes that I used did not have insulated handles, well I got the shock of my life, and every time I tried to turn loose of the dykes I would hit another water pipe and my grip would tighten. Now I don't know how long this went on but Dennis hearing the pipes rattling started to look around and remembered we had 10 Hz, 105vac power supply mounted by the elevator control cabinet and pulled the plug. The absence of AC then allowed me to release the dykes but shot me out of the pipes and across the top of the elevator thank God that Dan was there to catch me! After collecting my faculties we finished the change out, but I bought 25 pairs of red plastic handle covers and put them on every tool we had in the tower with a cutting edge. All of the coax runs were also replaced during the tower shock mount project.

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I can tell you we spent six months "shock absorbing" the tower in early 1969; we moved all of the equipment floor by floor first down to the third floor then moved it back when the floors were finished. They were made of I beams covered with steel plates, the floor was then suspended with humungous springs that attached to the ceiling by cables. The floors could be adjusted so they could be leveled and suspended. I was weird because you could bounce and swing at the same time. They reinforced the elevator shaft and spring mounted all of the air handling units. Any one that came up there during this period of time can't forget this gem of a project especially living through all the equipment moves and the construction dirt. We actually completed the project swung all of the floors and returned to normal just before we closed down the facility. What a waste of time and resources because I am sure that someone was already planning this long before we actually completed construction. I believe that Cowpuncher was finished, but I was told that both towers at Crystal were complete but were closed without swinging the floors.

We were barely complete with the shock mount project when we were told that we would repave the access road and add quite a bit of new guard rail. This project lasted about a month. Quite an ambitious program considering that in a little more than a year later we closed down everything and Cannonball was officially closed in June of 1970.

Annotated Google Earth View of Cannonball Tower on Cross Mountain (2010)

Floor by Floor Description of the Cannonball Tower Facility

Antenna Deck: There were two levels that needed to be accessed. The lower external area was accessed through a single blast door a ladder then allowed assent to a catwalk which circled the tower. Internal access to the upper antenna area and the roof was accomplished by climbing a ladder first to a catwalk circling the interior wall then a ladder to the pressure hatch in the roof.

Eighth Floor: Eight systems of microwave equipment were installed on this floor. Three systems went to Cactus, three systems went to Cowpuncher and two systems went to Corkscrew. All maintenance spares for the radio equipment was stored on this floor. The facilities main power panel, for the emergency generator, air conditioning and lighting systems. All of the equipment in this room was mounted on a shock proof floor which was suspended from the ceiling by heavy steel springs.

Seventh Floor: This floor contained the dining area, the kitchen with a pantry full of C rations, and a rest room with shower. Since the tower was manned 7/24 this was the most used area in the facility.

Sixth Floor: Contained bunks and bedding for up to twelve people.

Fifth Floor: All of the voice multiplexing equipment for the microwave routes terminated here on voice patch panels. The FM mobile base stations and UHF air to ground terminal was also located on this floor. The Single Sideband (SSB) console was equipped with a 1 KW transmitter with two receivers and a DC patch panel for all TTY circuits with associated frequency shift keying (FSK) equipment. A four channel RF multi-coupler interfaced with a 32 ft. telescoping whip on the roof, a 40 ft. supported tower with a rotating three element beam, a 60 ft. supported tower with a rotating three element beam and a 60 ft. self-supporting steel lattice tower supporting a rotating log-periodic antenna. The primary use of this system was to provide presidential communications with worldwide communications as well as for any emergency situation. All of the equipment in this room was mounted on a shock proof floor which was suspended from the ceiling by heavy steel springs.

Fourth Floor: Was a secure Cryptographic Comm. Center. The entrance from the elevator was a steel door with a combination lock and the area around the floor hatches and ladder was enclosed by a steel wall and door. All lines coming into the comm. center were filtered from Radio Frequency Interference (RFI). All of the equipment in this room was mounted on a shock proof floor which was suspended from the ceiling by heavy steel springs.

Third Floor: The administrative office area contained work stations for four people. All necessary supplies were stored on this floor.

Floor by Floor Description of the Cannonball Tower Facility

Second Floor: This floor was the facility workshop; it was stocked with spare parts for all of the mechanical equipment. Tools necessary to complete any repair activity was also available for use.

First Floor and Entrance: The entrance was a 12 inch thick steel blast door that opened by using a hydraulic system. The first floor also had a radiation de-contamination station which consisted of a dressing room and a shower. There were supplies such as gas masks and other equipment necessary to detect or combat any Chemical, Biological or Nuclear contaminants. There was also a hot water tank located on this floor.

Basement: All of the facilities mechanical equipment was located here. The HVAC power panel, the air purification system, the elevator control panel, the water system pump and water chiller for the air handling units located on each floor. All of the telephone cables from external sources including a 100 pr. underground cable from the AT&T site at Hearthstone Mt. entered the building and terminated on the main distribution frame (MDF). The sites telephone key system was also located in the basement.

Buildings and grounds: The site had a fully functional helicopter pad, an emergency generator and garage, and an old two room cabin used to store equipment. The site had a 5 ton dump truck with snow plow and salt spreader to keep the access road passable in the winter. There was also a 1000gallon 2.5 ton water tanker to keep the water supply at capacity. A 40 ft, TV tower with a three element rotating beam antenna was attached to the rear of the garage and a 60 ft. TV tower with a three element rotating beam antenna was attached to the front of the garage. In the clearing between the tower and helicopter pad was a 60 ft self supporting, steel lattice, rotating, log-periodic antenna. This antenna could be lowered to the ground as required maintenance dictated.

The LP tower stood just beyond the trees

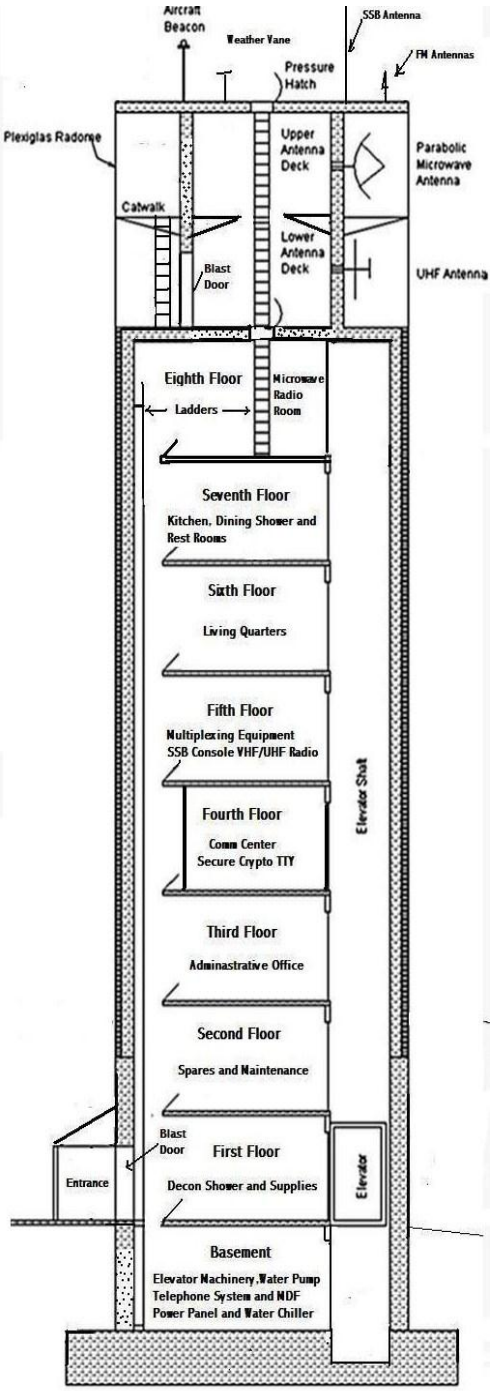
The turn around and parking area leaving the tower

Microwave Radio Relay Site
Cross Section View of Tower

Presidential Emergency Facility - Site 2

Cannonball

Cross Mountain Mercersburg Pa.



White House Military Office Memorandum on "Cannonball" (Site 2) Radio Relay Station

31 May 1988

MEM0RADUM FOR REC0RD

Sub: Current information on abandoned Site 2 (Cannonball) at Cross Mountain in Franklin County, Pennsylvania.

Encl: (1) Plan View of site2
(2) Pictures of Site 2

1, The Special Purpose Office (SPO) initiated an investigation of site 2 to determine If the White House Military Office (WHMO) or the Naval Facilities Engineering Command, Chesapeake Division(CHESHAVFACENGCOM) is responsible for the restoration of this abandoned, and in particular, the removal of an abandoned fuel tank at the facility. To date, our findings are that neither WHMO nor CHESHAVFACENGCOM is responsible for the existing facilities or able to fund safety and environmental improvements to this abandoned facility. However, it is imperative that both safety and environmental improvements occur soon.

2. On April 4, 1988, Ken Morin (CHESHAVFACENGCOM) and John Maxwell (SPO) visited site 2 to determine the status of an 8,000 gallon fue1 tank shown on Disclosure 1. The site investigation determined that the fuel tank and the rest of the facility are abandoned and deteriorating. After visiting the facility, it is our opinion that the environmental problems associated with an abandoned fuel tank pale in comparison to the life-safety hazards associated with the abandoned 103 foot high tower.

3. Enclosure 1 is a copy of a site plan, with notes describing the existing conditions. Enclosure 2 contains a number of photographs showing the current conditions. Below is a list of some of the environmental and safety hazards found at the site?

a. The tower is readily accessible to anyone that can get up the mountain and there are a number of signs which reveal that the tower has been visited by others. For example:

1. Pictures 1through 3 show that the plexiglas surrounding the top ring of the tower is almost completely broken off. This is not due to weathering or age, but rather is more likely due to vandalism from inside the tower.

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2. Pictures 4 through 5 shows that the ground level entrance door is missing. It is our understanding that the blast doors to such facilities were welded shut prior to abandonment. To remove such a door takes a great deal of effort.

3. Pictures 6 and 7 show the elevator shaft and the existing "stripped" condition within the facility. The wall finish insulation shown in Picture 6 is potentially asbestos material

4. Pictures 8 and 9 show the opening in the floor leading to the basement. Since there is no hatch here, this is a very hazardous situation for someone or something cou1d fall through this opening and be seriously injured. Note that the ladder, typical or ladders within the facility, is no longer attached to the wall. Henry Keyser (the young man that got us in the gate at the bottom of the hill) said that he and some friend's skate on the ice that forms in the basement during the winter. Mr. Keyser also said that he climbs the tower regularly.

5. Picture 10 shows graffiti written on the wall of the towers ground floor.

6. While at the site, Mr. Morin and Mr. Maxwell climbed to the top of the tower using the access ladder, during the climb we found garbage, a rope to ease top floor access, a missing rung that had been replaced with a tightly pulled coat hanger and there is total darkness on floors four through seven. Additionally, the ladder going up the tower is deteriorating, and when on the top floor of the tower, one feels a "swaying" sensation.

b. Pictures 11 through 15 are of the fill cap of an abandoned 2,500 gallon water tank.

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c. Pictures 15 through 18 are of the old transformer and generator vaults. Pictures 17 and 18 shows that a lot of debris has been accumulated in these vaults over the years. This area should be investigated to make sure that no PCB's were spilled when the potentially PCB filled transformers were removed. An open pit like this is a serious safety hazard.

d. Pictures 18 and 19 indicate that the 8,000 gallon fuel tank for the generator was abandoned in place. This area should be checked for possible soil contamination and the tank should be removed.

e. For some reason, a number of trees in the cleared area are dead.

4. As a minimum, the following short term steps should be taken: (1) secure the tower by permanently closing the ground level entrance. (2) Test for fuel contamination in the soil around the fuel tank (3) test for PCB contamination in the old transformer vault, and (4) remove the abandoned fuel tank (note that abandoned fuel tanks are to be reported to the EPA on an annual basis by statute). In the long run, the entire facility should be demolished and the site restored to natural conditions. The questions that must be answered prior to the accomplishment of these recommendations are (1) Who presently owns and is responsible for the property and (2) whose and/or what funds are available for the clean up/restoration (this question is at least in part dependant upon who currently owns the property). SPO has been trying to determine ownership over the last two months.

5. There are (4) leases and (1) deed of easement associated with Site 2 and they are as follows:

a. USACE lease #DA-49-080-ENG-4645 between the US Army Corps of Engineers and Earl and Centha Brant. From the description of the land leased, it is probably part of the roadway in Pennsylvania that leads to the tower. Our file contains an unsigned copy of the original lease dated 1 July 1959 and a signed original dated 11 August 1976. The original lease states that for no reason would it extend beyond 30 June 1984.

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b. USACE lease #DA-49-080-ENG-4368 between the Corp of Engineers and C.C. Glaser and Richard M Wolf. From the description of the land leased it is probably part of the roadway in Pennsylvania leading to the tower. Our file contains an unsigned copy of the lease dated 22 July 1959 and a signed original of the cancellation of lease dated 11 August 1976.The original lease states that for no reason would it extend beyond 30 June 1984.

c. USACE lease #DA-49-080-ENG-4675 between the Corp of Engineers and J Randall and Hallie G. Mattern. From the description of the land leased, it is probably part of the roadway in Pennsylvania that leads to the tower. Our file contains an unsigned copy of the lease dated 24 August 1959 and an unsigned copy of the cancellation of lease dated 11 August 1976.The original states that for no reason would it extend beyond 30 June 1984.

d. USACE lease #DA-49-080-ENG-4676 between the Corp of Engineers and Clifton M. and Cora M. Keefer. From the description of the land leased, it is probably part of the roadway in Pennsylvania that leads to the tower. Our file contains a signed copy of the lease dated 24 August 1959 and an unsigned copy of the cancellation of lease dated 11 August 1976.The original states that for no reason would it extend beyond 30 June 1984.

e. USACE lease/deed of easement #DA-18-020-ENG-3736 between the Corp of Engineers and the Rattle Run Gun Club. The land leased is the roadway leading to the tower from Maryland. Our file contains a signed copy of the signed deed dated 7 October 1965 and the DD 1354 where we transfer the property back to the Corp of Engineers.

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f. USACE lease #DA-49-080-ENG-4675, supplemental agreement # 1, between the Corp of Engineers and J Randall and Hallie G. Mattern. The land leased under the supplemental agreement definitely contains the parcel of land that site 2 was constructed and portions of the roadway leading to the site. In some of the documentation it is referred to as the "main site". Our file contains a copy of lease dated 26 February 1965.

6. From the incomplete documentation in our files, it appears that the Government believes that it has returned the property to the Mattern's. In a phone conservation on 27 May 1988 with Mr. Andrew Knapka of the Julian Post Office ((work) 814-355-0811, (home) 814-355-----), Mr. Maxwell found out that Mr. J. Randall Mattern died in 1970 and his wife Hallie died in 1976. The chances are that the Mattern's never knew that the property had been returned to them.

7. Mr. Knapka also gave the following information:

a. When the government first leased the property from the Mattern's there were other people with claims to the property. The Mattern's signed the lease because the government felt that they had the best claim to the land at the time.

b. Mr. Knapka indicated that he would share the information in his file on the land and the various claims to it.

c. The Mattern's have a son, Lt. Col. Henry K Mattern, USA, Retired and living in Huntsville, Alabama.

8. During our research of the facility, the following points of contacts have been established.

a. Pete Digel (301-962-3551). Mr. Digel works for the Army Corp of Engineers real estate division and had been researching the property prior to SPO involvement; however, he had completed his investigation, concluding that present ownership appears to be vested in no identifiable individual(s). Mr. Digel has been informed of all our findings and will be provided with a copy of this memo.

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b. Bill Piccirilli (301-962-3631). Mr. Piccirilli is an engineer with the US Army Corp of Engineers. His office is responsible for completing the Inventory Project Report (IPR) which determines if a project is eligible for funding under the Defense Environmental Restoration Program. Mr. Piccirilli indicates that his office cannot conduct an IRP until ownership is established. If it is determined that the facility is the property of the US Government, the site clean up would not be eligible for funding under the Defense Environmental Restoration Program and Mr. Piccirilli's office would not handle the contract. Mr. Piccirilli work address is:

CENAB-EN-MNUS
US Army engineer District, Baltimore
P.O. Box 1715
Baltimore, Md 21203-1715

c. Bob More Mr. More is the individual that will receive the IPR from Mr. Piccirilli's office if completed. Mr. More's office does the paper work to get a particular project funded for design and construction under the Defense Environmental Restoration Program. Mr. More's address is:

Commander Huntsville Division
US Army Corp of Engineers
CEMP-ED-PM
Attn: Bob More
P.O. Box 1600
Huntsville, Al. 35807-4301

d. Carol Robinson (home) ----------. Ms. Robinson works at the AT&T facility at Hearthstone Mountain about 1 mile from site 2. Ms. Robinson was very helpful in finding information about the Cross Mountain site.

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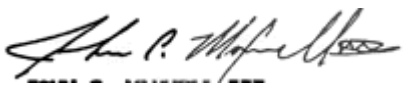
e. Roderick Rohrer (work 301-223-7872; home ----------). Mr. Rohrer is president of the Rattle Run Hunting Club. He felt that it would not be a problem for us to use his road if we chose to do work at the site and that he will bring the issue up at the next meeting of the hunting club.

f. Mr. Atherton and son, Henry Keyser ----------. Both live near the locked gate at the bottom of the mountain on the Pennsylvania side and have a key to the gate. Henry Keyser took Mr. Morin and Mr. Maxwell to the site on April 4th.

9. From the Available records on this site, SPO has been unable to determine ownership of the question property; however, the fact that is some individual(s) or sovereign (i.e. either the US Government or the Commonwealth of Pennsylvania) does possess legal title. Regardless of the question of legal title, the fact remains that the US Government was responsible for the construction of a facility on this property and would appear to have some responsibility (moral, if not legal) for the various hazards associated with this abandoned facility. Therefore as a minimum, the following actions should be undertaken:

a. As a temporary solution the US Government should have the tower entrance closed and secured. SPO could assume this responsibility, using resources using resources available to us.

b. WHMO should encourage the Corp of Engineers to make this project a high priority and secure the necessary funding to demolish the abandoned facility and to restore the ground to natural conditions.



John C Maxwell III

Copy to:
1) Pete Digel, Real Estate Division, US Army Corp of Engineers
2) Bill Piccirilli, Baltimore District, Us Army Corp of Engineers

White House Military Office Memorandum on "Cannonball" (Site 2) Radio Relay Station