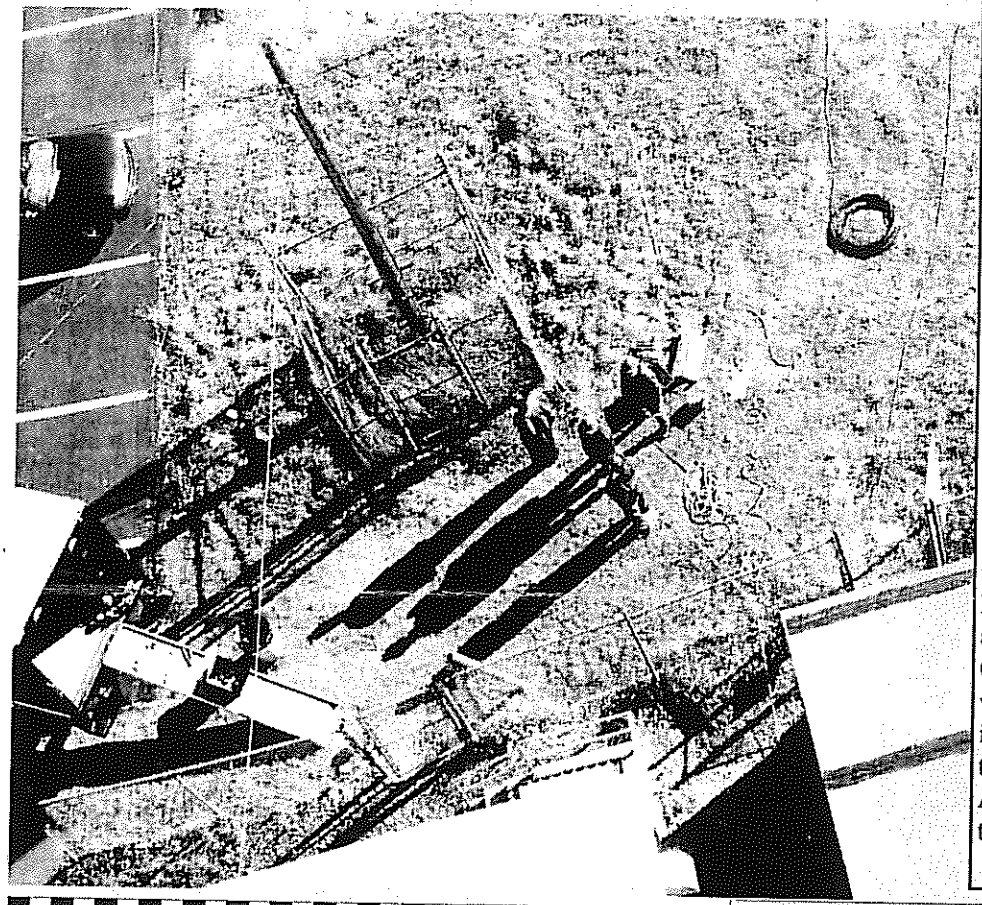
The Minuteman

Volume 28 Issue 3

January 1999

View From The Top.....

Slygo Gets Antenna-Lift



This is the view you get when you lean over the railing on the Rocketship and look down. Jeff and Chuck had this view for most of the day on Sunday, November 22. They were both on the tower making changes to two antenna systems and adding a third...but let us not get ahead of ourselves.

You remember Bryan (W1BRI), he's the guy who keeps showing up in these newsletters as one who does a pile of work on our systems. You might also remember that he built a 6 meter repeater, with its receiver sited at Slygo. For a long time he's been eager to get an antenna for that system up on the Rocketship. The rest of us were with him...a popular saying was that "...we get that 6 meter antenna up near the top, it'll hear a gnat break wind in Hartford."

As desirable as it was, putting the antenna up there met a lot of difficulty. The worst of it was that the City of Marlborough was not willing to have amateur climbers on the tower. Don Cusson made it clear to us that the City wanted only professionals with the right insurance up there. Don is the director of the Marlborough Emergency Management Agency, and is responsible for the Slygo towers. He was sympathetic to our needs,

(Continued on page 2)

President's Corner

Since I'm giving myself only a little corner this issue, I'll only say that you should enjoy the article about the Slygo project.

Our meeting this month features Bud Thorpe giving a talk about Emergency Medical Response to Terrorism. Bud is the Director of Education for American Medical Response Northeast.

Our local Emergency Medical Services (EMS) are increasingly finding themselves faced with planning for a response to a terrorist act involving weapons of mass destruction. Bud's talk will provide an overview of the Domestic Preparedness Program, including a review of NBC weapons, and the unique challenges presented to EMS response to terrorist acts.

See you at the meeting.

JANUARY MEMBERSHIP MEETING

WEDNESDAY, JAN 20, 1998 - 1930 HRS

CAMPION CENTER, WESTON MA

PROGRAM:

Emergency Medical Response to Terrorisom

Bud Thorpe

Raffle

Other Stuff

Slygo Project.....

(Continued from page 1)

but the legal counsel for the City insisted on having the insurance. So we were sort of stuck...we did try a couple of times to "piggyback" onto tower work to be done by the cell phone companies, but to no avail.

Enter Bill Thorpe (WA1NLR)...Bill has been in the radio business for years. He has recently been in the tower management business, and had crews that did work all over New England. In the last year or so, Bill has become very active in the MMRA. On lots of Saturdays you can hear him roaming around with the fox hunting group. Last October, Bill made an offer that we could not turn down: Since he has the necessary insurance, he offered to get a couple of the people who have done tower work for him to spend a day on the Rocketship. The cost was to be far less than it would have been had we hired a tower crew in the open market.

When we told Don Cusson of our plans, he asked us to have Bill fax him a copy of the insurance certificate. Within a couple of days, we had approval from the City. Since the holidays were fast approaching, we had only a couple of windows of opportunity...we chose Sunday, November 22, and began crossing toes and fingers for good weather.

Since we had the opportunity to get on the tower, Andy (N1BHI) wanted to add to the plans the replacement of the 449.925 antenna. He pointed out that the existing antenna had been put there about 15 years ago - more than twice the amount of time one can expect a SuperStationmaster to last when top mounted. He asked Bill to select the best replacement antenna - one that would last a really long time. Bill selected the Decibel Products DB638-B. This antenna does not have a whippy radome like the Stationmasters; it has a thick - about 3 inches - tubular radome. It's rated to withstand winds of 175 mph. Bill ordered the antenna; it arrived on the Thursday before the antenna party.

Bryan had a PD83 all set, with feedline, for the 6 meter receiver. He checked with the 147.27 group to see if we could use the mounting point for an antenna they were no longer using and they agreed.

The third project was to replace the 2 meter antenna being used by the packet and APRS systems with a triband vertical. This would give us both 220 and UFH radiators. The original plan was to use the UHF capability for the 6 meter link to the transmitter site. The 220 radiator could serve for 223.94.

Bill was concerned; the amount of work we had defined was possible in one day...but only if *nothing* went wrong.

Sunday dawned clear and warm for the time of year, and the crew began assembling at 7 A.M. Bryan (W1BRI), Ed (N1NOM), Paul (N1ZCB), Dave (KT1X), Roger (N1NUS), Dick (N1ZCD), Larry (W1DYJ), Dick (K1KMN) and Andy (N1BHI) were the ground crew. Bill showed up with his son Jeff and a fellow tower climber named Chuck. They arrived with a truck equipped with all the stuff they needed for the job; you can see the truck from the photo on the first page.

Bill gathered everyone together and laid down the groundrules (pun intended). He pointed out that this was a hardhat job - anyone working near or under the tower had to have protective headgear. If the guys on the tower were to drop something and yell "heads-up" or the like, Bill emphasized that *noone is to look up!* That's the best way to defeat the use of the headgear - a falling wrench will bounce off a hardhat, but will really destroy an upturned face.

(Continued on page 3)

Above: This is the view looking east from the south side of the tower. In the lower left of the frame is the railing that serves as the mounting structure for all our antennas. While the weather was as good as we could have hoped for, there was some haze. That's why you can't make out the Boston Skyline to the east. On a clear day, you can see it well. Jeff Thorpe Photo

MMRA VE Sessions

See Dates, page 9.

Marlboro Public Library, 9AM

Contact: Bill Wade, K1IJZ

617-891-9079 Evenings 6 to 10 PM, Weekends 8 AM to 10 PM.

Accredited - ARRL VE Program

Slygo Project....

(Continued from page 2)

After the briefing he, Jeff and Chuck began setting up to go up the tower while the rest of us began preparing the new antennas. To the right you see Dick (N1ZCD), Andy (N1BHI) and Roger (N1NUS) assembling the 440 antenna mounting bracket. That antenna was to be the first mounted.

We didn't get any photos of people building the the tribander; it came in two pieces that had to be joined.

Bryan began working on the PD83 with help from Dick, Roger and Dick (middle right). Bryan is carrying his box of connectors and adapters; he's got several of everything in there. The cable for the 6 meter had a suspicious looking connector; Bryan replaced it to be on the safe side.

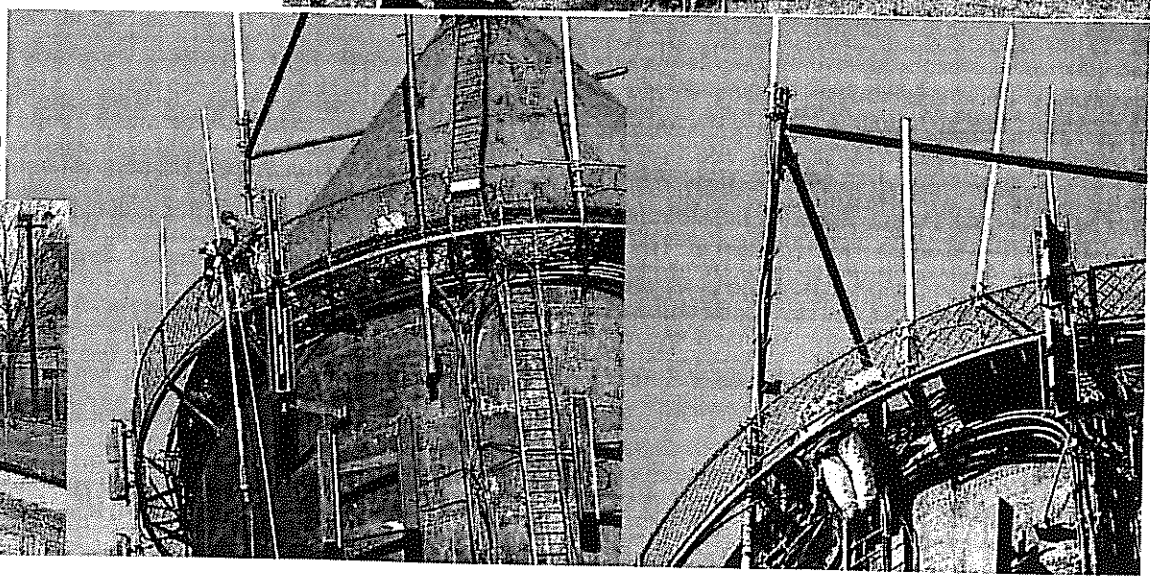
While all this was going on, Jeff and Chuck were removing the old 440 antenna. They had rigged lines and pulleys so that with help from the ground crew they could lower and raise antennas safely. Before we knew it, the new 440 antenna was up (Lower Right). You can see in the picture that it's a substantial antenna.

The next step was to remove and lower the old 147.27 antenna (Lower Left). This antenna had been on the tower at least as long as our old 440 antenna. It was abandoned in favor of a new antenna mounted on a stanchion higher up on the cone.

We were all getting a little hinky...nothing had happened...nothing had gone wrong. The weather was improving as it warmed up, there was only a little wind...it was going altogether too well.

By the way...all these pictures were taken by Ed, Paul and Jeff - we sent him a camera in the bucket. Paul had his camera on a tripod across the parking lot (Directly below). Bill and Jeff were using a commercial frequency to coordinate, and we were all listening to keep track of what was going on.

(Continued on page 8)



Items of Interest....From the ARRL Letter

ISS HAM GEAR INCHES CLOSER TO SPACE

The first Amateur Radio gear to be used on the International Space Station has moved a bit closer to its rocket ride into space. Although the inauguration of Amateur Radio aboard the International Space Station--ARISS--is at least a year away, the so-called Phase 1 ham gear is on a tight proveout and delivery schedule and is due at Kennedy Space Center in Florida by January 20.

Delays in the ISS program have put off the first crew deployment until next January. The first crew will consist of US astronaut William M. Shepherd, as the expedition commander. Shepherd is studying for his ham ticket. Accompanying him will be Russian cosmonauts Yuri Gidzenko and Sergei Krikalev, U5MIR. All three have previous space flight experience. The crew has been training for their launch on a *Soyuz* vehicle and a planned five-month mission on the ISS.

The interim ISS ham gear package will consist of Ericsson 2-meter and 70-cm hand-held transceivers set up for FM voice and packet operation, plus power supplies, cables, and accessories. Ericsson donated the commercial transceivers for the project, while the Italian ARISS team is providing the external antennas.

At this point, the equipment and accessories have been checked out in an end-to-end integration. Additionally, the transceivers have undergone EMI testing to ensure that they will not cause problems for other ISS onboard equipment. The radios also still must be programmed and labeled in accordance with NASA procedures and protocols for space flight. AMSAT members who happen to work for NASA at Goddard Space Flight Center have been doing the EMI testing.

Preparing to carry Amateur Radio gear for use aboard the ISS involves careful attention to detail all along the way. Crew safety is the primary consideration, but cost and crew time--and aggravation--also are important. "Because of the high cost of space travel, it's critical that hardware be thoroughly tested and documented," said Will Marchant, KC6ROL, AMSAT's human spaceflight hardware manager. "Flight crews frustrated by buggy hardware are also less likely to want to participate in Amateur Radio operations."

The qualification process also requires multiple versions of the same equipment. In this case, six complete hardware systems will be fabricated and configured. The complement includes one flight system, a flight spare, systems for training both in the US and in Russia, one for development and testing, and one spare.

ARRL Educational Services Manager Rosalie White, WA1STO, a member of the Space Amateur Radio Experiment (SAREX) Working Group, said she was pleased that NASA was taking no chances during the qualification testing of the ham gear. "I think it's great that they're taking the time to do a detailed examination," she said.

Getting Amateur Radio a permanent berth in space aboard the ISS has involved efforts in several countries. The primary players include the US, Russia, the UK, France, Germany, Italy, Canada, and Japan. "The ARISS team is truly an international, democratic, organization and is cooperating to provide human spaceflight Amateur Radio operations to the entire ham community well into the next decade," said Marchant.

Amateur Radio has been manifested aboard the ISS as "necessary crew equipment." The cost of providing just the interim Phase 1 amateur gear for use aboard the ISS is expected to exceed $60,000. The total cost of putting Amateur Radio aboard the ISS is expected to approach $700,000, with funds coming from the ARRL and AMSAT as well as from NASA.

Still unclear at this point are the actual frequencies and the call signs the crew will use from the ISS. The ultimate ISS ham radio complement--Phase 3--will include equipment to operate from HF through the microwave bands with SSB, CW, FM, packet, ATV, compressed ATV, and SSTV capabilities. The German team will supply a digitalker and full duplex repeater. Once aboard the ISS, Amateur Radio will serve as an educational tool through worldwide school contacts and as an outreach to the general public.

HAM BALLONIST TO SIT OUT ADVENTURE HE PLANNED

Bob Martin, KC5LHL, of Albuquerque, New Mexico, will sit out an around-the-world balloon attempt that he was instrumental in planning. Martin, a TV science reporter and helicopter pilot, said this week that he will stay behind when the Team ReMax balloon leaves Earth. The team had planned to make some use of Amateur Radio during its effort to circle the planet.

Unlike previous attempts, the Team ReMax balloon will travel near the outer edges of the earth's atmosphere at an altitude of approximately 24 miles. Martin told reporters that he originally felt the team could fly the mission safely with three people aboard. However, it was later determined that the

(Continued on page 5)

Give the MMRA World Wide Web Home Page a try..... let us know what you think.... any ideas are welcome. We are looking into things like an MMRA list server. We now have our own domain name - mmra.org. The Web Page keeps getting better.....

WWW Address:

http://www.mmra.org/~mmra/mmrainfo.html

MMRA Information - Repeaters, Officers and Board Members

Marlboro	146.61	N1BHI/R	FTL	P	
Marlboro	449.925	N1HBR/R	FTL	P	PL - 88.5 in and out
Quincy	146.67	K1ML/R	PTL	P	PL - 146.2 out, none in.
Quincy	224.40	N1KUG/R	FTL	L	PL - 103.5 in, none out
Weston	146.82	KA1AL/R	PTL	P	PL - 146.2 out, none in
Weston	224.70	N1HBR/R	FTL	L	
Hopkinton	223.94	N1BHI/R	FTL	L	PL – 103.5 in, out
Stoneham	146.715	N1NVL/R	PTL	P	PL - 146.2 out, none in.
Stoneham	446.725	N1NVK/R	PTL	L	PL - 88.5 in, none out
Taunton	449.575	N1NVL/R	FTL	L	PL - 88.5 in, none out
Marlboro	53.81	W1BRI/R	FTL	L	PL - 71.9 in, none out

[FTL = Full Time Linked PTL = Part Time Linked] [L = Patch available via link] [P = Local Autopatch]

MMRA Officers:

President:	Andy Morrison, N1BHI
Vice President:	Clark Conti, N1NVK
Secretary:	David Croll, KT1X
Secretary	Lynne Ausman, KA1NLD
Treasurer:	Ian MacLennon, AF1R
Clerk:	Ed Mulhern, N1NOM
Director:	Tom Qualtieri, WB1GMA
Director:	Al Kunian, KA1AL
Director:	Chris Conti, N1NVL
Director:	Bob Feltmate, WA1ZJE
Newsletter Editor:	Andy Morrison, N1BHI

- **Voice Mail: 508 489 2282**
- **Email: mmra@mmra.org**
- **Web Page:**
- **www.ultranet.com/~mmra**

Minuteman Articles — Solicitation

If you have ever built anything, fixed something, or have an experience that you want to share, then you should submit an article to the MMRA Minuteman. Contact Andy Morrison, N1BHI, if you want to talk about it. We can scan artwork and schematics to make an article more interesting and useful. Give it a try!

Important MMRA Club Information:

Membership Meetings: 3rd Wed of Sept, Nov, Jan, Mar, May at Campion Center, Weston at 7:30 PM
Meeting Dates for 1998-99 Season: September 16, November 18, January 20, March 17, & May 19.
Board Meetings: 3rd Wed of Oct, Dec, Feb, Apr. Meetings are open and members are welcome. If a visiting member wants to be on the agenda, please contact Andy Morrison beforehand.

Newsletters are mailed one week before each meeting; article submissions are due one month before each meeting.

The MMRA is dedicated to Amateur Radio and the public service. The MMRA is a registered non-profit Massachusetts corporation. Membership is open to all amateurs. Annual dues are $25.00 individual, $35.00 family.

Items of Interest....

(Continued from page 4)

balloon will need to carry additional ballast aboard to safely reach its cruising altitude, so one of the three crew members had to remain behind. Martin, who has worked on the project for more than a decade, elected to be the one.

The launch from Australia has been delayed by weather and technical problems. Still planning to make the attempt are Denver real estate developer Dave Liniger and Australian co-pilot John Wallington. The team has until approximately January 20 to take advantage of the right wind patterns. The voyagers will ride in a pressurized capsule suspended beneath the huge balloon. The crew is equipped with spacesuits from Russia. The trip is expected to take up to three weeks.

For more information on the flight, see **http://www.remax.com.**

HAM HELPS NAB ROAD-RAGE SUSPECT

A California ham was instrumental in helping police to nab an angry motorist who had seriously injured another motorist after being cut off on the freeway in mid-December.

According to an account in *The Orange County Register*, the angry driver followed the other driver for miles "before confronting him on a busy city street, shoving him under an accelerating big rig, and kicking him even after he had been run over." The account says that the angry driver and his two co-workers drove off. But they were caught later in the morning when Ed Greany, KB6DOL, of Corona, heard a broadcast description of the vehicle and then saw the men pass by. He notified police via ham radio, and they arrested Richard Snyder, 28 and two others on suspicion of attempted murder.

The newspaper said Snyder had a string of previous convictions, and his license had been suspended. The injured motorist was reported in serious condition.

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Items of Interest...

(Continued from page 5)

According to the FCC database, the Greany household includes three hams: Roberta Greany, KC6AEP, and Michael Greany, KE6RDT. All are ARRL members.-*thanks to Charlie Clifford Jr, W6QMY*

COOPERATION CURBS "WIRELESS MODEM" QRM

A maker of "wireless modems" and a cable TV company that's been installing the units across the US have told the ARRL they'll do whatever it takes to keep the devices from causing interference to amateur HF bands. The ARRL contacted the two companies after receiving reports from members of the Northern California Contest Club about 80-meter interference from the devices. The devices, manufactured overseas by Phonex Corporation of Midvale, Utah, operate under Part 15 of the FCC's rules. This means that they may not cause interference to licensed services.

"Although the Phonex has complied with required FCC regulations, the ARRL has identified a potential interference problem on the low end of the 80-meter band," said Phonex Senior Engineer Scott Bullock, KK7LC. "We have several hams in our organization, and we do not want to cause any interference to any amateur band."

Wireless modems are first cousins to wireless telephone jacks used to provide additional telephone jacks without wiring. Both are sold in pairs. One unit plugs into the telephone connection while the other serves as a telephone or modem jack; both plug into convenient ac outlets. The carrier-current devices impose RF on the power line to transmit data back and forth in the form of wideband FM.

Other units made by Phonex and sold as wireless extension telephone jacks under other brand names operate on 3.025 and 6.436 MHz, where they generally will not affect the ham bands. Unfortunately, the Phonex wireless modems operate on 3.52 and 8.27 MHz. Cable giant TCI has been installing these units in some subscribers' homes to make a convenient connection from the cable box to the telephone line to transmit billing information. Wireless modems transmit a continuous carrier on the lower frequency, whether the phone connection is in use or not, and on both frequencies when the remote line is in use.

ARRL Lab Supervisor Ed Hare, W1RFI, says the League received reports in mid-December about persistent interference on the low end of 80 meters and on other bands. The interference, consisting of discrete, somewhat noisy and drifting carriers, typically showed up around 3520 to 3530 kHz, but harmonics have been reported as high as 20 meters. ARRL Lab tests verified that the devices pose a serious QRM problem on the lower part of 80 meters and possibly on other bands.

FCC rules permit the unlicensed devices to radiate signals on HF of up to 30 uV/meter, even on an amateur band. Device operators--TCI in this case--must correct any resulting interference, however.

TCI Senior Engineer Tony Werner said TCI plans to eliminate the 3.52 MHz wireless jacks it's installed "as expediently as possible" by replacing them with 3.3 MHz units or by running a hardwired telephone connection. TCI will immediately replace units that cause interference and automatically replace other 3.52-MHz units during routine customer service and plans to use nothing but 3.3-MHz units in the future. Hams experiencing harmful interference they believe is related to these devices should contact their local TCI office. TCI says it will be at least a few weeks before it has service information and replacement units on hand.

Phonex says it's made the necessary production changes to move the operating frequency of its units to 3.3 MHz. If one of its units causes interference, he said, Phonex will retune or replace it. Hams can contact Phonex Customer Service at 800-437-0101.

"Both companies have been refreshingly cooperative," said Hare, who--as his W1RFI call sign reflects--is the League's point man for interference issues. "If every RFI problem that involves Amateur Radio could be fixed so quickly, I would probably be out of a job."

Hare said hams with questions about this issue may contact him directly at ARRL HQ at 860-594-0318; e-mail **ehare@arrl.org**. Additional information is available at **http://www.arrl.org/tis/info/rfiteljx.html**

So What Else is Planned?

Stoneham is next! Bryan (W1BRI), Chris (N1NVL) and Bill (WA1NLR) have made plans to re-work the antennas on the hospital roof. The antennas have been ordered, and as of this writing, some have arrived.

The plan is to install a DB224 like the ones used at Weston and Quincy for the 2 meter machine. The link to the network will get a new 440 Yagi. The 440 machine may get the old Marlboro 440 antenna, but may stay with the diamond.

Also planned is the addition of a 6 meter remote receiver. Bryan plans to move the one he installed at Bill's place in Berlin over to Stoneham. Now that the 6 meter receive site performs so well to the south, west and north, the Berlin remote is redundant. It will use a second 440 Yagi pointed over to Marlboro.

The date for the antenna party has not been set; the crew will probably take advantage of the first Sunday that looks like a good weather day. All the goodies are being made ready to go, so that the job can be scheduled with only a few days notice.

These changes should improve the performance of 146.715, and give 6 meters good coverage into Boston - that site looks right down into the heart of the city. The receiver uses a different tone - the Marlboro receiver uses 71.9 Hz, the Stoneham remote will use 100 Hz (I may have that wrong, but it will be announced).

The bottom line is that the Slygo project and this effort represent the most significant upgrade to our antenna systems in a long time.

Slygo Project...

(Continued from page 3)

About mid-morning, Don Cusson stopped by to see how we were progressing. Below are Bill, Andy (in the shadow) and

Don talking about the project. We did some things that were important to Don in the overall scheme of the Slygo cleanup. Our efforts got rid of an unused antenna, and significantly neatened up the cable runs. Bill brought a bunch of special clamps that allowed us to dress the cable run around the first horizontal stanchion to the ladder. It has been an eyesore for years; now you can't see the cable from certain angles. Below you see Jeff and Chuck working on the cable run, and in the lower right, Roger is installing clamps along the horizontal stanchion. You can see the cables hanging below; those all ended up along the inside of the stanchion.

Don was pleased with the overall results. There are plans to paint the tower, and cleaning up cable runs has been part of his plan to make the whole site more presentable and manageable.

We had another visitor - Roger (W1OJ) stopped by with a professional quality videocamera and made a short recording of some of the activities. We plan to show that video at the next meeting. While he was there, Andy asked if he would host our spring meeting at the FEMA site in Maynard. Roger was willing to do it; he and Andy will coordinate a schedule and agenda. You'll hear soon if it is going to happen.

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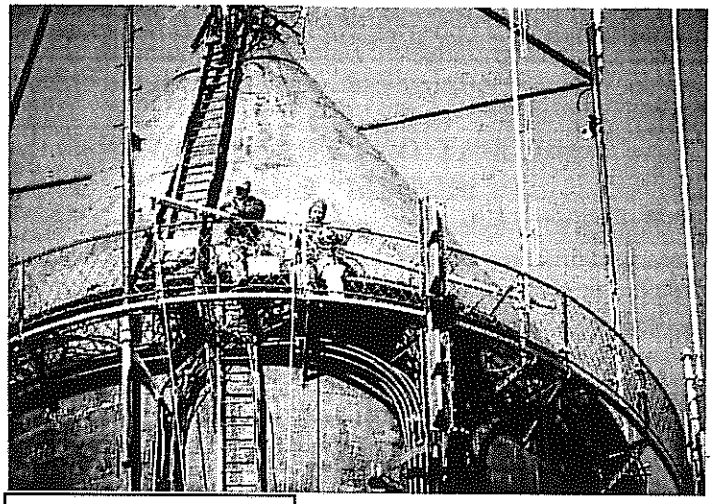
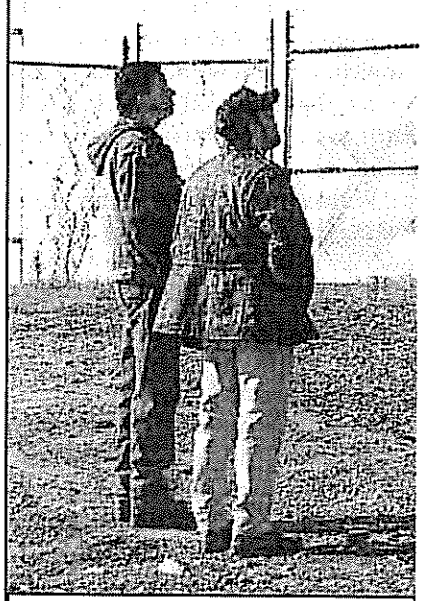
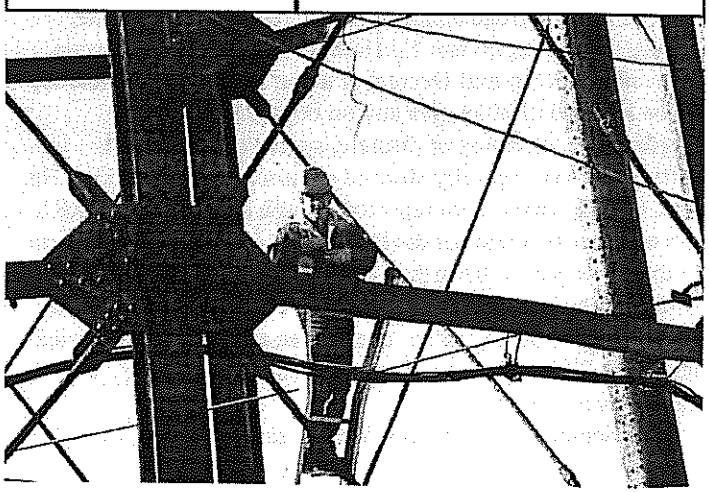


Above: Jeff and Chuck manhandle the 440 antenna into position for mounting: It's pretty heavy...we guessed that it grossed at somewhere around 80 pounds with the mounting bracket. We sent it up with the bracket installed. We were indeed lucky that there were light winds; if it had been a little stronger the wind would have made handling the antenna a risky proposition. Jeff and Chuck showed their skill; they had the antenna mounted in short order.



Above: Roger (W1OJ) and Paul watching the activity on the tower.



Slygo Project...

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Things continued to go unbelievably well. By 1 PM, all the antenna work was done and we were ready to do the cable dressing. We concluded that it went so well largely because Bill is a pro, and knows how to plan and execute a job like this. Jeff and Chuck made it look easy. Someone was heard muttering something like "...no way you'd get my (expletive deleted) up there..." in admiration of the fact that both Jeff and Chuck looked quite at home.

Absolutely the only thing to go wrong is shown just to the right. The grey box is one frame from a roll of film that somehow did not get caught by the take-up roll in the camera Ed was using. So he got 23 more frames just like that one.

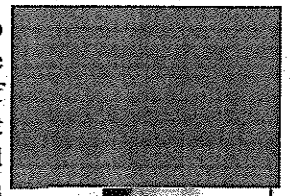
We finished everything before sunset...not bad for that time of year, given that the sun sets at about 4:30. We all owe a vote of thanks to Bill and his crew, Jeff and Chuck, as well as the people who showed up to help. So far we have never failed to get enough help for a critical effort...we hope it stays that way.

Of importance to the MMRA is that this represents a significant upgrade to our infrastructure. In one fell swoop we have completely renovated the antenna complement on the Slygo tower. We had to go out of budget to do it, but everyone agreed that is would be well worthwhile.

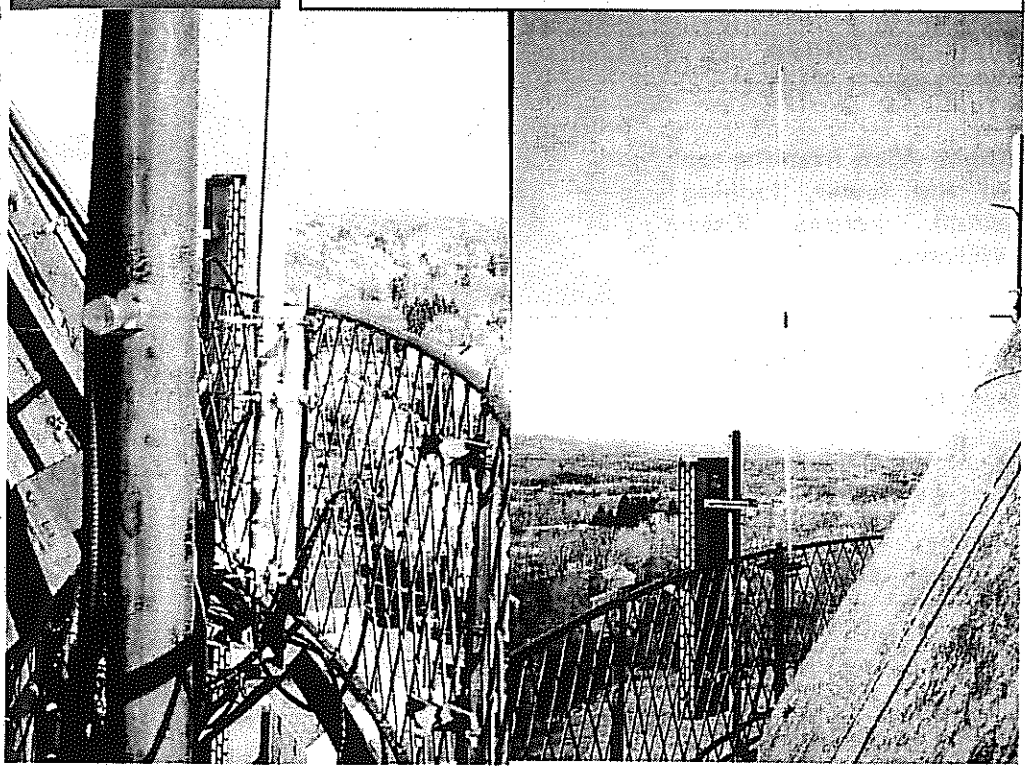
We've even been rewarded with significant improvements in repeater coverage. Tests made that night and subsequently confirmed a few things:

- 449.925 coverage improved. There were some areas where it seems to have remained the same, but in others the improvement is dramatic. We could work the repeater from the Worcestor RF hole along I-290. The reason for this is that as Stationmasters degrade, their angle of radiation varies around the compass. Where there is up-tilt, coverage degrades. The new antenna has a consistent angle of radiation.
- 223.94 covers out almost to Sturbridge, and south all the way to the intersection of I-95 and I-495.
- 53.81 can be worked from as far south as Cape Cod, with reliable coverage extending down into the Mansfield area. It can also be worked from New Hampshire, and out beyond Worcestor.
- The packet stations have the same coverage as before; their antenna locations were not improved.
- 449.575 was moved down to Slygo and connected to the tribander. It covers well, and when the receiver is fully re-aligned, it will be as good to the north and west as 449.925 is to the south.

All in all, the project was a total success. We got new stuff in place, and it all works. Get on the air, try out the Slygo systems. We think you will find them better than ever before. Hopefully, this and other improvements planned in the near future will attract more members. It certainly has improved the system.



Below, Left: The mount for the new 440 antenna. The rail will break before the mount does.
Below, Right: The triband antenna, mounted on the west side of the tower. It's now being used for the packet and APRS stations, 223.94 and 449.575.



VE Exam Dates for 1999

January 16, 1999
February 20, 1999
March 20, 1999
April 10, 1999 *NOTE* This is the SECOND SATURDAY
May 15, 1999
June 19, 1999
July & August *NO EXAMS*
September 18, 1999
October 16, 1999
November 20, 1999
December 18, 1999

The Minuteman

Volume 28 Issue 3 January 1999

View From The Top

Slygo Hill Rocketship Tower gets new antennas See Inside!

Right - View from the top of the tower, looking south across Lake Williams.

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