

VLA/VLBA NEWSLETTER

From the World's Premier Centimeter Wave Radio Synthesis Telescopes

AROUND THE VLA

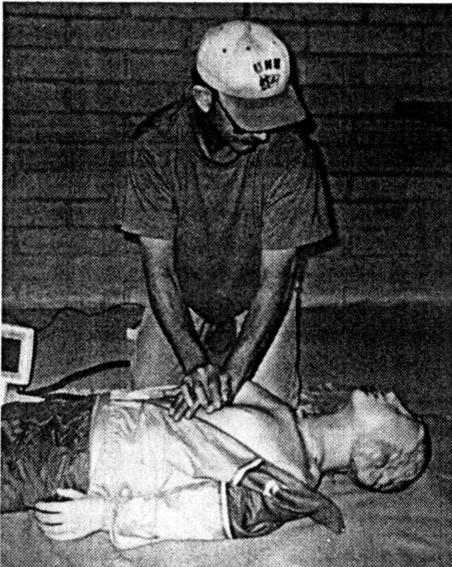
Welcome to new VLA Operator Terry Bartelt.

The giant yucca plant on the east side of the Control Building has two gorgeous blooms this year. Anyone remember the last time this plant bloomed?

Twenty years ago this month, NRAO accepted Antenna No. 25.

Godin Otero took advantage of the rains in May to blade our "city streets."

Richard Murillo, Jim Rexrode, and Godin Otero attended a "Train-the-trainer" program in Roswell as part of the heavy equipment certification program. Ramon Molina will be attending a separate session in June.



Shortly after this picture was taken of Garry Morris teaching the CPR course in May, he suffered a medical emergency. Garry asks that everyone at the site know that his EMS and CPR training probably saved his life, because he knew to call 911 for help immediately.

FALL PROTECTION

We are experimenting with two new antenna quad leg fall protectors. One is made by French Creek Productions, the other is an NRAO design. The French Creek system, as well as all other off-the-shelf devices we've found, is designed primarily for vertical ladders. Because of this, they don't work all that well on inclined ladders like ours. The NRAO unit was designed specifically for inclined ladders, so it might work better.

The NRAO design will not be available until it has undergone extensive testing. (Volunteers?) A French Creek system is currently installed on Antenna 21. If you will be working at the apex of antenna 21, please get a harness and trolley - they're stored in the vertex room - and try out the system. Instructions are at the antenna.

Everyone who tries the system is encouraged to send comments and suggestions to me. Thanks for your cooperation!

Jim Ruff

POWER FAILURE

On Wednesday April 21, the electrical power at the VLA failed early in the evening followed by a 22 hour period of lost observing time. The lost time began when we lost SEC power and the generator failed to come up on command. Though the generators were on line within 2 hours, the UPS backups for correlator and computers had timed out by then so that the entire site went black. As a result, it took another 20 hours to recover from the outage.

Then the site went dark again early Saturday morning, May 29. SEC power was restored to the antennas a few hours later, but it took most of the day to isolate the fault at the Control Building to a buried line between the Control Building and the Cafeteria. Jim Rexrode, Marlin Smith, Pat Lewis, Godin Otero, and

Lew Serna were ready to start digging, but the decision was to restore power to the Control Building alone and leave the Cafeteria, VSQs, and Visitor Center for the following week. Ellen Ary recovered the frozen food in the cafeteria and Johnny Montoya manned a temporary center for Visitors at the Control Building on Sunday and Monday. Many thanks to those who gave up part of their holiday weekend to recover from the power problem. The power line that failed, by the way, was High Molecular Weight Polyethylene-HMWPE, the same stuff that caused so much problem on the array years ago. This is the last of this type cable on the site and it will be replaced.

Need-less-to-say, we want to reduce downtime from power failures. Preventive measures scheduled include improvements to generator checkouts and the generator status monitor at the operator's console, replacement of shunt trip breakers, some re-work of the fire alarm system, better computer turn-on and turn-off procedures, transfer of one of the IAT clock modules to the maser UPS, improvement to hatch gear, and redundancy of power to Control Building. A power down checkout of how well we recovered is scheduled for double maintenance time in August.

C. Janes

HATCH CHILI!

Not really...this is to draw your attention to the antenna safety hatch. Caution signs are being placed near the access ladders to remind everyone of closing the safety hatch when working on or above the antenna dish. Another caution sign is placed on top of the hatch to warn you against stepping on its hinge side when closed (if it happens, not only will you be startled, you could stumble and injure yourself).

G. Cole

MMA NEWS

Contractors interested in building the first MMA antenna congregated at the site May 18th, and inspected the facilities. Competing firms have until June 30 to submit a bid to build and install a 12 m antenna at a location behind the VSQ. NRAO will make the award September 30. The European partners to the MMA, or ALMA project as it is now called, will solicit bids for a second antenna to be installed 100 meters away from the first. After an evaluation period of the two prototype antennas, NRAO will award a bid to build as many as 62 more antennas for installation at the MMA site in Chile.

NRAO will build concrete piers to contractor specifications for the two antennas as early as summer 2000. The site improvements will include installation of power lines.

C. Janes

RECONFIGURATION

The 15th move to A Configuration begins as this newsletter goes to press. The list of tasks done to prepare for the move is long:

1. The Track Crew plowed and swept sand and weeds off the arms. Sand actually covered the rail in a few places on the west arm. All the new ties on the inside rail of the north arm had to be tamped and the track straightened. Finally, the Track Crew inspected all 41 miles of track for broken bolts on the tie plates that hold sections of the rail together and for other maintenance problems. Some pad fences had to be repaired to keep cows off the antennas and brush was chopped down to permit safer antenna access.
2. The Auto Shop replaced the vibrator guide rods that drive the tamping spades on the Fairmont tamper. The four new 5.5' long, 2.5" diameter rods were built by the Machine Shop. All the hydraulic hoses and fittings will be replaced after the move. Keeping the brush/plow and other Track Crew equipment working has kept the Auto Shop very busy.
3. The Weld Shop constructed 48 new aluminum rail inserts to save backs when turning corners with the transporter. The new inserts weigh only 1/3 the weight of the original steel inserts.
4. The Transporter Crew completed checking of all the axles for the move. A dry run to the end of the east arm with an unloaded transporter didn't turn up any major problems, though the brush between the

tracks needs attention in a few places. The crew carefully measured distances between spur tracks and piers to anticipate setting-down difficulties, but no problems were found. Bob Broilo installed a noise reduction mike on the mobile radio for Transporter II.

5. The Cryo Shop has standardized all the intermediate spool pieces except on the "South" arm. The spool piece is the 20 mm diameter vertical waveguide that connects the antenna to the underground waveguide. The Grounds Crew assisted by lifting or lowering the underground waveguide "spur" as necessary to match the standard-length spool pieces. Only the high frequency channels work on the waveguide modems at locations A5 out, so the Cryo executed 22 modem changes with 4 more to go at this writing to accommodate all the antenna re-shuffling. A modem change requires re-plumbing the waveguide hardware in the vertex room and can be quite time consuming. The LO/IF Group adjusts the modem levels.

6. The HVAC Shop serviced all the antenna air conditioner equipment to reduce the number of trips to antennas once they are way out on the arms, and the Electrical Shop checked the power transformers before they have antenna loads. The Servo Shop replaced faulty anemometer cables and Site Safety installed warning signs on the main panel hatches while the antennas were close in.

7. The Carpenter Shop checked and repaired manhole covers.

8. Gene Cole scheduled which antenna goes to which pad and on which day. Considerations were Q and K band receivers, antenna painting, overhaul schedule, 74 Mhz dipole testing, and a problem with the Wyecom repeaters on the West arm. A maximum of 4 antennas can be moved in one day for operational considerations.

9. Ramon Molina established move teams, 5 employees required per team. The Move Teams will borrow personnel from the Electronics Division and the Track Crew to supplement the Transporter Crew and the Antenna Mechanics. Ramon will also organize safety tail gate sessions for the move and serve as Move Supervisor. Ramon Gutierrez will be busy recruiting two antenna mechanics during the move.

In short, it takes a lot of hard work, good teamwork, and careful planning to be ready for the A configuration move. Thanks and congratulations to all the shops.

C. Janes

WHO ARE OUR EMTs?

The VLA Emergency Medical Technicians are Gene Cole, Pat Madigan, Garry Morris, Tom Olney, and Alison Patrick. These folks are ready to treat anything from a paper cut to a call from the State Police asking for help at a motor vehicle incident.

Part of the New Mexico EMS Protocols that we must follow require 12 hours per year of continuing education to get re-licensed, plus a three day, 24 credit-hour mandatory refresher course and an annual re-certification in all phases of CPR. The full course to become an EMT Basic is 120 hours, or more, usually done nights and weekends. The squad responded to 12 calls in 1998.

A. Patrick

HEAT STRESS

Because we live and work at a relatively high altitude we need to be concerned with hazards of heat stress. Heat sources causing heat stress are high air temperature, high humidity, radiant heat and strenuous activity. Prolonged exposure to these heat sources and loss of salt through sweating are the most common causes of heat stress.

Loss of body fluids may also lead to heat stress. Some symptoms of heat stress are fatigue, fainting, heat cramps, headaches, nausea, weakness and dizziness and usually is followed by thirst. To combat these conditions allow the body to adapt or train for work in hot environments. Take frequent breaks away from the sun or heat source; drink plenty of water and fluids rich in electrolytes like Gatorade. Gatorade is available in the warehouse.

G. Cole

WORK AT THE AOC

A belated thanks for the work provided by Shane Baca, Ed Gray, and crew here at the AOC to install the soundsoak material in Jim Ulvestad's office, beautify the doorway entrance to the MMA corridor, and the continued efforts to keep our ladies and financial computing system in Fiscal at a proper temperature. Also, thanks to Steve Troy for fixing the ice machine in the first floor kitchen. Everyone did a great job.

S. Lagoyda