

Voice of America Packs a Punch

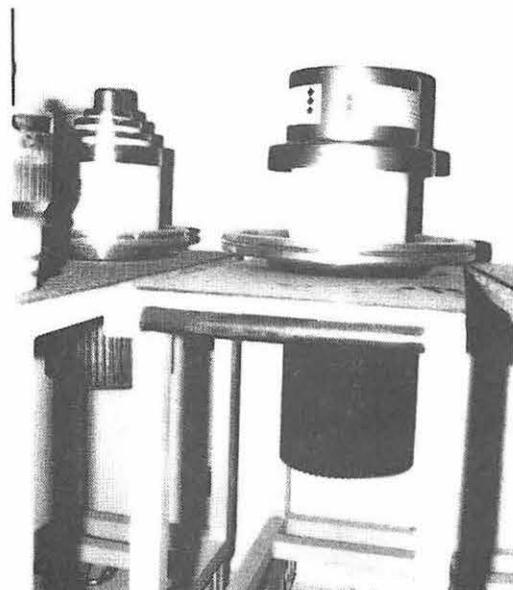
Story and photos
by Charles J. Korolden

If you happen to drive a time-jumping Deloren and you find yourself a little short on plutonium, you can still get the time traveling punch you need just west of a friendly little city in the San Joaquin Valley. Delano, California, is the home of the Voice of America's international shortwave broadcasting relay station.

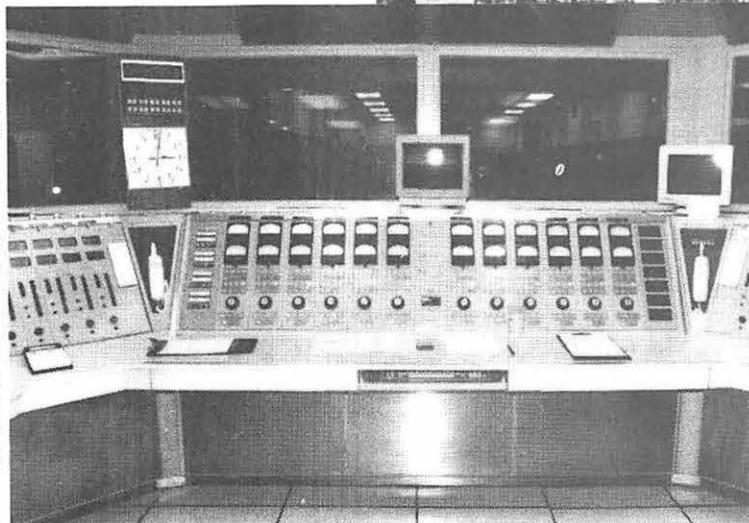
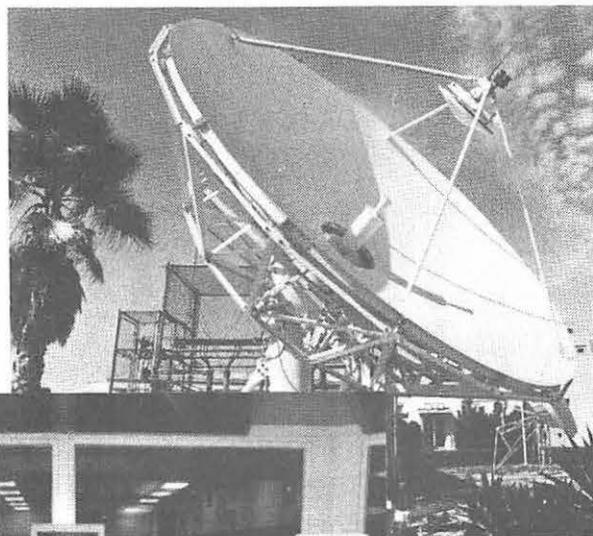
In 1988 the United States Information Agency, of which the VOA is an entity, installed a new high gain multi-band curtain array antenna that is capable of an ERP (effective radiated power) at about 1.2 gigawatts. An amazing amount of power.

The Delano Relay Station that's attached to this antenna, and a multitude of others that cover almost 800 acres, is responsible for transmitting news and educational programs to Southeast Asia and Latin America. The programs, originally produced in VOA studios in Washington, D.C., are then beamed to the relay station via satellite. VOA's highly qualified technicians at the relay station then begin to decode, amplify and route the satellite signals to the proper transmitters and antennas through the Master Control console with the aid of a computer.

The Delano Relay Station came to life in 1944 as part of the Office of War Information's effort to bring much needed information and entertainment to the troops serving in the Pacific. They went on the air with two 50,000 watt RCA transmitters operated by radio technicians



*This is a
PA-2 QS-
200 power
transmitting
tube --
Cost? About
\$68,000!*



Programs put together in the Washington, D.C., studios are linked by satellite to the relay station's master control room in Delano, California; There the signal receives an enormous electronic punch to send it flying worldwide.

from CBS. In 1945 a 200,000 watt Federal transmitter was added.

The OWI was abolished at the end of World War II and the Voice of America, monitored by the Department of State, took over the job of broadcasting. A reorganization put the VOA under the United States Information Agency in '53 and ten years later the operations and maintenance, supplied by CBS, was turned over to government employees.

The station continued to upgrade. A comprehensive modernization program was introduced in 1965 and by '68 the power of the station had been doubled by adding three 250,000 watt automated transmitters and a pair of 50,000 watt independent side band units. In 1975 the overseas program quality was improved by modifications to two of the curtain antennas and their transmission lines. A new steerable curtain antenna was added two years later that could direct its signal to the Pacific.

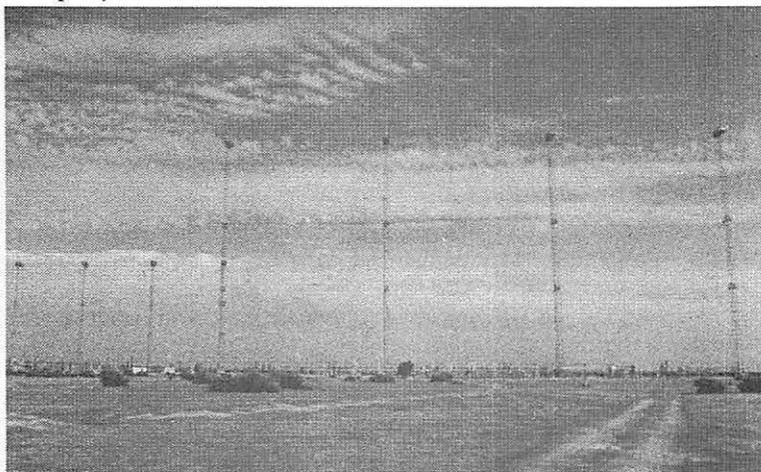
The VOA's relay station broadcasts in English, Chinese, Cantonese, Bangladeshi, Indonesian, Korean, Bengali, Vietnamese, Russian, Khmer, Thai, Swahili, Burmese and Lao just to name a few. They also carry programming for the BBC (British Broadcasting Company) and occasionally the United Nations.

To make it all go takes a lot of hard work and money. After all the upgrading to date, the station is worth about \$30 million and costs a little over \$1.8 million per year to run. Half of the annual operating budget goes to paychecks for employees and supporting tradesmen. And then there's the electric bill, over \$2,000 per day.



Station manager Lynn Smith stands next to one of the many anchors that support the curtain array antenna.

Today the Delano Relay Station is one of the most powerful and modern communication stations around. Consider the three Collins transmitters rated at 250,000 watts each and four Brown Boveri Company transmitters at the same wattage, add to that the 100,000 watts from two Continental Electronics sideband transmitters and you get whopping 1,850,000 watts of power -- yes that's about a dollar a watt per year to run.



Full view showing the towers that support the curtain. The taller towers are 408 ft. high and are the lower frequency 6- 12 kHz antennas. The higher frequencies (13-26 kHz) are covered by antennas about half that height.

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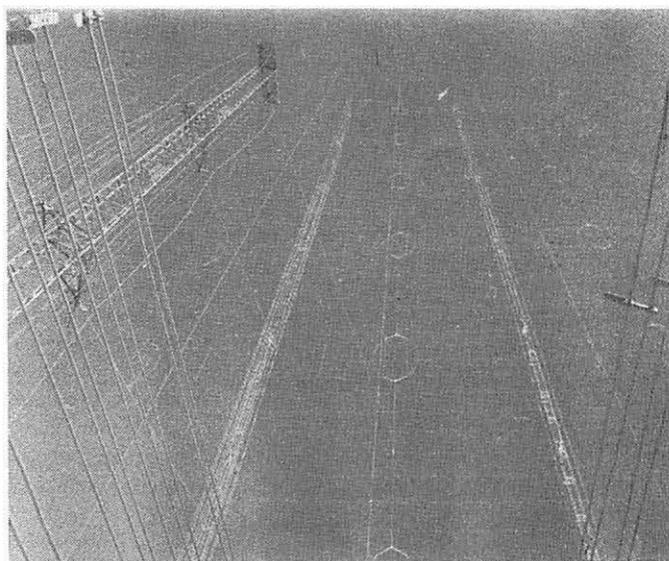
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Pump it through the new antenna with the claimed 1,000 gain and you're close to 2 billion watts. According to the station manager Lynn Smith, after all is said and done, it's closer to just over 1 billion. But it's still enough to jump start a Spielberg sports car through time.



Closer view of the curtain array antenna, showing a small section of the 72 broadband dipoles.