

TITAN II (23 G) SHIPMENT

FROM DENVER TO VANDENBURG

By Wesley J. Keith

It was decided early in the 23G Program that the Titan II vehicles would be delivered to Vandenburg Air Force Base by ground rather than air transport. Some refurbishment would be done in Denver and the vehicles shipped to VAFB for final rework. One of the first orders of business was to establish two over-the-road routes, one for summer and one for winter. Once the routes were selected surveys were conducted to make a list of: all obstacles along the routes; all overpasses, bridges, cables, "Off and On" ramps, and service stations to service the trucks.

A convoy to deliver the vehicles would consist of two trucks with double-drop, extendable low-boy trailers, two autos large enough to carry "Oversize Load" signs and a tall striker antenna attached to the front bumper of the lead car, and communication radios. The personnel included two auto drivers, two truck drivers, an observer, and four armed guards. A detailed plan was prepared considering the route to be taken, weather projections, obstacles found during the route survey, refueling stops, the number of daylight hours, and the overnight stopping places. The convoy was required to travel only during daylight hours at a speed no greater than 55 MPH.



Photo #1 Shows Wide Load Sign and Tall Antenna, Lead Car Next To Stage I, Ready To Go

The first shipment was prepared to move out on a clear Monday morning. We were in the factory at 0400 hours working off final items. Weather for the day was clear and we would have just enough daylight to reach our first overnight stop. As we started out the north factory door, an Air Force QC representative came running out and stopped us. Nothing in his paper work referred to anyone going out the door with a complete Titan missile. After about an hour of going up the Martin and Air Force chains of command, the problem was resolved and we were set to go. We had lost an hour of daylight but we felt we could make it up on our fueling stops.

Due to the one hour loss we had to stop at an alternate site in Las Vegas, New Mexico, as it was getting dark when we pulled into the parking lot. The first day of the trip went well and the guards were there to meet us. They would stay with the vehicle during the night while the convoy people rested.

At first light on day two, we relieved the guards and they headed out to the next overnight stop. They drove at a higher rate of speed so they would arrive several hours ahead of us. Hotel reservations had already been made for each evening stop. When the convoy arrived the guards had already slept, eaten and were ready for the night shift.

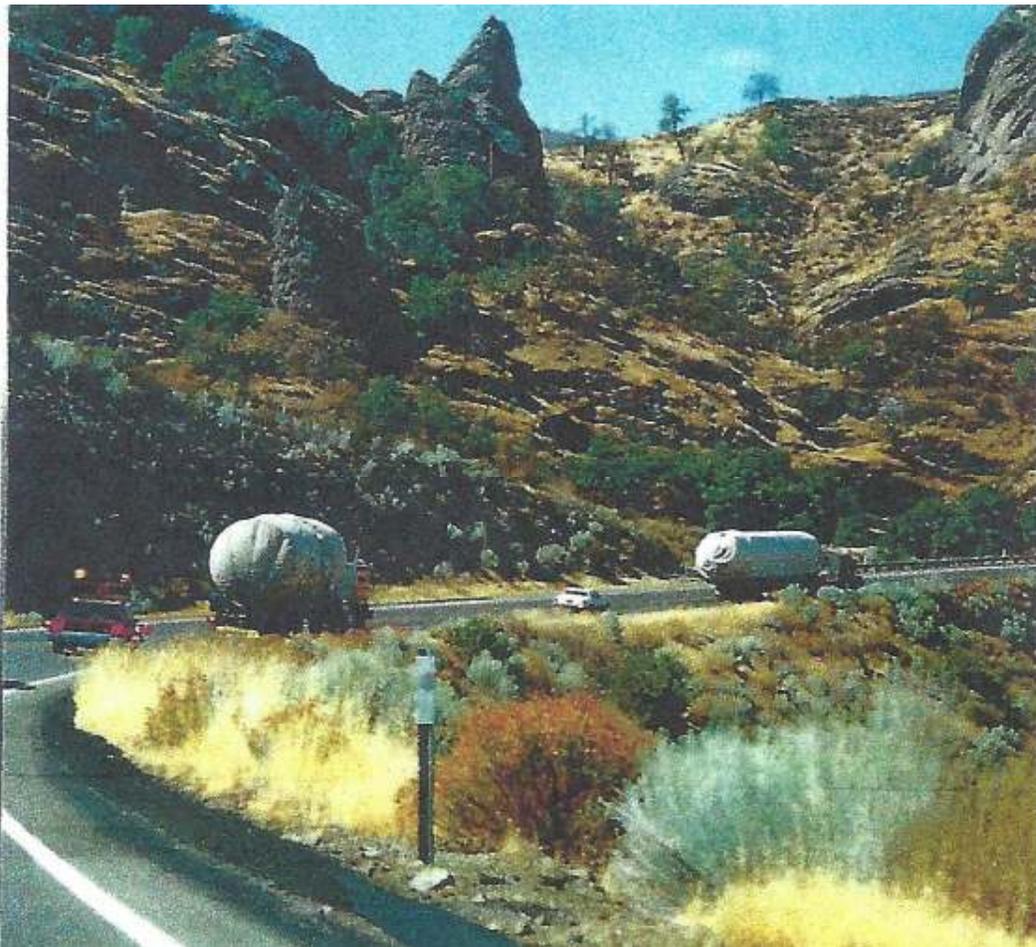


Photo # 2 Convoy in mountains

We had selected the overnight stays at truck stops with adequate parking space to safely handle our large trucks and tried to park the trucks where there wouldn't be a great deal of traffic. At one stop we

pulled in and parked in the back of the lot with no other vehicles close to the trucks. When we relieved the guards the next morning the lot was full, and trucks loaded with 500 pound bombs were parked on each side of us -- so much for our parking strategy.



Photo # 3 Truck stop

As we approached potential problem areas such as an overpass, we would slow the convoy down so if there was a problem we could get safely stopped. If there was an "Off or On" ramp we would stop before getting to that point. The lead car would go through the underpass, and if there was no hit on the antenna, the observer would go under the bridge, chase out the snakes, and observe the vehicle to assure clearance as it went under the bridge. When overhead clearance was questionable and there were no access ramps, there was no choice but to slowly inch our way under the bridge. Sometimes we had to move to the left lane/shoulder in order to clear, blocking the entire highway, and on others we found that repaving had reduced the normal clearance height. We didn't take anything for granted. We expected the worst and hoped for the best.



Photo # 4 Under the bridge

On some roads, we encountered overhead cables and wires strung across the highway. If the vehicle would not clear, the observer would lift the cable with an insulated pole that we had brought along for that purpose while the vehicles were inched through.

We had one incident that really stirred everyone up. At 0507 one morning, the truck carrying Stage II rolled across the parking lot and hit another truck. When we pulled into the parking lot the evening before, the Stage II truck driver adjusted the trailer brakes and the truck brakes. He had the truck in gear so it would not move while making the adjustments. In the morning he got up, took the truck out of gear and started the engine, which built up necessary air pressure to operate the brakes. He then shut the engine down and left the truck, but did not engage the brake system. Approximately forty five minutes later the truck very slowly rolled forward striking another parked truck. A security guard tried to get into the truck as it was rolling, but the door was locked. He said he thought about throwing himself under the wheels, but then thought better of it. Damage was limited to minor dents in the grill of our truck. We immediately took a note to add a provision to our parking procedure to henceforth place blocks under the wheels of both trucks anytime they were stopped and unattended.

Another unexpected event took place in the form of extremely high cross winds while crossing the Mojave Desert near Edwards AFB. In addition to the effect of the wind on our trucks, we noticed that passing semi-trucks were leaning at what appeared to be at dangerous angles. On some occasions we could even see daylight under their upwind rear wheels as they passed, and we decided it would be wise to pull off and wait for the wind to subside.

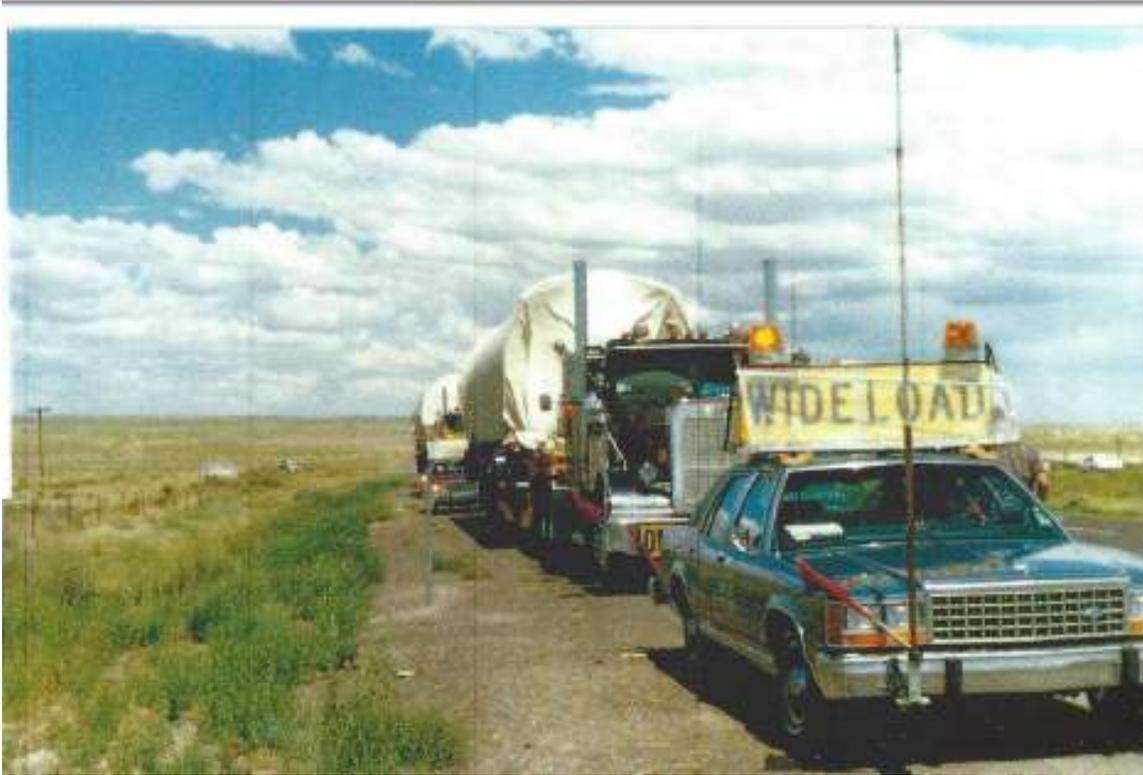


Photo # 5 Waiting for wind to die down

Our stop for that evening was planned to be at the airport in Mojave, California. Our vehicles were placed next to a hangar that was later the starting point for the first round-the-world flight by Burt Rutan.

When we arrived in Santa Maria, California, we were met with a police escort because our route went through the middle of town. People lined the sides of the road waving and cheering. We went to the main gate at VAFB and drove right through. The observer and lead car driver were congratulating each other on having successfully finished the job when the striking antenna hit something. Following a panic stop, we found an electrical wire strung across the road, and lifted it with the pole. The convoy followed through and headed for the Martin Vehicle Assembly Building. The building had controlled access and the observers' name was not on the list. The observer was not about to let the vehicle out of his sight until Martin QC had inspected and formally accepted it. His name was added to the access list and the vehicle was inspected and found to have no problems.

The final trip report stated that the route followed was acceptable. All instrumentation on the vehicles showed that the forces placed on them were within limits. Some people were alarmed when they read the sentence about the Stage II truck rolling and hitting another vehicle. An explanation of the event seemed to get everyone on the same page with no further concern. The requirement for placing blocks under the wheels of the trucks was added to the transportation procedure. Eventually another route was also proved out in a similar fashion.

One question asked by some was why the autos had to be Lincoln Town cars. Our answer was because the large "Oversize Load" signs would not fit on any other rental car, and a heavy duty front bumper was

necessary to mount the striking antenna. In all, thirteen Titan II vehicles were successfully shipped over-the-road to VAFB during the 23G program.