

Project Profile – Eglin Air Force Base Elevator

Diversified Product Development redesigns and rebuilds 300 ft 17,000 pound capacity elevator for Air Force Base.

In Fort Walton Beach, FL on Santa Rosa Island stands a 300 ft fully operational surveillance tower for daily land-water testing operations by Eglin Air Force Base.

Eglin Air Force Base is the largest military installation in the Department of Defense. Eglin consumes more than 724 square miles of land area, 134,000 square miles of airspace and more than 123,000 square miles of water ranges in the Gulf of Mexico.

The elevator is located in the center core of the 300 ft. surveillance tower and has both personnel and freight capabilities. Heavy equipment up to a maximum capacity of 17,000 lbs is transported on the top of the elevator to the open air platform (OAP). Personnel are transported in a climate controlled passenger compartment with a maximum capacity of 1,500 lbs (6 people). The elevator is a vital part of daily operations therefore it is highly important to always be available and operable.

Initially, Diversified was subcontracted to do hydraulic system design while a known tower engineering company was contracted to do the structural and mechanical design. The elevator was built to the design but did not work properly, so the general contractor called upon Diversified for immediate assistance.

Diversified arrived the next morning to evaluate the elevator. The hydraulic system design that Diversified was initially in charge of was working great, however the structural and mechanical systems needed to be redesigned.

Time was a considerable issue because the longer it took to rebuild the elevator, the longer the elevator was out of commission for the Air Force. In less than 3 months, the elevator was rebuilt, completely operable and exceeded every expectation. Considering the amount of work that had to be done, this was a remarkable turnaround from Diversified.



Client: United States Air Force

Location: Eglin Air Force Base, FL

Website: <http://www.eglin.af.mil/index.asp>

Product: Elevator for Tower Support

Product Description: 300 ft. 17,000 pound capacity elevator

Diversified Services Provided:

- Product Design (Mechanical, Structural, Hydraulic, Electric, Controls & Ergonomic)
- Component Selection
- Hand Calculations
- Conformance to industry standards
- FMEA
- Component Testing
- Cycle Testing
- Prototype Testing
- Performance Testing
- Purchasing
- Documentation
- Inventory
- Cost Monitoring
- Provide info for product manual
- Operators, Parts and Maintenance Manuals
- Contract manufacturer for production
- Field Service Calls

Diversified's responsibilities included:

- Redesign & Documentation
- Engineering Calculations
- Review applicable standards
- FEA (Finite Element Analysis)
- FMEA (Failure Mode & Effect Analysis)
- Oversaw installation & commissioning
- Oversaw PLC fine tuning
- Developed and performed acceptance testing

After completion, Diversified was initially available on an as need basis if problems should arise. However, since the elevator redesign and rebuild was such a success, Diversified signed a contract to have a full time employee stationed near Santa Rosa Island to work on all tower repairs and maintenance.

For the past 3 years, Diversified has been the sole source provider for maintenance and tower repair. This is just another way we satisfy our customer's "Diverse" needs.



Personnel/Freight Elevator



Drive Chain for Elevator Operation



Diversified Product Development provides a full offering of design services for every step in the product development process – from concept to production. The company manages projects of every size and specializes in the mobile, construction, oil field, mining, utility and equipment sectors.

1001 Webster Ave.
Waco, TX 76706

P: 254-757-1177

www.diversifiedproduct.com
cmfranklin@diversifiedproduct.com

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