Operational Representative Expendable Target (ORET)

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Description

The project fulfills the objective from the 86 Fighter Weapon Squadron to build a target to train pilots in recognizing active threats on the modern battlefield. To do this USU was tasked with designing and building a mock target that is a similar shape and size to an active threat.

Design Description

The design that was chosen after much consideration, was guided by pilot and range official insight, as well as functionally simple in its assembly. Our final design was a steel frame of angle iron welded together and covered in thin sheet metal. These materials were used to allow for our design to meet recyclability considerations, our design is 100% recyclable.

Target Image as Viewed by Pilot

Performance Review

Requirment / Contraint / Goal	Target	Threshold	Predicted Performance	Actual Performance
Max width	7 ft	±0.5 ft	4 ft	5 ft
Max Length	19 ft	<20 ft	10 ft	9 ft 10 in
Max height	7.5 ft	< 8 ft	6ft	6 ft
Positive radar reflectance	Classified Numerical Value	Classified Numerical Value		
Environmentally recyclable	90%	±10%	99%	100%
Visually Representable Distance	2 miles	± 1 mile	2 miles	2 miles
Assembly	3 people	± 1 person	3 people	3 people

Conclusion

In conclusion, planning ahead and keeping everyone on the same page is key to making this project run smoothly. Getting stakeholder input early, starting machining training before materials arrive, and sending out meeting agendas ahead of time all help keep things organized. Plus, thinking about safety from the start and doing small-scale prototyping early on can save a lot of headaches later and make it easier to communicate ideas with clients.

Target Image as Viewed by Range