



COURSE PROJECT PRESENTATION

GRAYSEN BRINKMAN

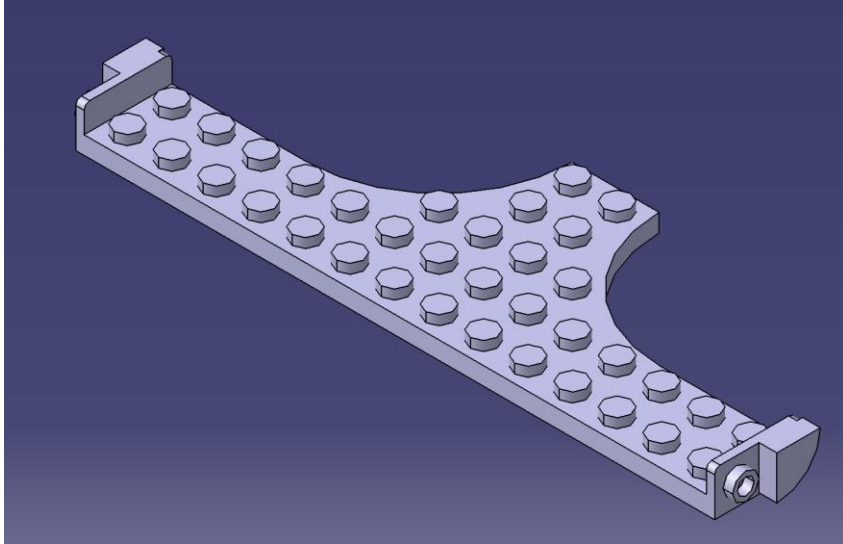


OBJECTIVES

- Model the Lego Iconic Red Plane in CATIA
- Make modifications that improve the design
 - Use Lego pieces and legal building techniques

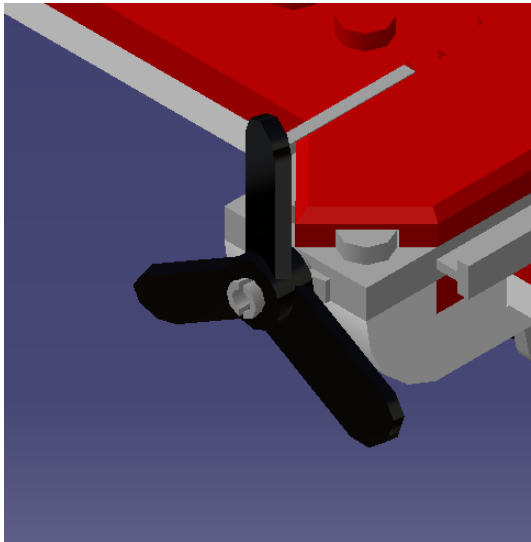


PART MODELING

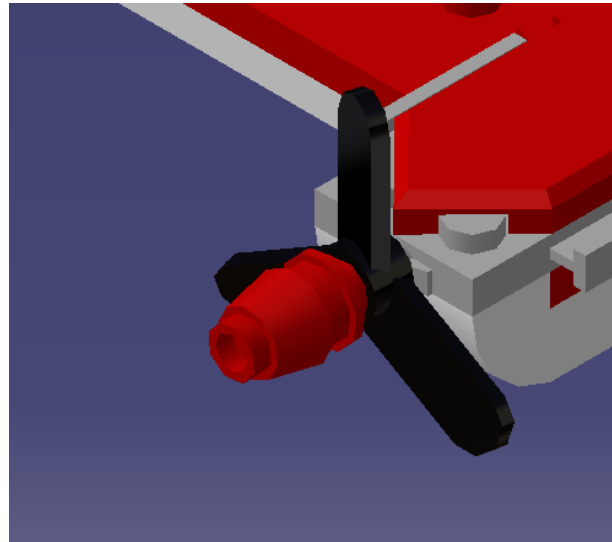


- 52 pieces in original Lego set
- 12 unique parts in CATIA + 4 parts for modification

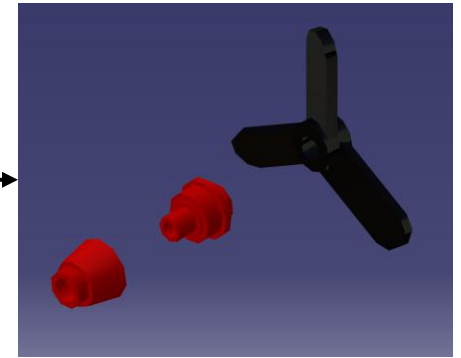
MODIFICATION: NOSECONE



Original

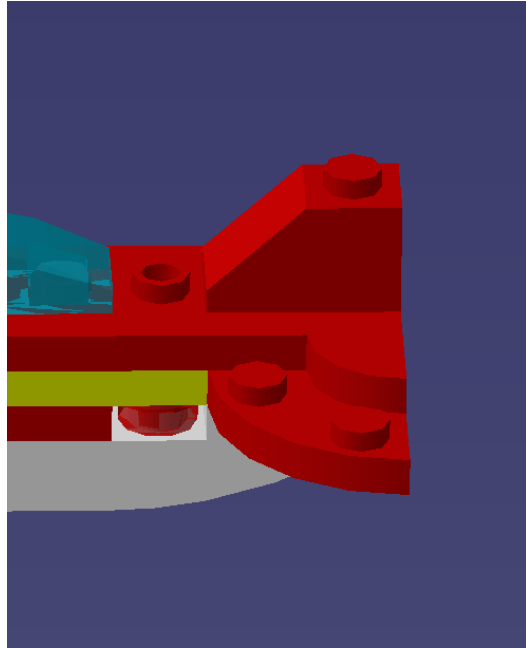


Modified



- Added a nosecone to the front of the plane to improve looks and make it aerodynamic

MODIFICATION: TAIL + REMOVED STUD



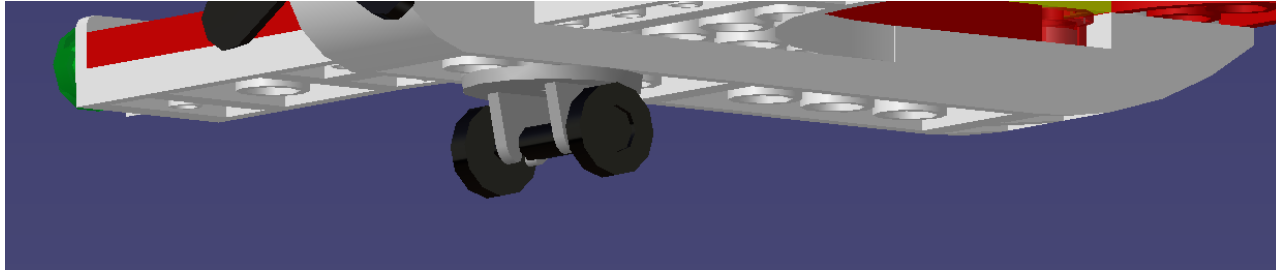
Original



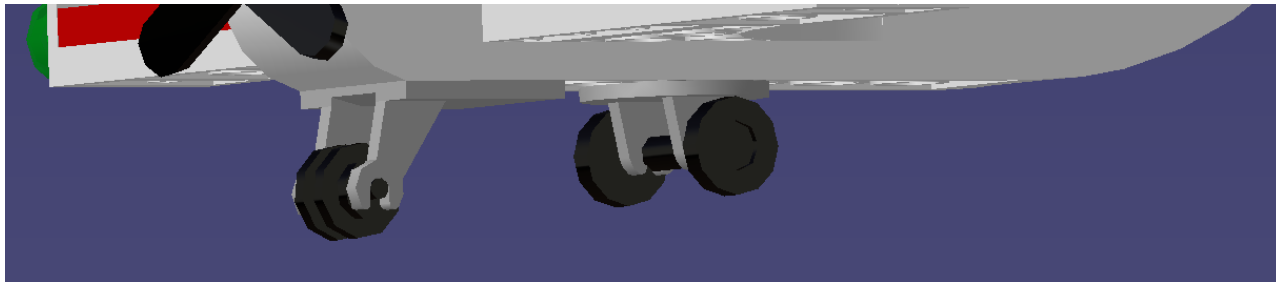
Modified

- Added extension to vertical tail to make the plane more aerodynamic and make it look better
- Removed the unused stud behind the cockpit window for looks

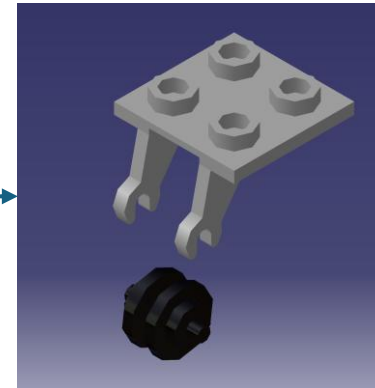
MODIFICATION: WHEELS



Original

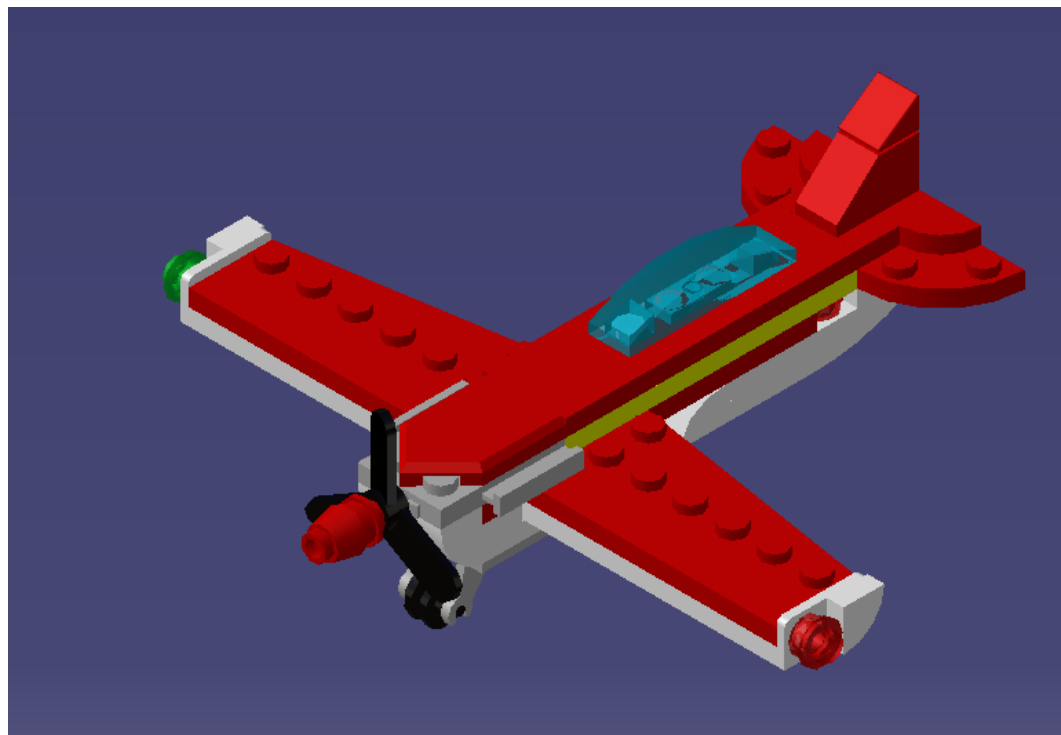


Modified

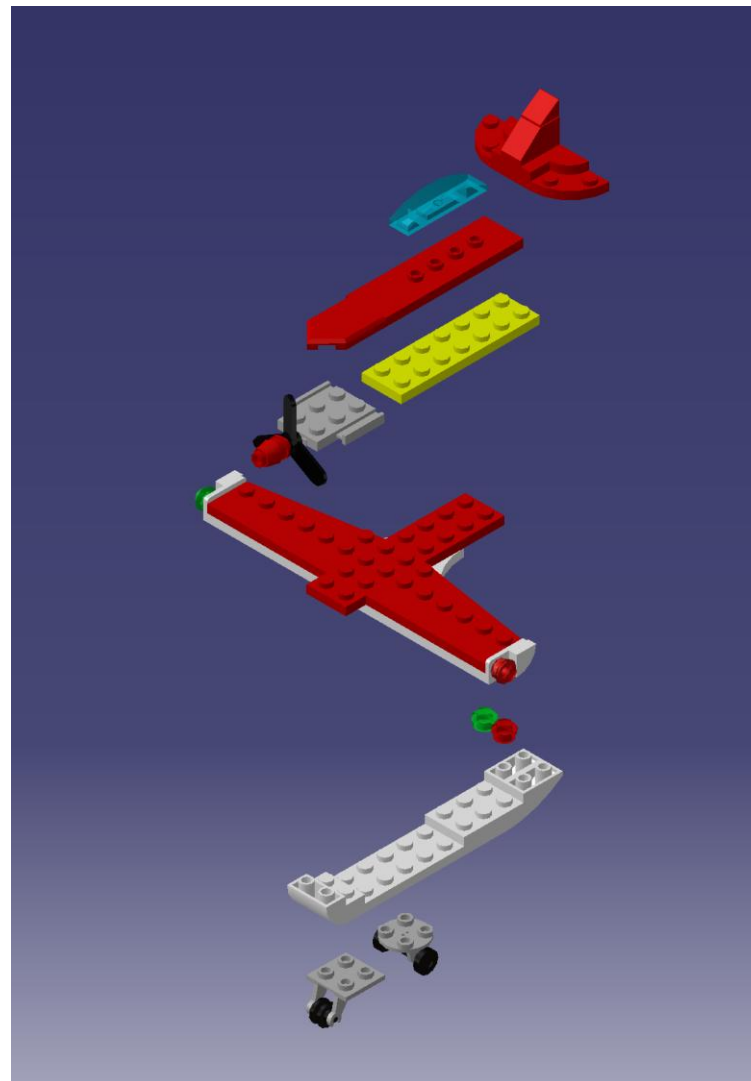


- Added an extra wheel to make it stand better and look like a real propeller plane
- Moved original wheel back

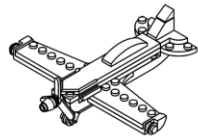
ASSEMBLY



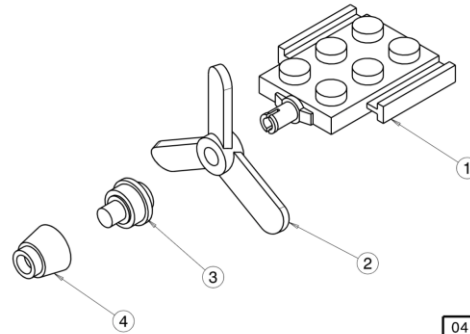
- 4 Subassemblies
- Difficulty with clashes



DRAFTING

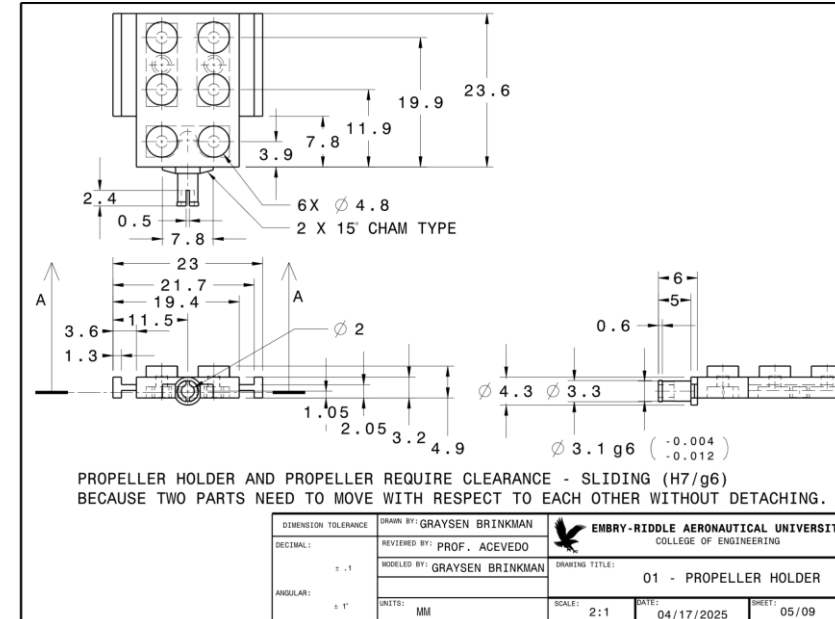


DRAWN BY: GRAYSEN BRINKMAN	EMBRY-RIDDLE AERONAUTICAL UNIVERSITY COLLEGE OF ENGINEERING		
REVIEWED BY: PROF. ACEVEDO			
MODELED BY: GRAYSEN BRINKMAN	DRAWING TITLE: LEGO ICONIC RED PLANE ASSEMBLY - ISOMETRIC VIEW		
UNITS: MM	SCALE: 1:2	DATE: 04/17/2025	SHEET: 01/09



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REVIEWED BY: PROF. ACEVEDO			
MODELED BY: GRAYSEN BRINKMAN	DRAWING TITLE: PROPELLER SUBASSEMBLY - EXPLODE VIEW		
UNITS: MM	SCALE: 2:1	DATE: 04/17/2025	SHEET: 04/09

04	NOSECONE	1	PLASTIC
03	NOSECONE PIN	1	PLASTIC
02	PROPELLER	1	PLASTIC
01	PROPELLER HOLDER	1	PLASTIC
PART #	DESCRIPTION	QTY	MAT'L



- Full Drafting sheet
 - Plane assembly
 - Subassembly and part drafting
- Challenges with dimensioning

RENDERING



Real Plane



Modeled Plane
Without Modification



Modeled Plane
With Modification

Learning outcome

- Modeling and drafting basic and advanced objects
- Greater spatial visualization
- Problem solving

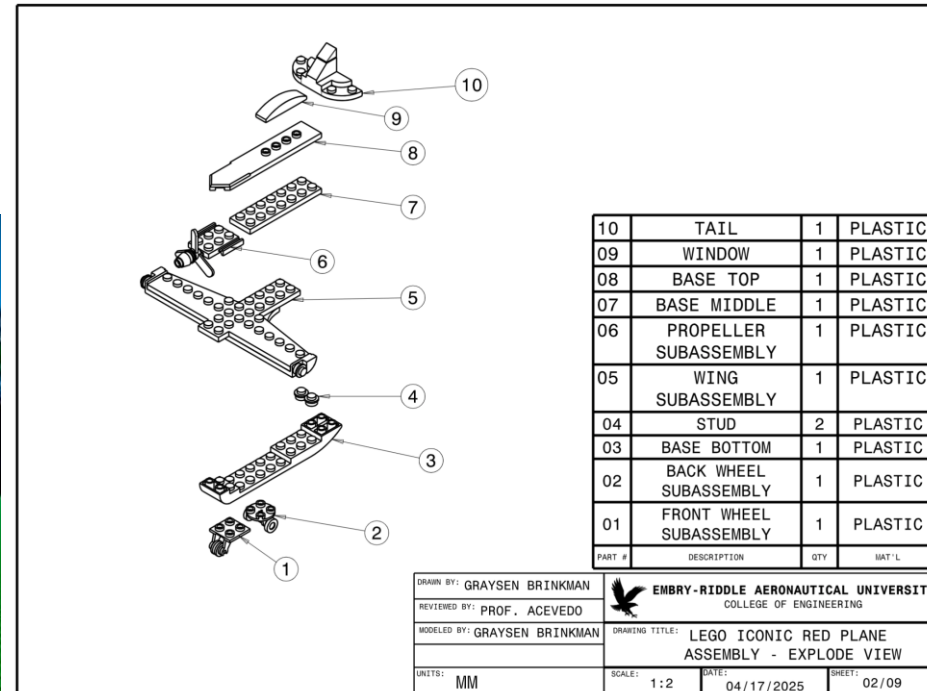


Image Sources

- CATIA
- <https://bergen.edu/drafting-and-design/>
- <https://www.amazon.com/LEGO-Creator-Iconic-Plane-30669/dp/B0CZ7GZS5R>
- <https://knowledge.wharton.upenn.edu/podcast/knowledge-at-wharton-podcast/how-lego-is-building-a-non-brick-empire/>
- <https://www.youtube.com/watch?v=CcezFeQXs7c>