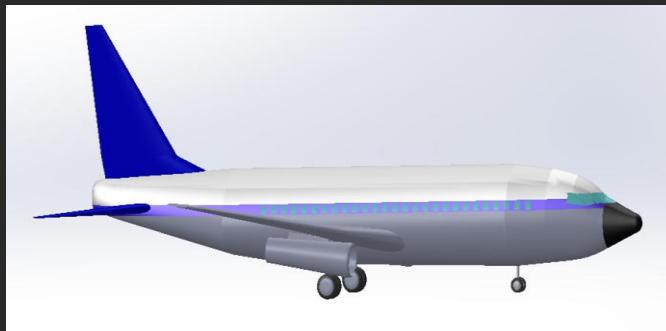


# BOEING 737-



# 100



**GROUP B1**

NATHAN ATSEFF | ALEX HALE | MAYAR ELAMIN | DYLAN CAGLE | ELLEN HIRA

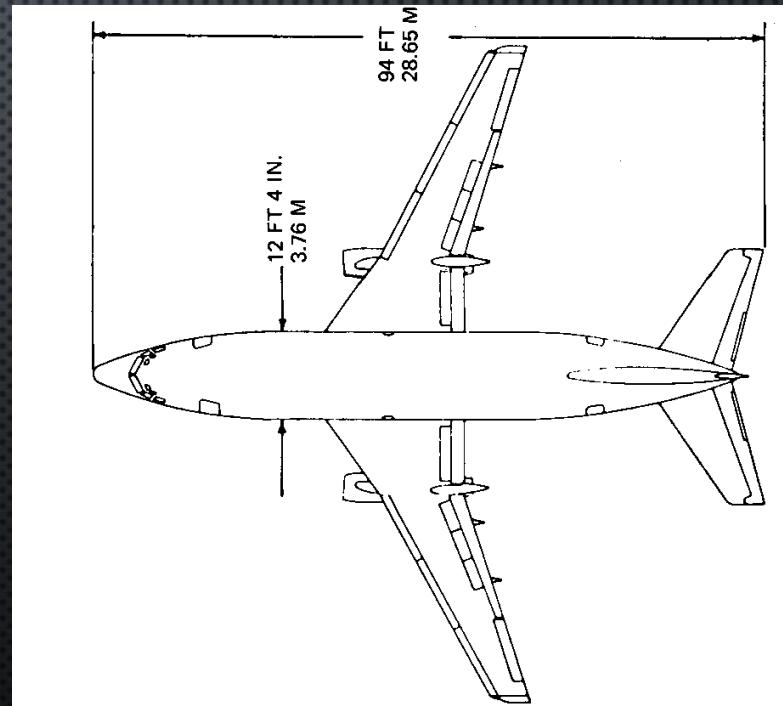
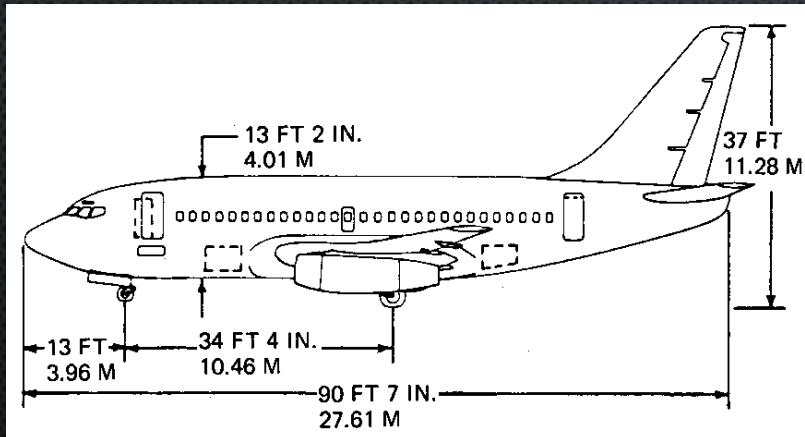
# BOEING 737-100 AIRCRAFT INFORMATION

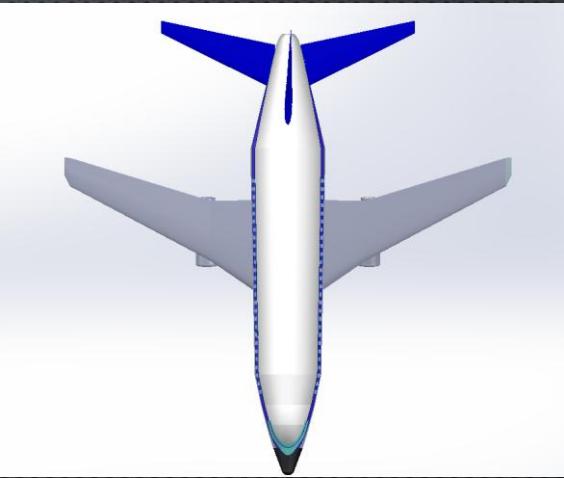
- Seating capacity of up to 118 passengers
- Introduced in 1967 and served into the 2000's
- First of the well-known Boeing 737 line
- 22 of the 30 produced were purchased by Lufthansa



# SPECIFICATIONS

- LENGTH OF 28.65 METERS
- FUSELAGE HEIGHT OF 4.01 METERS
- AIRCRAFT HEIGHT OF 11.28 METERS
- WINGSPAN OF 28.35 METERS
- FUSELAGE WIDTH OF 3.76 METERS



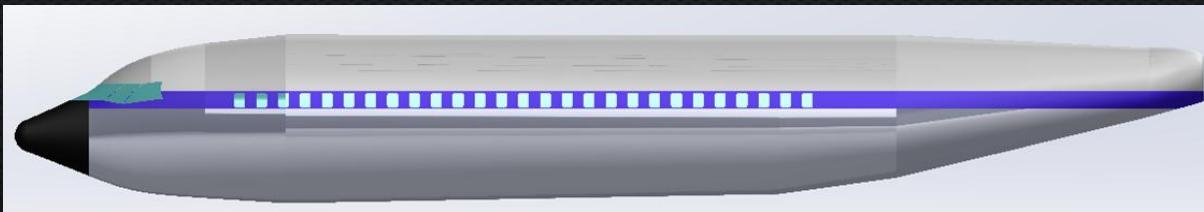
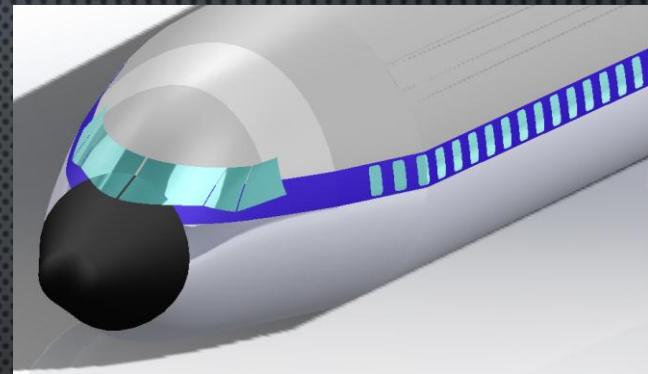


# SOLID MODELING



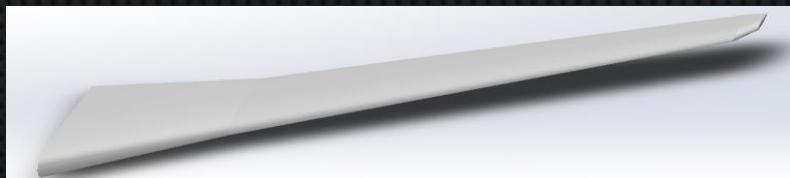
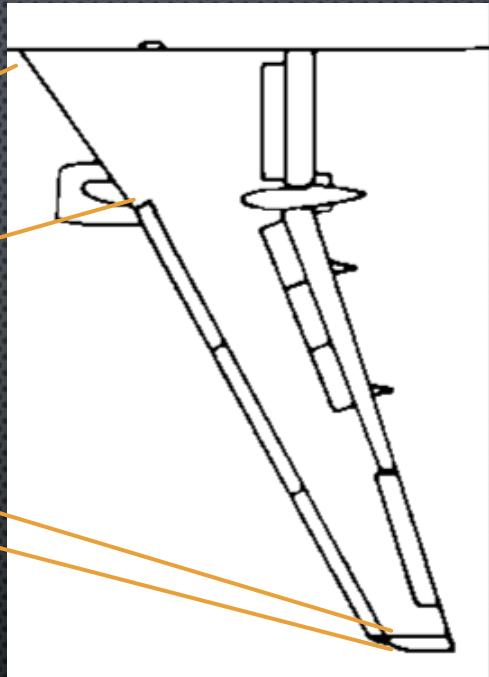
# FUSELAGE

- SOURCED 3 SKETCHES OF THE AIRCRAFT: TOP, SIDE, AND FRONT.
- UTILIZED THE SPLINE TOOL AND LOFT FEATURE TO CREATE GUIDELINES, PROFILE AND BODY OF THE AIRCRAFT.
- FOLLOWED STANDARD BOEING 737 MODELS PASSENGER WINDOW SIZE OF 14" X 10".
- ASSUMED COCKPIT DIMENSIONS FROM IMAGES.
- SPLIT FEATURE WAS USED TO CUT OUT THE WINDOWS.



# WINGS

- IMPORT NACA AIRFOILS
  - ROOT
  - MIDSPAN
  - MIDSPAN
  - OUTBOARD
- MODIFICATION
  - $25^\circ$  SWEEP
  - $6^\circ$  DIHEDRAL
- LOFT

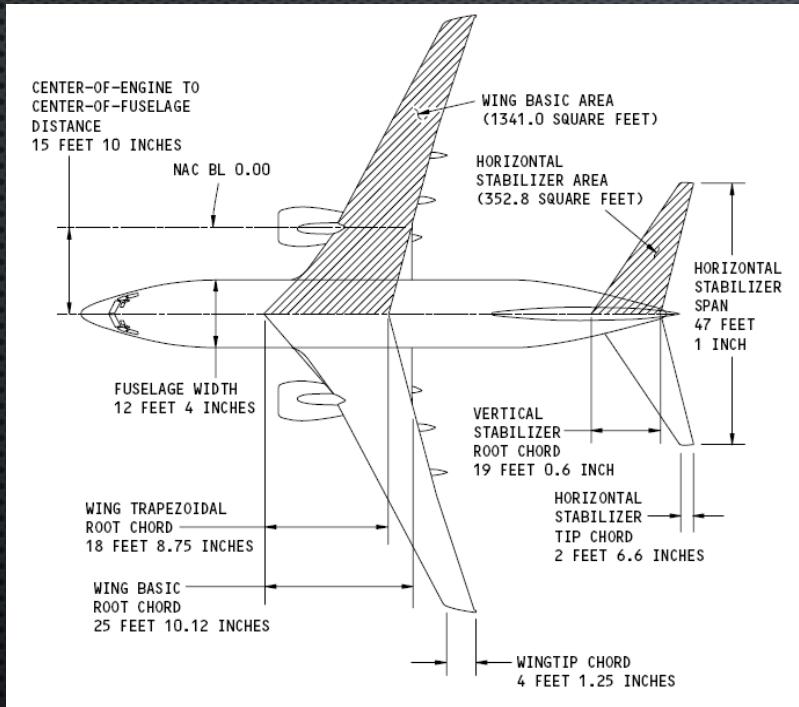


# STABILIZERS

- LACK OF INFORMATION WAS A CHALLENGE
- USED B737A-IL AND B737D-IL AIRFOILS FOR THE HORIZONTAL STABILIZERS
- USED B540OLS-IL FOR THE VERTICAL STABILIZER
- MODELS WERE CREATED BY SKETCHING THE AIRFOILS AND CREATING LOFTED BOSSSES



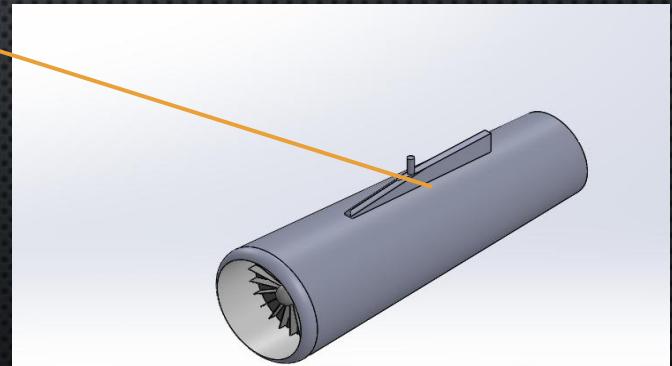
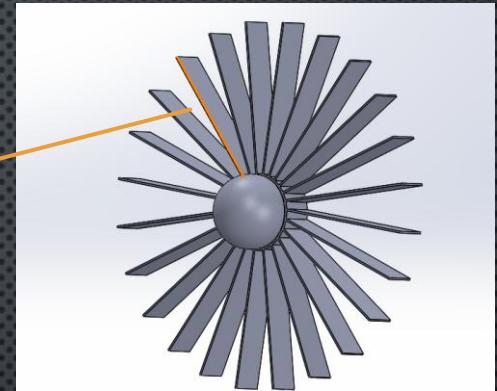
# STABILIZER REFERENCE IMAGES



Aircraft Height (m)	11.23
Fin Height (m)	6.15
Fin Area ( $m^2$ )	20.81
Rudder Area ( $m^2$ )	5.22
Aspect Ratio	1.64
Taper Ratio	0.288
$\frac{1}{4}$ Chord Sweep ( $^\circ$ )	35

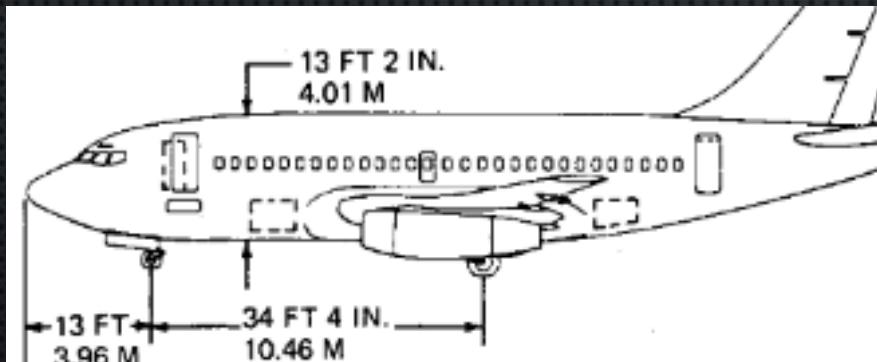
# ENGINE

- MADE USING LOFT AND CIRCULAR PATTERN
- OPENING DIAMETER OF 48 INCHES
- FAN BLADE LENGTH OF 19 INCHES
- WING ENGINE MOUNT



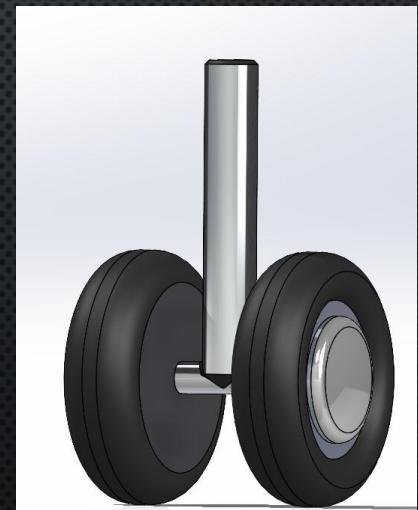
# LANDING GEAR

- LANDING GEAR FEATURES
  - TREAD WIDTH
  - WHEEL DIAMETER
  - LANDING GEAR HEIGHT
  - LANDING GEAR POSITION



Nose Landing gear

Main landing gear



# SOURCES

- BOEING 737 DETAILED TECHNICAL DATA (B737.ORG.UK)
- HTTPS://WWW.PRATTWHITNEY.COM/EN/PRODUCTS/COMMERCIAL-ENGINES/JT8D
- HTTPS://TRAVELUPDATE.COM/AIRCRAFT-LARGEST-WINDOWS/#:~:TEXT=FOR%20BOEING%20MODELS%20THAT%
- MODERN AIRLINERS - BOEING 737