

INDEPENDENT DESIGN + BUILD PROJECT

F1-STYLE RACING SIMULATOR

FROM CONCEPT TO A WORKING SYSTEM

I transformed a personal interest in Formula 1 into a complete ten-month project involving research, planning, budgeting, procurement, fabrication, systems integration, testing, and continuous improvement.



COMPLETED SIMULATOR / FINAL BUILD

TIMELINE

JUL 2015 - MAY 2016

OWNERSHIP

DESIGNED + BUILT SOLO

BUDGET

APPROX. \$700

PROJECT APPROACH

01
RESEARCH

02
DESIGN

03
BUILD

04
INTEGRATE

05
TEST

06
IMPROVE

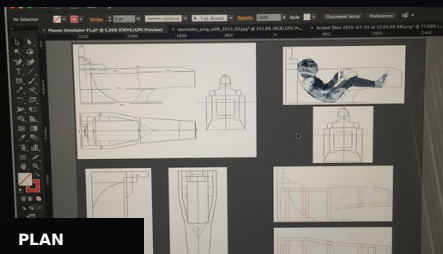
ONE OWNER / SIX CONNECTED STAGES

CORE BUILD

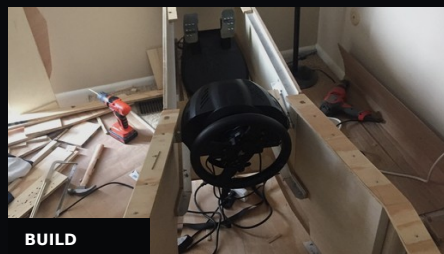
I created the plans in Adobe Illustrator and modeled the body in Blender. The structure combines 90-degree aluminum angle, plywood, foam, and automotive body filler. I joined the St. Louis Woodworkers Guild to access accurate cutting equipment, then fabricated and assembled the project in my apartment.

CUSTOM INTEGRATION

I replaced the original plastic pedal setup with real automotive/racing pedals on a custom metal base. I retained the Thrustmaster potentiometers and engineered the mechanical and electronic interface. The brake uses a master cylinder and hydraulic fluid.



PLAN



BUILD



INTEGRATE

KEY DECISIONS UNDER CONSTRAINTS

STRUCTURE

Selected an aluminum-and-plywood solution over fiberglass to control cost and make apartment assembly possible.

ACCURACY

Found and joined a woodworking guild to access the right machinery for precise plywood fabrication.

COMPATIBILITY

Designed, wired, calibrated, and tested a custom interface between real pedals and the original electronics.

CAPABILITIES DEMONSTRATED

PROJECT PLANNING • TECHNICAL RESEARCH • BUDGET AWARENESS • MATERIAL SOURCING • 3D MODELING • FABRICATION • SYSTEMS INTEGRATION • TESTING + ITERATION



[VIEW FULL PROJECT](#)

EDUARDO LUQUE

M.S. SPORT ADMINISTRATION CANDIDATE | OPERATIONS + TECHNOLOGY + SPORT

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