

3S Trailer Suspension

Meeting # 7

Start Date & Time: Friday, 6/26/2020, 9:00am

Members Present: Kirk, Robert, Caitlin

End Time: 9:40am

Last Meeting:

- Went over PRD with Swenson
- General rule of thumb - generally have a FOS of 3 - because it's a dynamic load
- Dependent suspension system - shock to 1 side of the suspension = other side will absorb some of that shock - our calculations were only concerning 1 side of the system - we should redo it and calculate using both sides.
- Can one component be under the FOS if the others compensate for it?
 - Depends on how big of a cost increase - how conservative are our calculations? We want one component to be able to fail first before something more important fails - and easily replaceable.
- Overall length - we didn't know exactly what to measure from
 - We are not stuck with those dimensions - could make lever longer - lever ratio - calculate it out - we have a lot of room to work with
 - Max length = 4ft? - now we calculate it - and figure out new spring - Don't limit to a fixed dimension
- Shipping weight - went online - reference
 - 10% of capacity is what axle should weigh
- Mounting interface requirements - need way more details
- How long do we want this thing to last?
 - 10000-20000 hours is the goal
 - Acceptable to grease bearings every so often
- Only using sleeve bearings
- Might have to do maintenance - grease in pivoting joints
- Need to separate them - how long it's going to last - periodic maintenance
- Reliability - 90%
- Salvage somethings from places – axle - RC cars axles?
- Environmental requirements - approach to all these things?
 - We are at a good start for now - beyond the scope of our project
- Not designing new wheels or tires

Today's Objectives:

- Complete PRD
- Choose Scale – 1:10?

Notes:

- Schedule is good to go!
- PRD
- Fixed User installation time
- Updated FOS
- Fixed Overall Length
- Fixed Shipping weight
- Working on Mounting/interface requirements
- Fixed Surface Finish
- Fixed Durability requirements to hours
- Fixed Reliability requirements to 90%

For Next Time:

- Wiki-Pages
- Design concepts for a visual representation
- Start Calculations
- Send Swenson Design and links to purchase materials

Comments/Concerns/Reflections from Today:

- One member was not able to make it to the meeting today

Next Meeting Time & Date: **Tuesday, 6/30/2020, 12:00pm**