Recommended “Homework” for Rocketry Lesson 3 9/26/2017

Reading

* read Chapters 3, 4, 10, 12, & 18 in the High-Power Rocketry book
* read through the Flight Readiness Review template slides and start taking the photos it will ultimately require

Tote

* add the new parts to your tote – you should now have everything for the build except for the 3-grain motor case (which is still on order)
* if your camera mount is red, we will replace it with a better one later on
* remember that the motor itself, plus ejection charges, won’t be provided until the day of the launch
* the radio beeper and video camera will be lent out on launch day as well

Exercise

* write an airframe build schedule, with explicit steps, dates, and names of people (by Thursday of this week, please) – aim to be finished building within 3 weeks (preferably less)
* submit a copy of your airframe build schedule to Danny and Prof. Flaten (and to your faculty adviser) by e-mail – we’ll give you feedback on it
* post the schedule and stick to it, crossing off steps as they are finished
* Note: there will be additional homework assigned in upcoming weeks, so the airframe build will need to continue “in the background” and won’t be the only thing you are doing in future weeks – that said, be aggressive with this build schedule and try to get steps done as quickly as possible (in less than 3 weeks, if possible)

Building

* start working through the airframe build – this week you should (at least) get the nose cone modified and the motor mount tube and fin assembly dry-fit and started to be epoxied – by next week you should be inserting the fins (one at a time) and perhaps even get started on building the piston
* Note – the nose cone modification and the piston build are independent from the motor mount tube / fin assembly, so could be done in parallel if need be
* Note – you only have 3 tubes of DP40 no-sag epoxy in your tote so try to use no more than 2 of them on fin fillets (external – done thoroughly – and internal – can be done more quickly) because you will probably need most of one tube of epoxy for the 2 motor mount centering rings, 2 rail button wood blocks, 1 camera mount wood block, and for the av-bay (1 external collar, 2 internal collars, 2 ejection charge caps, and 1 screw switch) – as you build, be efficient with epoxy use (don’t mix more than you need) and modest on how much you use (especially for non-structural joints)
* Note – use J-B Weld for the motor retainer since that part of the rocket gets very hot when the motor fires and DP420 no-sag epoxy might fail there

Document repository: [*http://www.aem.umn.edu/people/faculty/flaten/Rocketry\_Remote\_Lessons\_Fall\_2017/*](http://www.aem.umn.edu/people/faculty/flaten/Rocketry_Remote_Lessons_Fall_2017/)

Danny’s evolving photo-build instructions – check back regularly: [*https://docs.google.com/presentation/d/14IxzFs65U64-Dv\_CV8lyb0TSgxyj1ti4kJh6mG2wQh8/edit?usp=sharing*](https://docs.google.com/presentation/d/14IxzFs65U64-Dv_CV8lyb0TSgxyj1ti4kJh6mG2wQh8/edit?usp=sharing)