Lesson 1 Rocketry vocabulary/concepts 10/19/2021

* Model rocketry vs high-power rocketry
* Motor class (based on total impulse: “A” vs “B” vs etc., high-power starts with “H”)
* Motor thrust (boost phase)
* Burn-out (then coast phase)
* Apogee (peak of flight)
* Descent (under parachute)
* Parachute and shroud lines
* Drogue (small parachute – ejected at apogee)
* Main (larger parachute – ejected close to the ground) (dual deploy)
* Ejection charge (in particular, the built-in automatic (timed) “motor eject”)
* Altimeter Two (data logger)
* “Real” Altimeter (can fire ejection charges for drogue and main parachutes) – AIM USB
* “Split rocket” (for education/exhibition – shows inside of rocket for “single deploy” (single parachute at apogee) and “dual deploy” (“drogue” at apogee then “main” nearing landing))
* Nose-cone (modified to accommodate a forged eyebolt)
* Airframe (body tube)
* Coupler tubing (to connect body tube sections – av-bay is inside a section of coupler tube)
* Av-bay (short for “avionics bay”)
* Eye-bolts (esp. “forged” eyebolts)
* Recovery harness (called a “shock cord” on model rockets)
* Quick-link (mostly used for parachute attachments)
* Fins (rear)
* Canards (forward fins – our rockets won’t have these)
* Bulk-plate (all the way across the airframe)
* Centering ring (to keep things centered, such as the motor-mount tube)
* Motor-mount tube
* Gunpowder-based model rocket motor (see animations document) versus…
* Ammonium perchlorate high-power rocket motors (see animations document)
* Nozzle
* Motor retention (keep motor secure against moving both up and down during all parts of flight, especially during boost (while thrusting it wants to shift forward) and during motor eject (during internal explosion(s) it wants to shift backward))
* Propellant grains
* High-power motor “reload” (slides into a metal case) versus…
* “Disposable” (case-less) motors
* High-power motor case (required by some manufacturers, especially for Cesaroni motors)
* Spacer (hollow; occupies one grain of length inside a motor case)
* “Delay grain” (burns slowly till it reaches the motor eject)
* Parachute protection
  + Use “rocket barf” (preferred over paper wadding) for model rockets
  + Use flame-proof cloth for high-power rockets (or piston protection – not on our kit)
* Two-component epoxy (for high-power rocket build)
  + “RocketPoxy” uses a 1-to-1 mix ratio
  + JB Weld is more high-temperature tolerant
* Surface-mount versus through-hole fins
* “Dry-fit” before using epoxy
* Order of assembly is important, especially prior to “permanent” (epoxy) steps
* CG “center of gravity” (AKA CM “center of mass”)
* CP “center of pressure”
* SM “static margin” – an indicator of “stability” (inclination to fly nose-first – important!)
* FRR “Flight Readiness Review”
  + template slides provided
  + prepare this report and talk through it at your safety check-out interview