Here is a comparison of the performance of some motors. Data is current and from the NAR website - they updated the E15/E20 and E30 (note that the E15 is the same as the E20, they just label them different for different retail packages)
http://www.nar.org/SandT/NARenglist.shtml

Motor type , Weight of motor , Actual Average Thrust , Total impulse

E15W/E20W , 49g , 22N , 35 N-s
E30T , 47g , 33N , 33.56 N-s
F32T , 64g , 34N , 56.9 N-s
RMS E18W , 59g , 17N , 36.5 N-s
RMS F24W , 62.9g , 22.2N , 50 N-s
RMS E28T , 54.4g , 32.5N , 39.7 N-s
RMS F39T , 60g , 37.3N , 49.66 N-s
"E9/E12 sized" RMS casing (24/60) and the F35W reloads.
RMS F35W , 85g , 34.9N , 57.1 N-s

TARC tips follow:

- WEIGH COMPONENTS: Get a good digital scale that measures small amounts. Harbor Freight has a digital scale that measures in 2 gram increments and another smaller one that measures fractions of a gram. This will allow you to weigh components to estimate total rocket weight and also input values into computer design applications. Do not forget to account for the weight of glues and payload padding/cushion. DO NOT use "High Power Rocket" parts as they are 2 to 5 times as heavy as necessary (and cost 2 to 5 times as much).
- LOW DRAG is important to get the most altitude from the least motor and the lightest rocket. You will need to be lighter than the maximum weight so that you can add weight in the payload section if necessary to "tune" the altitude and duration. Drag can be lowered:
    - Airfoil the fins.
    - Make sure fins are large enough and "stick out into the airstream" away from the boundary layer along the body tube. If they do not stick out far enough, the rocket will wobble or wiggle or "cone" around because the fins will not generate any restoring force until the swing way out into the airstream. Your altitude will be horribly low as a result and it will vary wildly from flight to flight.
    - If you use too large a main body ("booster") below the payload section, you can reduce drag by using a "boat tail" to reduce the diameter from the main body to the motor tube size. This can be a simple cone shape cut from card stock, rolled and glued. The length of the taper is up to you, just remember that too short and it will act like the blunt draggy main body tube and too long and it will be hard to incorporate the motor tube (it will need to be very long).
    - Fins need to be perfectly straight or you will spin and lose altitude because of drag.
- MOTORS: Using an E motor will be lighter than using an F motor. 24mm E motors will weigh less than 24mm F motors and 24mm F motors will weigh less than 29mm F motors. There are many choices for motor – pay attention to the Total-Impulse as well as the motor weight. Choose a delay time that will eject right after apogee, not too soon or several seconds later since the rocket will be moving too fast and it can rip the shock cord or the parachute apart. This is where the reloadable motors are useful, since you can legally "drill" the delay module to adjust the delay time down by 1 to 3 seconds less. But, the reloadable motors require some careful assembly and the casing costs a bit, but the reloads are MUCH cheaper than single use motors. You also have to obtain reloads that were made last year or earlier and labeled with the CA Fire Marshal Classification seal as "Model Rocket Motors". Newly manufactured reloads and all Cesaroni motors are classified as "High Power Rocket Motors" and cannot be flown at SCRA launches. We are working to get that law and associated regulations changed, but it will be another year or so.
- WEIGH MOTORS: Use a scale that can measure to tenths of a gram. Some supposedly identical motors can have more or less propellant (and therefore more or less total impulse) and you can often detect this by weighing the motors.
- FINS: Us a strong and lightweight material. Fiberglass is too heavy. Balsa is light, but you will need to carefully select a dense and strong plank – they vary quite a bit! Thin aircraft quality plywood is slightly heavier but extremely strong. Basswood is stronger and heavier than balsa. Cutting slots in the main body tube and gluing the fins "Through The Wall" (TTW) is a great way of increasing the attachment strength and ensuring they are perfectly straight. If using balsa or bass wood, the grain must be parallel to the leading edge of the fin to prevent fins breaking off. This is not as big a problem for plywood.

- LAUNCH LUG: Launch lug needs to accommodate a ¼" steel rod. 6 foot long rods are used to allow the model to build up airspeed. Be sure to mount the lugs on a standoff so the rod will clear the payload section. Mount one near the aft end of the rocket and another an inch or two below the center of gravity when fully loaded (payload, motor, wadding, altimeter, padding, etc.). Attach them securely.
- GLUE AND CEMENTS: Normal yellow wood glue is perfect for all wood and cardboard parts and is lightweight. Epoxy is strong (use a longer cure time epoxy for best strength), but it adds a LOT of weight. Use it in critical areas only, such as launch lug attachments and dissimilar materials (such as plastic to cardboard or wood). Super glue is not a good idea since it is brittle.
- ALTIMETER: READ THE INSTRUCTIONS!!!! Vent holes need to be a decent distance below any body tube diameter change (like the nose cone). Most people place the vent holes and altimeter in the aft most portion of the payload section and put the eggs in the front.
- PARACHUTE: You can make your own from a thick trash bag material with the shroud lines going across the top so they cannot rip out like they could if they were simply tied to holes in the corners. Another option is an off-the-shelf lightweight nylon parachute. You will probably need to try different sizes and vary the weight of the model by adding weight to reach the altitude and duration targets.
- SHOCK CORD: There are many options, but you need to trade off between lightweight, shock absorbing ability, space available and an anchor or attachment method. A medium thickness Kevlar (about double the size of the Kevlar Quest uses) is an excellent anchor with a nice long (6 feet?) length of ¼" wide braided flat elastic cord is a good combination. Kevlar can be anchored by tying it to the top of the motor mount. It needs to be long enough to extend out the top of the main body tube so you can tie on the elastic shock cord and replace the elastic if necessary for future flights when it gets worn or damaged. A 'guard' on the Kevlar where it exits the main body tube is necessary to prevent it from "zippering" the top of the main body tube. This guard can be masking tape folded over or any other soft fabric or padding wrapped around that portion of the Kevlar to prevent it from cutting into the body tube.
- MOTOR MOUNT TUBE: You should install a thrust ring at the depth of the longest motor you might ever use. Typically this would be at a depth to accommodate a motor like the Estes E9 or the Aerotech F32 or F35. They are 1 inch longer than an Estes D12 or Aerotech E15, E20, E30 etc. You MUST install a heat shield as part of the thrust ring to prevent damage from the 'delay afterburn' that will come out of the top of the motor after ejection. This is like a highway flare and pretty nasty. You can make your thrust ring from a used D12 or C11 casing and the nice thick and long casing will protect the motor mount tube above the motor. If the thrust ring is in deep to accommodate the longer motors and you use a shorter motor, simply use a thick spacer made from 1 inch of C11 or D12 casing. You cut them from a used casing using a razor saw (or whatever method you prefer).
- PRACTICE: Fly as much as possible to learn how the model behaves in different weather and to determine if your launch simulations on the computer need to be revised to match reality. Usual sources of simulation errors are: too low of a drag coefficient, under-estimating the weight of the rocket.
- WATCH THE TARC AIA NAR DVD: It is also online on YouTube. http://www.youtube.com/watch?v=gYh1pWHoQXE&feature=player_embedded