Crack Yak Lite Series
Building Instructions

Before you start:

-Get suitable servos and center them using your RC system. For ailerons, use one strong and fast 8 to 10g quality servo, for rudder and elevator use good 4-6g servos.

-Before you start building we recommend to deflect all control surfaces 180° and fix them in such position for at last 3 hours (or better overnight). This will loosen the hinges, for later easier operation by the servos.

Following points correspond to the respective Diagrams on the Diagram Sheet

1. Use medium or thin CA glue to attach the horizontal stabilizer to the „backone". Attach the wings.
2. Locate two 3mm carbon tubes and glue them together using CA glue as shown on the diagram. Make sure the tubes are centered in relation to each other. Slide on plywood wing „ribs" (parts No. 1 and 2) on both sides, do not glue them on yet. Press the wing spar with the ribs into the milled groove in the wing and weihg down the wing on your workbech. The wing is bottom side up, the ribs are flush with and resting their straight edge on the workbench. Use thin CA to glue the spar and the ribs into the wing. Install the elevator servo – you can use hot glue or your favourite method of doint that.
3. Make space (cut out EPP if necessary) for the elevator servo in the lower fuselage part. Also make space for the aileron servo. There is opening in the lower fuselage for the aileron servo horn. There is an aileron servo opening in the backbone. Attach the lower fuselage part to the backbone and install (glue with thin CA) the anti – torsion strips.
4. Glue the z- bends to the aileron pushrods (diam. 1,5x160mm) and use hot air gun to cover them in the included shrink tubings (a,b,c). Attach the extended aileron servo arm to the original one. You can drill 1mm holes through both arms (2 to 4) and CA glue leftover small pieces of the elevator pushrod into those holes.
5. Re-drill 1mm holes into aileron horns (marked as No.4) and install the adjustable pushrod links (with the „quicklock" washers). Cut through the aileron horn slots and install the horns into the ailerons, using CA glue. Install the aieleron pushrods - the Z-bends go into the extension servo arm.
6. Glue the plywood part No. 5 and the wheel shaft to the langing gear leg (CF strip 3x1mm) as shown on Diagram 6.a. Glue the washer No. 6 and reinforce landing gear using a string, soak the string with CA glue on the LG. Slide the wheel on and glue the wheelpant holder and finally the wheel pants.
7. Glue the plywood tab No 8 into the lower fuselage, apply glue only to the top and bottom part (leave the middle section unglued). Slide LG legs to the fuselage so that one leg is in front of the tab and one is behind – you will see precut slots there. There are precut slots for the leg ends in the backbone. Coil a string around the LG legs crossing tightly. Turn the plane over and adjust the LG slightly to make the plane stand with wings level. If you like what you see, fix all the LG assembly with thin CA.
8. Glue the canopy onto the upper fuselage part. Note that the material is thinner than the fuselage (for weight reasons). Make space for the rudder servo and also for the protruding part of aileron servo if necessary. Glue the upper fuselage to the rest of the model. Glue the rudder part to the fuselage.
9. Locate the elevator and rudder pushrods (diam 1 mm x 500mm). Attach the z-bends like you did in the aileron case (shrink tubing and all). Glue all the pushrod guides/supports into the fuselage. The elevator guides are glued either into the backbone (elevator) or to the upper fuselage (rudder). There are small slots pre-cut for the guides. The pushrods should be spaced approx 5 mm from the fuselage.
10. Cut through the prepared slots for rudder and elevator horns (marked as No.2). Drive the z-bend through the elevator horn, drive the pushrod through the respective guides and glue the elevator horn to the elevator. Repeat the same for the rudder pushrod. Important: the elevator z-bend is inserted to the horn from the outside, the rudder z-bend from the bottom.
11. on the servo side, the pushrods are attached by the adjustable pushrod links – just like on the aileron servo. Glue the motor mount to the fuselage front, install the motor.
12. Cut an opening for your receiver – make it a bit smaller for tight hold. Alternatively you can glue (or velcro) the receiver to a suitable spot. Place the battery so that you achieve your desired center of

gravity. You can use adhesive velcro tape or create a suitable cutout to hold the battery. The cutout is our preferred method, just make sure you do it in the right place (after first thoroughtly testing your center of gravity).

13. Glue the SFGs (the vertical tabs) into the wing

Installation and setup of your RC and Power System are beyond the scope of this document. If you are new to the RC hobby, we strongly recommend you to get a help of a more experienced friend. You will be rewarded by a much smoother and better experience and you will almost certainly have more fun with this extremely agile 3D indoor and backyard flyer.

You will also need:
-work space
-polythene sheet
-CA glue with kicker, medium and thin
-sharp knife
-1mm drill bit
-heat gun
-small cutters
-small Phillips screwdriver
-about 50cm of a strong sewing string (thread)

RC equipment:
2x servo 6g (rudder, elevator)
1x servo 9g (ailerons)
motor cca 50W, 25-30g (typically one marked 2203 or 2204)
brushless ESC 10-12A
battery 2S 300 – 450 mAh