L-19 1/3 Valley Aviation Instructions

Vacuform Parts

1 Two Front Floor Sections
2 Left Front Former Covers
3 Right Front Former Covers
4 Rear Former Covers (4)
5 3 Lg sheets of Plastic Insulation
6 Omitted
7 Cover for Center Windshield Former
8 Dash
9 Dash Hood
10 The Light Dimmer and Bracket (2)
11 Fuel Selector Valve
12 Upper Compass on windshield brace
13 Four Rudder Pedals
14 Two Map Cases
15 Two Gas Gauges
16 Door Frame
17 4 Longeron Covers
18 Two Ash Trays
19 Boot Frame

Resin Pieces

18 Air Vents (4)
19 Side Lights (3)
20 Throttle Quadrant (2)
21 Top of Control Stick (2)
22 3/16" Knurled Rod 1" Lg.
23 Omitted
24 Control Stick Boot (2)
25 Elevator Trim Bracket (2)
26 Elevator Trim Wheel (2)
27 Door Handle Bracket (1)
28 Rear Rudder Pedal Mounting Brackets, 4 pieces
29 1/2" Round Solid, 2" Long

Miscellanous Pieces

3 Ft. Alum. Wire for Toggle Switches
3 18" Pcs of 5/32 Alum. Rod for Fuel Line
3 24" Pcs 1/8" Alum Rod Throttle Control Rods
1/2" Plastic Tubing, 12"
1" x 3/4 Long Plastic Tubing for Compass
1 Plywood Pc for Fuel Guage, 1/4 x 2 x 4
Computer disc with Build Pictures
Six Extra Large Pins
5/32" of Alum. Tubing, 6" Long
1/8" Plastic Tubing, 2" Long
Brass Front Seat Frame
Brass Rear Seat Frame
Green Denim for Seat Covers
Four Seat Rails, 8" Long
3/8 Plastic tubing for Front rudder, 6" Lg
12" of Long Black Chord
One T-Pin
Two Aluminum Control Sticks
12" of 1/8" Aluminum Rod

L-19 1/3 Instructions

Thank you for purchasing this L-19 1/3 Master Series Cockpit Kit. This Kit also comes with a Computer Disc which will assist you in building this kit. There is also a book called the Loveable Bird Dog L-19. I am sure there are other books out there which also will help you. Remember before you cut any of the plastic pieces you should make a template out of cardboard or plastic and then cut the final piece. The paint that I use for this interior is Testers Model Master. You may use any other paint you like but please be sure to test this on a scrap piece of plastic. One of my cockpits I used Real Zinc Chromate Paint from the airport and after a few months it made the plastic curl. It is also recommended that you read the instructions thru before you begin this project so you will have a good idea of where all the pieces go. The order of the instructions is approx. the order that you will need to build this kit, however you may change them around to suit your purposes. I put my floor approx. 5 1/2" down from the main window ledge. This can be 7 1/2 changed to suit your needs. I also installed the dash on the former that was on the plans and did not change it. It is very close to the real dash and possibly back a little bit but it works out nice. the fuel equipment and air vents over head may have to be changed depending on where your spars or wing tubes go thru.

Thank you for buying this 1/3 scale Dynamic Balsa cockpit. Because we are building these on such a limited basis I did not make a full cockpit build of this kit. I have both the 1/4 and 1/5 scale so I know how they go together. There may be some minor discrepancies in the plans but it should be easy to overcome. If you do have any problems with this please feel free to call me at 815-856-2272 or email me at dbalsa1@gmail.com the pictures are the computer disc are from my 1/5 scale.

1. **FRONT AND REAR FLOOR-** After you have determined where you want the floor level you should sheet this area with 3/32" balsa wood, you should also reinforce the area under the seats if you are going to have a pilot in this airplane. On the front section you will notice two areas in which the control boot sits, the center of the front control stick is approx. 3 1/2" behind the dash former. You need to center this piece and trim the sides to fit your airplane. The front floor should be trimmed just behind the rivet line at the back and the rear floor section should be trimmed just behind the rivet line at the back also. You should put the back floor in first and then the front floor should overlap the back floor by a little bit. After this floor is glued down you can either paint the floor Zinc Chromate now or you can wait until the whole interior that needs to be painted green is in place and then paint the whole interior at one time.

2. **FORMER COVERS -** Cut out these former covers so that the straight side is to the back. You want to keep these as close to the fuse side as you can. After you glue your former doublers in place you should put these covers as far back as possible but remember the door frame goes on the right side and you have to leave enough room for the door frame. You should also keep them as shallow as possible. You can glue balsa to the inside these covers so you can glue them to the formers in the airplane and to the floor. Remember when you are trimming these to go small amounts so you will not make any mistakes. You can slot the top so that it will go over the cross former at the top. You should also glue a piece of balsa on the right former on the inside edge so that the yellow emergency handle can be glued into this balsa, you should drill two holes

one approx. 1 5/8" off the floor and the other 2 5/8" from the first hole. Using a piece of 1/8" solid rod. make the emergency handle but do not install it until after the interior is painted green. The formers covers for the middle and rear former are also done in the same way and these covers are identical.

3. DOOR FRAME - Cut this out and glue in balsa on the inside so that you can use this to glue it to the inside of the fuse. If you want to narrow this door frame cut it in the center at the top and cut out what you need to and glue back together. The height should be approx. 3/8". Once you have done this you can glue it to the inside of the fuse.

4. MISCELLANOUS LONGERON COVERS- You can use these to cover the formers just below the windows or you can make other misc. formers with these pieces depending on how you are detailing your cockpit interior. If you look on the video you will look and see where I used these pieces at. There are several extra pieces you may or may not want to use. On my interior after it was painted green I made covers out of the white plastic provided and covered the side panels after this was painted OD Green.

5. RUDDER PEDALS - Cut out the rudder pedals leaving approx. 3/16" around the edge. Space the rudder pedals approx. 3 1/4" between them. Take the pedal brackets and glue a price of 1/8" rod bent in a square U. This rod will glue to the top of the pedal brackets and to the back of the rudder pedal. You can angle the pedal slightly and leave slightly off the floor. In front of the outline of the rear control stick boot plate or approx. 12" from the dash to the rear of the rudder pedals. They are angled so that the lower part is almost horizontal and approx. 1/2" off the floor. These assemblies should be painted zinc chromate green and should be installed after the interior is painted zinc chromate green. With all these pieces now installed you should be able to paint the interior zinc chromate green. If you are painting the whole interior at one time.

6. DASH - cut out the dash around the edge and leave approx. 1/8" lip. Cut off the back of the gauge holes so they are appox. 1/16" deep and all the same depth. If you use a sharp razor knife it will be easy and you can also sand them after you cut the back off. You will also need to cut out the half circle for the gauge in the upper right corner. You can try this dash panel now. Make sure it fits in your airplane and then either paint the whole dash panel semi flat black or gray with the gauges semi flat black. There are several different combinations and I had several pilots that told me they never flew one with all the gauges in the dash at the same time. After it is painted you need to take the gauge panels and cut around each panel, not each gauge. These gauges are laminated so after you cut around each panel put them in the back of the dash and then tape them in place using scotch tape. You can also use low temp hot glue to tack them in place. After they are tacked in place use a piece of 3/32" x 4" balsa and make a dash backer and cut this 3/16" smaller than the dash all the way around and then seal around this edge with low temp hot glue. After the gauges are done you can drill a small hole and use the aluminum wire to make your toggle switches. You can flatten them out with a hammer to make paddle switches or leave them just straight wire for regular switches. Use the resin knurled rod to make the knobs for the compass and then paint the other buttons the colors on the computer disc. You can glue this to the dash former when you are ready.

7. DASH HOOD- This dash hood fits just inside the windshield and goes back to the center of the dash just enough to cover the gauges and the sides angle over to the vertical former on the fuse. You will need to tape this to the top of the dash and then install your windshield over the top of this to mark where the edge of the windshield then cut out and paint flat black and then glue in place.

8. COVER FOR CENTER WINDSHIELD FORMER - This will fit right over the former on the plans for the center windshield support. If you are mounting the compass to this frame you need to cut a small angle from balsa wood and glue it to the center of this brace and then glue the compass to that. The whole cover should be painted zinc chromate green.

9. UPPER WINDSHIELD CANOPY BRACE COMPASS- Cut this out around the edge approx. 1/8". Using the 1" tubing cut to approx. 3/4" of an inch and glue over the back of this gauge centering on the hole. Then using a piece of scrap plastic cover the back of this tubing. Drill a hole in the bottom of this tube in the back 1/8" dia. This is for the electrical cable run this cord down along side of the center windshield support. After this whole assembly is painted flat black you will need to cut out the compass gauge off of the gauge sheet. The flat part of the compass housing is the bottom. After you glue the compass gauges inside the square cut a small piece of clear plastic and tack glue over the gauge. This whole assembly can be glued to the triangle piece mentioned in number 8.

10. THE LIGHT DIMMER AND BRACKET - Cut this bracket out so that you cut approx. 1/16" outside the circle for the control knob so it is approx. 1" long. You need to paint the bracket green and the knob for the dimmer black with the top of the knob painted white. On the back side you need to take the 1/2" Plastic solid Rod and cut two pieces 1/2" long paint these black and glue to the back of the light dimmer bracket behind the knob. Drill a hole from top to bottom thru the plastic for the electrical wires. These can glue on approx. 1" above the window ledge and to the front of the front formers one on each side.

11. SIDE LIGHTS- Two of the side lights go approx. 1 1/2" above the light switches you just installed. Drill a 1/8" hole in the side of the light approx. in the center do not go all the way thru. Drill a 1/8" hole in the former cover approx. 2" above the window sill. Using a piece of the 1/8" dia. Rod bend the end of the rod up slightly and put the light on the rod. Test this out so that the light should shine or the light should be pointing toward the dash. There is a left and right side light in the front also drill a 1/16" hole in the end of the light for the wire. Paint the light flat black and paint the large end of the light silver. Glue the light onto the 1/8" alum. Rod which should be painted zinc chromate green. After the lights are installed using a piece of the wire provided glue in the end of the light down thru the light switch and down along side of the former cover. This should complete the front lights. For the back light use a piece of the 3/8" wide alum. Strip bend it so that there are two legs approx. 1" long and 3/8" between them. Glue this onto the rear former cover take the light and drill a 1/16 " hole in the end and paint black and silver like above, take a piece of the wire wind around a pencil several times to make a curly cord and glue one end into the light and glue the other end by the former cover. This light should be aimed over the passengers seat.

12. CONTROL STICK BOOT - You should drill a 5/16" hole into the top of these two pieces and on the flat side of the boot you should drill a 1/2" hole approx. 1/4" deep. Then paint these flat black. The front boot has the 1/2" hole facing back and the rear boot has the 1/2" hole facing forward. This is for the control rod shaft measure this tubing and cut to length and paint green. After it dries insert one end in each end of the boot these should line up in the places marked on the floor with a rod between them. The 5/16" hole in the top is for the control stick, you should leave these out until you are finished with the interior.

13. CONTROL STICKS - Sand the sides of these sticks to remove any flashing. At the top of the stick goes the handle drill a 5/16" hole in the end of these resin pieces and paint black. You may cut off the bottom of the sticks to adjust the height, the rear sticks should be 9 1/2" from the floor and the front stick should be 10" from the floor. The control stick should be painted green with the curve going to the front.

14. AIR VENTS - These should be painted green then paint the center section white with a recessed slot painted black. These are glued to the very front on the inside edge of the wing and right in front of the middle former above the side window and door.

15. ELEVATOR TRIM BRACKET AND WHEEL - Paint these brackets zinc chromate green and the front bracket goes approx. 2 1/2" off the floor and 3 1/2" " behind the left front former cover. The rear bracket 3" off the floor and 3 1/2" behind the left middle former cover. Do not put the wheels on until the vinyl covers are on. The wheels are painted silver.

16. MAP CASES Cut these out so that they are approx. 1/2" deep. They are both painted zinc chromate green. Glue a piece of balsa inside the cases and sand flush with the edge so that you can glue it to the airplane. The front one goes on the door to the front of center and 1" below the window ledge sill. The rear one goes behind the rear former cover on the right side.

17. ASH TRAYS- Paint these black and paint the top silver. One goes in the rear between the middle and rear former cover below the longeron cover and the front goes between the front former cover and the dash.

18. DOOR HANDLE BRACKET - Sand this piece and drill a hole in the side near the rounded end 1/8" dia. Cut a piece of Alum. Rod 1" long glue into the hole and curve the end towards the door, paint this assembly silver and glue in the center of the door right below the window sill.

19. SEAT RAILS - Drill 1/4" holes 5/8" apart with approx. 6 holes in each piece. These glue on the floor centered on the control sticks. The front of the front rails is approx. 4" behind the dash and the front of the rear rails is approx. 2" from the back of the front rails. Glue balsa wood inside these rails so that you will have a flat surface to glue to the floor. You will have to use the seats as a spacer to glue these rails to the floor.

20. SEATS - These seats come pre-assembled but you should sand off any sharp edges you will find on the seats and paint zinc chromate green. Then using the green cloth cut the cloth out and wrap around the seat frame and glue in place. Cut across the corners where there are sharp edges and wrap around the curved part.

21. GAS GUAGES Cut this gauge out around the edge and glue into the piece of wood provided cut out and sand the wood to the edge of the gauge then paint this assembly black. Cut out the gauge provided and glue into the hole for the gauge. Then cut out a clear plastic cover and tack glue in place over the gauge. There are two of these one for the left side and one for the right side and these go above the windows on each side of the pilot.

22. FUEL SELECTOR VALVE - Cut this out so it is rounded at the top and the bottom lip is approx. 1/4" wide. Glue a piece of the 1/2" tubing behind the valve so that it is as long as the step in the valve. Drill one hole in the top and one hole horizontally 5/32" dia. Paint this green with the valve control painted black and the valve body behind painted black and the top of the control painted red. Glue this between the gauge and the air vent above the left side window. Using the alum. Rod cut and bend one piece from the front hole which will go from the left side tank in the wing. The top hole gets bent to where it crosses over to right side along the former and goes into the right wing root. The rear hole in the valve goes down along the middle former and under the plastic covering. These wires are all painted OD green before they are glued in place.

23. THROTTLE QUADRANTS -The throttle quadrant for the back goes just in front of the center former and below the window ledge. You may have make a spacer to space the throttle quadrant out away from the fuse. The front quadrant goes just to the front of the left front former. This quadrant goes between the dash and the former cover if it does not fit in between there you can sand a notch in the quadrant so that it fits around the former cover. You should also put a support behind the quadrant to glue it to. Paint both of these throttle quadrant black for the the inside control lever the white one, paint the top of the pin white and put a pin thru a piece of plastic tubing 1/2" long drill a hole in the throttle quadrant and glue the pin into the hole making sure that it is in the same place on both quadrants. On the inside slot on the top of the quadrant paint the top of the pins red insert in a piece of 5/32" alum. Tubing flatten 1/2" inch closest to the pin with the pin in the center. Cut off with a band saw 3/8" inch after the flat drill a round 1/8" hole in the center of the quadrant and insert his tubing till the flat is flush with the top of the quadrant. Then glue this in place. Repeat the same procedure for the other lever and use a black pin for that one. Then glue these quadrants into the airplane using piece of 1/8" alum. Rod make the three control rods that connect the two quadrants and glue to the bottom of the quadrants.

When you glue the seats in place if you are going to have pilots in the seats you may want to put balsa in between the seats and the floor to help support the weight of the pilot. There is a book called " The Loveable One Inner" by Minard D. Thompson Jr. this book should have plenty of pictures and everything you would ever need to build and detail an L-19. When you finish this interior please send pictures as I am always interested in fellow modelers projects. Thank you, Brian, If you have any questions please call me at 815-856-2271.

Tips for a Better Cockpit Interior

1 Before cutting your pieces out of plastic you should cut a sample piece out of heavy paper or plastic maybe even cutting several pieces and taping them together to form the layout then put this over your piece, mark it and cut it out.

2 Before gluing any plastic make sure your glue is compatible with the plastic by testing it on a sample piece.

3 If there are resin molded pieces in your cockpit interior you can lighten them up by drilling them full of holes before you glue them in place.

4 For knobs and levers you can use various pins from your local sewing shop. Using different style pins for the levers and you can also cover the pins with paper or wood to simulate the real levers.

5 Before starting any cockpit interior you should purchase literature on the airplane and study the interior so you know which colors to paint and where the various switches and levers are and also what kinds of switches and levers there are.

6 If you kit has aluminum pieces in it that you have to cut you should insert a piece of wood inside before you cut or back it up with a piece of wood.

7 when you are putting an interior into a flying plane you need to make sure that it is braced and glued securely so that the vibration will not break it apart. You may even consider using a flexible glue such as silicone.

8 When you are doing an interior and you cannot put the floor in a scale location put the floor as low as you can and then cut off the bottom so the side walls and such to still give it a scale appearance.

Installing the Cockpit pieces into the Airplane

Floor- Remember to put sheeting on the floor if you are going to have a pilot and other pieces sitting on the floor. You can also put extra bracing under the floor where the pilots seat goes.

Side Walls- You should glue balsa to the back side of the molded side walls to have a solid surface to mount on.

Dash and Gunsight- Make sure the dash is securely glued in place and if you can put extra bracing where the gunsight goes. You can also put an extra dowel thru the dash and into the gunsight to help support it.

Gluing Pieces In- Make sure your glue is compatible with the plastic and if you can you should use a glue with some flexibility such as silicone or rubber based thick CA.
Also remember to remove any paint where you are gluing pieces together.

Seats- If you are using a pilot you will want to put balsa under the seat so the seat is not supporting all the weight of the pilot. You can also stick a dowel up thru the balsa and thru the seat to help secure the pilot.

After the pieces are installed you can weather the interior by rubbing small amounts of silver paint on wear areas also smearing black marker or charcoal as to where greasy areas would be.