

# L-19 1/4 scale

## Parts List

### Vacuform Parts

- 1 Front Floor Section
- 2 Rear Floor Section
- 3 Left Front Former Covers
- 4 Rear Front Former Covers
- 5 Rear Former Covers (4)
- 6 Battery
- 7 Battery Box Bottom
- 8 Battery Box Top
- 9 Relay Shelf Below Dash
- 10 Cover for Center Windshield Former
- 11 Dash
- 12 Dash Hood
- 13 The Light Dimmer and Bracket (2)
- 14 Fuel Selector Valve
- 15 Upper Compass on windshield brace
- 16 Rudder Pedals (4)
- 17 Map Cases (2)
- 18 Gas Guages (2)
- 19 Door Frame
- 20 Misc. Longeron Covers 4 lg, 4 sm.

### Resin Pieces

- 1 Air Vents (4)
- 2 Side Lights (3)
- 3 Throttle Quadrant (2)
- 4 Top of Control Stick (2)
- 5 Front Control Stick
- 6 Rear Control Stick
- 7 Ash Trays (2)
- 8 Control Stick Boot (2)
- 9 Elevator Trim Bracket (2)
- 10 Elevator Trim Wheel (2)
- 11 Door Handle Bracket (1)
- 12 Rear Rudder Pedal Mounting Bracket

### Miscellaneous Pieces

- 1 3 Ft. Wire for Lights
- 2 3 Ft. Alum. Wire for Toggle Switches
- 3 3 12" Pieces 1/8 Alum. Rod
- 4 3 12" Pieces of 3/32 Alum. Rod
- 5 9" of 3/8" Plastic Tubing
- 6 1" of 3/4" Plastic Tubing
- 7 1 Plywood Piece for Fuel Guage  
1/8" x 2 x 4
- 8 Dash Guages
- 9 Plastic for Dash Guages
- 10 Computer Disc with Pictures
- 11 6 Large Pins
- 12 6" of 1/8" Alum. Tubing
- 13 2" of 3/32" Plastic Tubing
- 14 2" of 3/8" Round Plastic Solid
- 15 Front Seat Frame
- 16 Rear Seat Frame
- 17 Green Denim 8x30" for Seat Covers
- 18 Vinyl Cloth 12 x 30"
- 19 4 Seat Rails, 6 1/2" Long
- 20 6" of 3/8 Plastic Tubing for Front Rudder  
Pedal Mounting Bracket
- 21 6" long Black Cord
- 22 1/4" Plastic Rod 3"
- 23 3/8 Alm. Strip 4"
- 24 T-Pin

## Instructions

Thank you for purchasing this L-19 1/4 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 Testors 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 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.

1. FRONT AND REAR FLOOR (1 & 2) 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. 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 ( 3,4,5 ) 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 doubler 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 1/4" off the floor and the other 2" from the first hole. Using a piece of 1/8" solid rod (#3) 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 (#19) 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. 1/4". Once you have done this you can glue it to the inside of the fuse.
4. MISCELLANEOUS LONGERON COVERS (#20) 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 vinyl provided (#18) and covered the side panels after this was painted OD Green.
5. RUDDER PEDALS (# 16) Cut out the rudder pedals leaving approx. 3/16" around the edge. On the front rudder pedals use a piece of 6" x 3/8" tubing (#20). Using a piece of wood or the 3/32" wire provided make a spacer between the tube and the rudder pedals glue one end of the spacer onto the plastic tube and the other end onto the back of the rudder pedal. This whole assembly can be painted green and installed under the dash after the interior is painted green.

Space the rudder pedals approx. 2 1/2" between them. Take the rear pedal brackets and glue a piece of the 1/4" Plastic Rod (#22) between the tops of the pedal again using a piece of the 3/32" wire (#4) or a piece of balsa for a spacer between the pedal and the 1/4" rod. If you are using wire you should drill a hole thru the plastic and bend a 90 degree elbow on the wire which will glue to the back of the rudder pedal and glue the other end in the hole. These pedals should be centered approx. 3/4" of an inch between them and the back of the rudder pedals should be approx. 1/2" in front of the outline of the rear control stick boot plate or approx. 9 1/2" from the dash to the rear of the rear 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. BATTERY (#6, 7, 8 ) The battery box bottom and top are painted zinc chromate green and should be cut off so that there is an 1/8" lip around the edge. The one with the raised portion is the top and you may want to run two wires out of the top which go up under the dash. This assembly sits right under the relay shelf below the center of the dash in front of the front control stick. The battery itself is painted black and then the top and bottom pieces are glued to this. Trim off the edges where the webbing is as these edges will be covered by the top and bottom of the battery box. The battery is painted black.

7. RELAY SHELF BELOW DASH ( # 9) Cut this out along the edges and cut the angle out of the ends, this shelf hangs down and goes under the dash in the center. With the nameplate facing out. It is painted zinc chromate green. Before you install the dash you need to mount this under the dash and glue a pieces of balsa between the two to support the relay shelf. The plate in the center can be painted black.

8. DASH (# 11) Cut out the dash around the edge depending on how you want to build this or how much room you have on your airplane you may want to cut off the little lower side dash panels that hang below the left and right side of the dash. With the former covers these are hidden in some cases. Cut out the back of the guage holes so that there is approx. 1/16" lip around the guages you should use a sharp razor knife and this should be pretty easy. You will also need to cut out the half circle for the guage and the upper right corner. Next you will need to paint this dash either flat black or grey with the guages black. There were several different combinations and I have had several pilots tell me that they never flew one with all the guages in the dash. After it is painted you need to take the clear plastic for the guages ( #9) and cut out and tack glue to the back of the dash. You can use any type of glue you want thick CA or a low temp. glue gun works best. Next cut out the whole set of guages at one time and put over the plastic so you can read the guages (#8) thru the front of the dash. With the guages all lined up tack glue to the back of the dash, next take a piece of 1/16" balsa or light ply and tack glue over the whole assembly. On the front of the dash paint the buttons white and paint resin piece (# 13) which is the knob for the attitude indicator paint this knob black and the front of it white and glue it in the lower right hand corner of the attitude indicator guage which is the large guage top to the left of the center. You can paint the T-Pin ( # 26) red which is the engine primer handle and it goes in the lower right little side dash. Before you glue this dash into place you need to glue the lower relay shelf (# 9) to the bottom of the dash and brace with a piece of balsa. Below the circuit breakers is a row of toggle switches using the wire provided (# 2) flatten the end of the wire with a hammer sand the end round drill a hole in the dash approx. .040 and insert this thru the hole leaving the flatten end stick out bend the end down to simulate a toggle switch. Put a drop of glue on the back.

9. DASH HOOD (# 12) 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.

10. COVER FOR CENTER WINDSHIELD FORMER (# 10 ) This will fit right over the former on the plans for the center windshield support. If you are mounting the compass (#15) 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.

11. UPPER COMPASS WINDSHIELD BRACE (# 15) Cut this out around the edge approx. 1/16" Using the 3/4" tubing (# 6) 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 (# 21) 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 (# 8). 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 10.

12. THE LIGHT DIMMER AND BRACKET (# 13) 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 3/8" Plastic solid Rod (# 23) and cut two pieces 3/8" 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.

13. SIDE LIGHTS ( Resin pieces # 2) Two of the side lights go approx. 1" 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 (# 3) 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 (# 1) 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 (# 24) 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 (# 1) 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.

14. CONTROL STICK BOOT (Resin # 8) You should drill a 1/4" hole into the top of these two pieces and on the flat side of the boot you should drill a 3/8" hole approx. 1/4" deep. Then paint these flat black. The front boot has the 3/8" hole facing back and the rear boot has the 3/8" hole facing forward. This is for the control rod shaft (# 5) 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 1/4" hole in the top is for the control stick, you should leave these out until you are finished with the interior.

15. CONTROL STICKS ( # 5, 6 Resin) Sand the sides of these sticks to remove any flashing. At the top of the stick goes the handle (# 4 resin) drill a 1/4" 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 6 3/4" from the floor and the front stick should be 7" from the floor. The control stick should be painted green with the curve going to the front.
16. AIR VENTS ( Resin # 1) 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.
17. ELEVATOR TRIM BRACKET AND WHEEL ( # 9 , 10 Resin) Paint these brackets zinc chromate green and the front bracket goes approx. 2" off the floor and 2" behind the left front former cover. The rear bracket 3" off the floor and 1 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.
18. INTERIOR FUSE COVERS ( # 18 vinyl cloth) Cut these out so they fit between the formers against the floor and on the bottom of the longeron covers between the formers. You should glue 1/4" balsa strip inside the fuse to glue these to. Most of these are just rectangular covers except the left side where the elevator trim wheels go. The rear trim wheel just goes thru a cut in the cloth and the front one is notched out from the trim wheel bracket to the front former cover. Paint this vinyl OD green, you may want to use a water based paint or a lacquer but practise on a piece of scrap. I painted mine with enamel paint and it is taking forever to dry. After you paint these glue these in place.
19. MAP CASES ( # 17) Cut these out so that they are approx. 5/16" 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.
20. ASH TRAYS ( # 7 Resin ) 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.
21. DOOR HANDLE BRACKET ( # 11 Resin) Sand this piece and drill a hole in the side near the rounded end 3/32" dia. Cut a piece of Alum. Rod ( # 4) 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.
22. SEAT RAILS ( # 19 Misc. pcs) Drill 3/16" holes 1/2" 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. 3" behind the dash and the front of the rear rails is approx. 1 1/2" 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.
23. SEATS ( # 15, 16 misc. pcs ) 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 ( # 17) 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.

24. GAS GUAGES ( # 18 ) Cut this guage out around the edge and glue into the piece of wood provided (# 7) cut out and sand the wood to the edge of the guage then paint this assembly black. Cut out the guage provided (#8) and glue into the hole for the guage. Then cut out a clear plastic cover and tack glue in place over the guage. 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.

25. FUEL SELECTOR VALVE (# 14) Cut this out so it is rounded at the top and the bottom lip is approx. 1/4" wide. Glue a piece of the 3/8" 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 1/8" 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 guage and the air vent above the left side window. Using the alum. Rod (# 3) 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.

26. THROTTLE QUADRANTS ( # 3) 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 inside control lever the white one, paint the top of the pin white and put a pin thru a piece of plastic tubing (# 4) 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 1/8" alum. Tubing (#12) 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 til 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 3 3/32" alum. Rod (# 4) 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 Niner" 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.