

FIGURE 4-1

INSTALLATION

The Model GDA-19-2 Receiver and Model GDA-19-4 Servo units can be used in model cars and boats as well as in model airplanes. But since the five channels of this system are ideal for use in model planes, only this type of installation will be described. These same installation principles can also be applied to other types of models.

The main points for you to consider in your installation are: weight distribution, directness of action from the Servos (through the pushrods) to the devices they control, and protection from mechanical shock, vibration, dirt, and oil. Many model manufacturers furnish complete data for mounting and connecting radio control equipment in their planes.

Figure 4-1 (on Page 85) shows a typical model airplane installation. Compare this Figure with your plane very carefully to determine the best location for the Receiver, Servo units, and Battery. Temporarily set the components in the chosen places to be sure they will fit. Allow enough space for foam rubber packing around the Receiver and Battery. After you have decided on the most suitable locations for all components, remove them from the plane and then install them one at a time.

The following instructions cover the most important considerations for the installation of each component.

BATTERY

The Battery should be wrapped in foam rubber and installed forward of a strong bulkhead, ahead of the Receiver. A battery compartment

can be made by installing another bulkhead in front of the Battery. Be sure the Battery cannot shift, and that it does not interfere with any pushrod movement. A loose battery can shift due to vibration and break off the battery leads.

BATTERY SWITCH

Select a location for mounting the switch in the side of the fuselage that is away from the engine exhaust. This will keep exhaust oil and fumes from fouling the switch contacts. Cut a 1/4" x 3/8" opening in the fuselage to clear the switch slide; then mount the switch and switch plate with the two 3-48 x 1/4" screws that are supplied.

NOTE: When you connect the battery switch to the Receiver and Battery, note the polarization of the plugs and also that the switch plugs are not wired alike.

RECEIVER-ANTENNA

Although the Receiver is very rugged, it should be well protected in case the plane should crash. Wrap the Receiver and Receiver Battery in thick foam rubber. Then install the Receiver behind a strong bulkhead. Be sure the Receiver and Battery do not interfere with any pushrod movement. **POSITION THE ANTENNA WIRE AWAY FROM METAL PUSHRODS, SERVOS, AND SERVO WIRES, OR THE OPERATING RANGE CAN BE SEVERELY REDUCED.**

Tie a single knot in the antenna wire at a point that will permit a looseness between the Receiver and the antenna hole in the fuselage. Then pass

the antenna wire through the hole and pull it toward the tail of the plane. Tie a rubber band to the end of the antenna wire; then fasten the rubber band to the tail fin. Use a rubber band that is just heavy enough to support the antenna without placing strain on the fin. **CAUTION: Do not shorten the length of the antenna wire.** Any change in antenna length would detune the Receiver and reduce its operating range. Keep the antenna wire away from the receiver case and metal parts.

NOTE: If your plane was sprayed with a metallic paint, be sure to keep the antenna away from the plane's surface or the operating range may be severely reduced.

SERVO UNITS

NOTE: If you desire to have less travel on a particular channel (Throttle, for example) the Range control can be readjusted to reduce it. See Travel and Centering (Page 78).

Each Servo unit should be placed for the most direct action on the pushrod it operates. **NOTE:** In some installations it may be desirable to reverse Servo travel. This can be done easily by reversing the connections between lugs 1 and 3 of the associated stick control in the transmitter. It may be necessary to readjust the Control Housing Lever to obtain proper centering as called out in the Travel and Centering adjustments. Depending on the fuselage width of your plane, two or more Servo units may be installed side-by-side between two hardwood blocks. Secure each Servo to the blocks with the four #4

x 1/2" screws that are supplied. Pre-drill holes for these screws with a 5/64" drill.

NOTE: For some positions of Servo units, it may be difficult to use screws for mounting. In this case, a double-coated pressure sensitive foam tape, such as Scotch-Mount* vinyl or polyurethane, may be used to secure the Servo to a clean flat surface. Position the Servo carefully, as the pressure sensitive tape sticks fast and can be removed only by cutting the tape. This type of installation is adequate for all types of radio control aircraft.

Each Servo makes available many mechanical output combinations. Each has a rotary output wheel, a rotary output arm, and two different linear output arms. Use the output hookup that fits your particular installation. Figure 4-2 shows only three of the many output combinations. It is not a good idea to combine both rotary and linear output combinations on the same Servo, as these will interfere with each other and may cause the Servo to bind and draw excessive current. This could shorten the battery life per charge. Binding could also cause the plane to crash.

Note that two servos may be operated simultaneously from one control stick by connecting them in parallel.

NOTE: When using the linear output arm with tabs, it will be necessary to drill a hole in the tab that is large enough to accept the linkage rod used. See Figure 4-2.

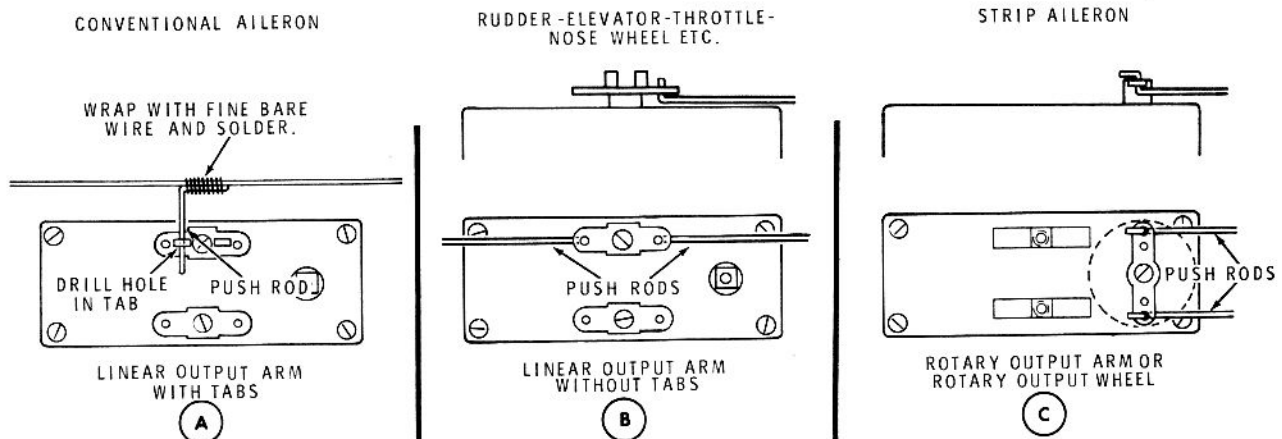


Figure 4-2

* Registered Trademark, 3-M Company.

Use the #2 x 3/16" screws to mount the rotary and linear arms or rotary wheel on the Servos.

The servo connectors from the Receiver have a different color wire that identifies the Servo function. The different colored wires and the Servo functions are as follows:

<u>CHANNEL</u>	<u>WIRE COLOR</u>	<u>MODE I</u>	<u>MODE II</u>	<u>MODE III</u>
1	Brown	THROTTLE (T)	ELEVATOR (E)	ELEVATOR (E)
2	Orange	AILERON (A)	AILERON (A)	RUDDER (R)
3	Yellow	RUDDER (R)	RUDDER (R)	AILERON (A)
4	Green	ELEVATOR (E)	THROTTLE (T)	THROTTLE (T)
5	Blue	AUX (X)	AUX (X)	AUX (X)

The letters in parentheses can be scratched into the Receiver and Servo connectors to insure proper hookup between the two units.

Before you close the plane's fuselage, check to see that all components are snugly mounted so they cannot shift positions when the plane is in flight. Also be sure that all pushrods are properly coupled between their Servo units and the

devices they operate. Pushrods must not touch any of the components or bind on any foam rubber wrapping. Finally, be sure the battery connections are made, and that the Servos are properly connected; then test the Receiver and Servo units as directed in the Operation section of the Manual.

When you have completely tested the Receiver and Servo installation, you may close the fuselage and prepare the plane for operation.