

OPERATION

PREFLIGHT CHECKS

BINDING

After the Receiver and Servos have been installed, operate all the controls to see that the Servos function properly and without binding. This will keep Servo overload and battery drain to a minimum.

VIBRATION

To be sure your mechanical connections and construction do not fail during flight, you should have someone hold your model so it will not fly, and then start the engine. Run a couple tanks of fuel through the engine. At the same time, operate all the controls to see that they perform faultlessly at all engine speeds.

RANGE CHECK

If the range shown in the following chart cannot be achieved, recheck the antenna to be sure it is placed as directed in the Receiver-Antenna section on Page 87. The Receiver antenna should fully extended as shown in Figure 4-1 (fold-out from

Page 86). The indoor range may be greatly increased or reduced from this figure due to reflections from metal objects.

BAND	ANTENNA POSITION	MINIMUM RANGE
27 MHz	Fully collapsed into the case.	50 feet.
53 MHz	Fully collapsed into the case.	50 feet.
72 MHz	*Base section extended.	100 feet.

*Extend the largest diameter section of the antenna until it hits its stop. Do not extend any of the remaining sections of the antenna.

CONTROL FAMILIARIZATION

A thorough understanding of the Transmitter's controls and operation will help you obtain the most satisfactory use of your complete radio control system.

Figure 5-1 shows the Transmitter Controls and their functions for Mode II operation. Each Control stick serves two functions. An Auxiliary control is provided for an additional function, such as brakes, flaps, retractable landing gear, or fuel mixture control.

Be sure to extend the antenna to its full length. This assures proper loading to the Transmitter and provides maximum power transmission.

Place the Power switch in the On position and observe the Meter. With a fully charged battery, the meter should register near the "5" at the right-hand end of the scale. If the meter indicates less than "3" when the power is turned on, recharge the battery before you operate the Transmitter. See Battery Charging on Page 36.

TRIM TABS

Set the Trim Tabs to their center position. THE TRIM TABS SHOULD ONLY BE USED AFTER THE MODEL IS AIRBORNE.

ELEVATOR

Move the Elevator control stick in either direction. The elevator on the model should follow the movement of this control stick. Release the stick and note whether the model's elevator is in a straight line (neutral trim) with its stabilizer. If not, adjust the pushrod connecting the Servo to the elevator until neutral trim is achieved.

AILERON

Move the Aileron control stick from side to side. One of the plane's ailerons should move upward as the other moves downward. With the Aileron stick in the neutral position, adjust the ailerons to neutral trim with the adjustable pushrods.

RUDDER

Move the Rudder control stick from side to side. The plane's rudder should follow the movement of the control stick. With the Rudder control stick in its neutral position, adjust the trim as before.

THROTTLE

The operation of the Throttle control may be checked by observing the air intake port of the engine while moving the Throttle control stick vertically in either direction. The carburetor should open and close as the stick is moved.

NOTE: When installing the throttle Servo, be sure the Servo has a slight amount of slack at each end of its travel with the Stick and Trim Tab in their extreme positions. If the Servo runs the throttle up against its stop, the Servo will stall and cause heavy battery drain, resulting in severely reduced battery life or shorted battery cells. Never allow a Servo to stall in any position, as a crash could result.

If the Throttle stick operates too freely or too tightly, you can adjust the throttle adjustable bearing screw on the back of the control assembly. See the inset drawing on Figure 5-1.

AUXILIARY

If you have a Servo unit connected to the Auxiliary cable of your Receiver, you can check the Auxiliary control in the same manner as the other controls. There is no trim tab on the Auxiliary control.

IDENTIFICATION KEY

All Transmitters on the 53 MHz band have an identification key (pushbutton switch) located on the cabinet top plate of the Transmitter. This switch should be used to identify your station at the beginning and end of each flight, and at ten minute intervals, to comply with FCC regulations. To use the key, place the transmitter power switch in the ON position and operate the pushbutton switch as a key.

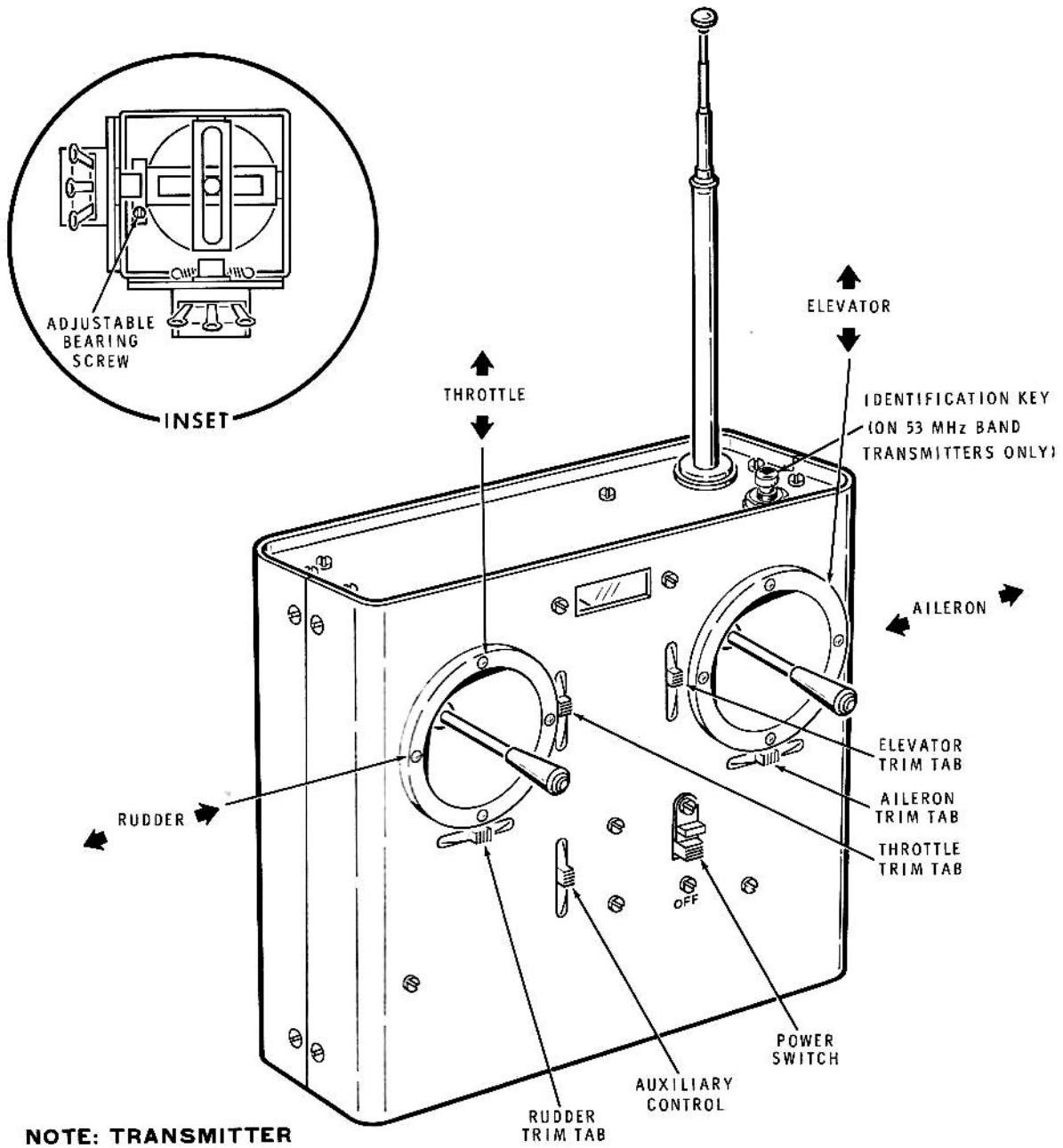


Figure 5-1

FLYING THE FIRST TIME

If you have never flown proportional equipment, it is suggested that you have an experienced flier assist you and "check you out" when making your first flights. If no one is available, it is suggested that you go through the operation of each control several times, to get the "feel", before you start the plane's engine or attempt to fly it. A few imaginary flights will also be helpful, along with extensive taxiing on the ground.

When you are ready to start the engine, use the Throttle control to govern the engine's speed. After the engine is warmed up and running properly, move the Throttle control slowly downward until the engine idles smoothly. Set the Throttle Trim Tab to provide proper engine idle with the Throttle stick fully downward. Hold the plane firmly on the ground while you advance the Throttle and speed up the engine. Then return the Throttle to idle, NOTE: The engine throttle stop can be adjusted to kill the engine when the Throttle Trim Tab is in its full down position. Do not stall the Servo when making these checks.

Practice taxiing the plane around a large flat area several times before you attempt to fly it. Be sure the plane taxis straight; this helps assure you of a successful takeoff. Get a real good "feel" for the controls and the plane's response. An extra hour or two of practice with the plane on the ground may save you many hours and dollars spent repairing the plane later.

Refer to the transmitter radiation pattern of Figure 5-2. Notice that a minimum of radiated signal will reach the aircraft if the transmitter

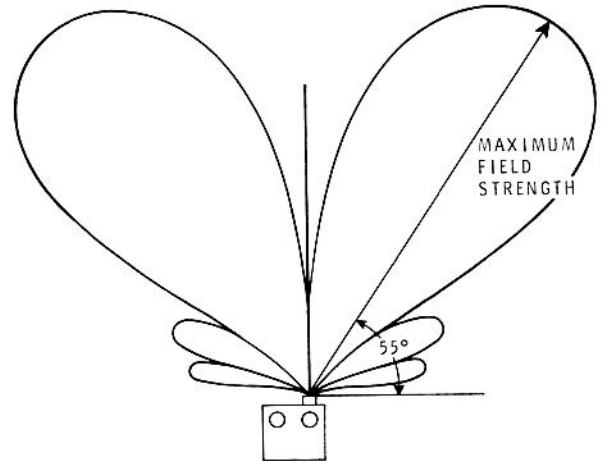


Figure 5-2

antenna is pointed directly at the aircraft. The maximum signal will be picked up by the aircraft if it is approximately 55 degrees up from an imaginary line across the top of the Transmitter. The signal appears in Figure 5-2 to radiate from the left and right side of the antenna, but it actually radiates all around (360 degrees) the antenna, with its maximum field strength as shown.

FLAGS

The operating frequency of any GDA-19-1 Transmitter corresponds to a particular color or colors. By making a flag of the color(s) that correspond(s) to your transmitter's operating frequency and tying the flag to the extended end of your antenna, other model operators in the area can quickly identify your transmitting frequency.

27 MHz Band		53 MHz Band		72 MHz Band	
Frequency MHz	Color	Frequency MHz	Color	Frequency MHz	Color
26,995	Brown	53,100	Black-brown	72,080	White-brown
27,045	Red	53,200	Black-red	72,240	White-red
27,095	Orange	53,300	Black-orange	72,400	White-orange
27,145	Yellow	53,400	Black-yellow	72,960	White-yellow
27,195	Green	53,500	Black-green	75,640	White-green

BATTERY RECHARGING

To assure maximum performance from your Transmitter, Receiver, and Servo system, be sure both the Transmitter and Receiver batteries are fully charged before you begin operating. The surest way of knowing that the batteries are charged is to recharge them before each use.

The Transmitter and Receiver batteries are charged simultaneously when they are connected as shown in the Battery Charging instructions on Page 36.

Connect the charging cable to a 120 volt AC line, the Transmitter, and the Receiver battery. Place the Transmitter Power switch in the OFF position. The indicator lamp will glow when the charging circuit is operating.

The batteries should be charged for at least 24 hours the first time and at least 14 hours per charge thereafter. It is not necessary to remove the batteries from the plane for recharging.

SELF-DISCHARGE

Self-discharging characteristics of nickel-cadmium cells during storage are shown in

Figure 5-3. The characteristics are shown as a decline in percent of rated capacity from a full charge. Note that after the first thirty days the capacity has decreased to approximately 70% when stored at 68 degrees F. However, these batteries are not harmed even if not used for long periods of time.

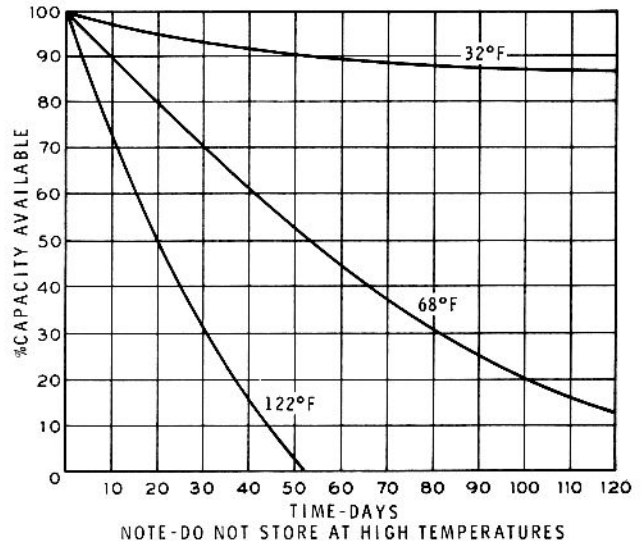


Figure 5-3