**TRoubleshooting**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motors will not turn on or operate</td>
<td>• Plane not charged</td>
<td>• Charge plane for a complete charge cycle</td>
</tr>
<tr>
<td></td>
<td>• Plane was not set to OFF during charging</td>
<td>• Set fuselage to the OFF position prior to charging</td>
</tr>
<tr>
<td></td>
<td>• Tx / Charger was not set to OFF during charging</td>
<td>• The Tx / Charger must be in the charge position</td>
</tr>
<tr>
<td></td>
<td>• Tx Battery power is drained</td>
<td>• This would be the Tx / OFF position. Replace the Tx / Charger batteries after 40-30 minute charges</td>
</tr>
<tr>
<td></td>
<td>• Tx has been left ON longer than 2 minutes</td>
<td>• Switch Tx / OFF then ON</td>
</tr>
<tr>
<td></td>
<td>• Tx / Charger need to be replaced</td>
<td>• Turn plane switch ON</td>
</tr>
<tr>
<td></td>
<td>• Need to decrease power</td>
<td>• Move the Motor Control Stick to middle position to reduce motor speed or release the Motor Control Stick</td>
</tr>
<tr>
<td>Plane is flying too high</td>
<td>• Plane is not fully charged</td>
<td>• Charge plane for a complete charge cycle</td>
</tr>
<tr>
<td></td>
<td>• The six AA batteries in the Tx / Charger need to be replaced</td>
<td>• Install new batteries</td>
</tr>
<tr>
<td></td>
<td>• Need to increase power</td>
<td>• Press the Motor Control Stick upward all the way</td>
</tr>
<tr>
<td>Plane is flying too low</td>
<td>• Plane does not charge the Tx / Charger antenna is not extended all the way</td>
<td>• Set the Tx / Charger to the ON position</td>
</tr>
<tr>
<td></td>
<td>• Flying in too strong of wind</td>
<td>• Fully extend the antenna prior to flying</td>
</tr>
<tr>
<td></td>
<td>• You have exceeded the 2 minute Flight Optimizer period</td>
<td>• Do not fly in adverse wind conditions or wind in excess of 5 mph (8 kph)</td>
</tr>
<tr>
<td>Planes will not turn</td>
<td>• Tx / Charger is not turned ON</td>
<td>• Turn Tx / OFF when you are ready</td>
</tr>
</tbody>
</table>

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**EASY REPAIRS YOU CAN DO YOURSELF**

Plane parts are made of foam for impact strength and durability. Even so, some parts may break during a crash. Foam parts may easily be repaired using household tape and glue. Clear packing tape works well for most repairs, however, larger breaks may require glue and tape for best results. To make your own repairs, use 5 minute epoxy or household white glue sold separately and follow the steps below.

While we don't recommend you crash your plane, sometimes it happens. Simple home repairs will get you back in the air and flying in no time.

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**WINGS:**

Carefully hold in place until epoxy sets.

Wipe excess epoxy off of the surfaces.

**FUSELAGE:**

Like the wing, apply epoxy to the broken area and hold the two pieces together until epoxy sets and dries.

**TAIL:**

Use clear tape to repair dents and tears.

**KEEP FUSELAGE STRAIGHT**

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**THE TRANSMITTER (Tx) WITH BUILT-IN CHARGER**

(Requires 6 "AA" Alkaline Batteries - Sold Separately)

Remove screw and back cover then insert 6 new AA alkaline batteries in the correct polarity into Tx. Replace back cover and screw. Because the Tx is used for both charging and flying the plane, it is recommended that you replace the 6 "AA" Tx batteries every fourth complete charge.

Motor Control Stick Push and hold "UP" to run motor at full power. Push half way up to run motor at "cruse" speed. Release to stop motor.

Switch "ON" for flying, "OFF" for charging.

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**Spare Parts**

Order parts on-line at www.estesrocks.com, click on 'ESTES Store' then 'RC Plane Parts', OR Call Estes Customer Service at 1-800-525-7561.

Monday - Friday, 8:00 am - 4:00 pm Mountain Time.

Item # Description
061786 Wing Assembly Spare Part Set
061779 Fuselage w/Rx Spare Part Set
061920 Propellers (2 per bag)
061794 Transmitter (Tx)/Charger Antenna & Antenna Ribbon

*Label sheets included with each spare part set.

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**Important Tips:**

This radio has been equipped with an auto shut-off circuit. Tx will automatically turn off Motor Control after 2 minutes of continuous flying. To reset the Motor Control, switch Tx "OFF" then back "ON." See "Flight Optimizer" page for more details.

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**Designated by Estes for use in these Estes models only:**

Skyrangers (4160)

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**PN 061795 (7-06)**

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**WARNING:**

Do not use old, new, or other battery types. Use only ALKALINE batteries in the Sky Cruisers transmitter charger.
THE SPY SQUADRON™ CONTROLLER

(Removes 8 - AA Alkaline Batteries - Sold Separately)

CAUTION: Do not mix old, new or other battery types. Use only ALKALINE batteries. Remove batteries from unit when storing for long periods.

Slide open and remove the back cover. Insert 8 AA Alkaline batteries in the correct polarity and replace cover.

Video/Picture Taking Button
See Camera Operation (page 6) before flying.

Attach Ribbon to Antenna and screw Antenna into controller.

Speed Control Stick
See Know Your Controller (page 4) before flying.

ON/OFF SWITCH

PMU STICK

PLUG FITS ONE WAY—DO NOT FORCE.

Plug fits one way—do not force.

NOTE: If flight battery is NOT charged, Flight Battery will turn solid.

1. Fully charge Flight Battery by running the motor until stops.
2. Remove Flight Battery from plane. NOTE: If Flight Battery is very warm, let it cool before charging.
3. Plug Flight Battery into Charger. Charger LED will turn solid.
4. Charge the Flight Battery until the Charger LED blinks (approximately 20 minutes). DO NOT charge more than 20 minutes.
NOTE: Flight battery gets hot during charging, remove from charger immediately and let cool.

IMPORTANT: Do not turn camera switch off - doing so will erase the pictures stored in the camera.

1. Connect USB cable to the computer, then to the camera pod as shown.
2. Follow the steps below to download and save your pictures.

A. Open My DSC 2’ folder on the desktop.
B. Click on My DSC 2’ to open.
C. Click the ‘Load Pictures’ icon.
D. Right click to enlarge picture to view or Left Click to Highlight (Menu Box), then click the ‘Save’ icon below.

Camera may be turned off after pictures have been downloaded and saved on your computer.

IMPORTANT USER INFORMATION
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of more of the following measures:
- Realignment or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Consult Estes-Cox Corp. for help.

DOWNLOAD PICTURES FROM CAMERA

USING THE CHARGER

Unlock end of charger and open. Insert 6 D size alkaline batteries into charger in the correct polarity. Replace end and lock.

LED

CHARGING GUIDELINES:
- Always remove Flight Battery from airplane before charging.
- Flight Battery is NOT charged, Flight Battery will turn solid.
- Never charge Flight Battery 8 Charge or Right Battery is wet.
- ALWAYS plug Flight Battery from Charger when not in use.
- Never leave Flight Battery unattended when charging.
- DO NOT charge Flight Battery if it shows leakage or corrosion.

INSTALLING THE CAMERA BATTERIES

Remove Camera Battery Compartment cover.

INSERT 3 button cell batteries (included) in correct polarity as shown, and then replace cover.

INSTALLING THE FLIGHT BATTERY

Remove Battery Hatch. Connect Flight Battery into compartment followed by Flight Battery Hatch.

Carefully guide the battery wire into compartment followed by Flight Battery Hatch. Do not force the wire all the way in the battery compartment. Replace Battery Hatch.
LOAD THE SOFTWARE (My DSC 2)

1. Insert CD in CD Drive. Important: Close other programs before installation. You will need to restart your computer after installation. If program does not begin automatically, you will need to click START and then MY COMPUTER and double click the CD drive.

**CAMERA OPERATION**

**PRE-FLIGHT CAMERA SETUP**
1. The camera turns ON by turning the camera mode switch to STILL or VIDEO. It switches to VIDEO, camera can take up to 14 seconds of video. If switched to STILL, camera can take up to 15 pictures.
2. The LED indicates the camera is ON. It works as follows:
   - If Camera is turned ON before the Plane and Controller, LED will flash twice. After Controller and Plane are turned ON, LED will turn solid indicating Camera is ready.
   - If Camera is turned ON after the Plane and Controller, LED will flash once, and then turn solid indicating Camera is ready.
   - The LED will go OFF when Camera is turned OFF.

**TAking STILL PHOTOS**
- Switch the camera mode switch to STILL, the camera can take a total of 15 pictures.
- Press and release the picture button. Wait 5 seconds between shots. For best results during flight, release the Speed Control Stick (center-cruise speed) before taking pictures.

**TAking VIDEO MOVIES**
- Switch the camera mode switch to VIDEO, the camera can record a total of 14 seconds of video.
- Press and hold the video button to take the entire length of video in one shot, or press and release the video button to take random lengths of video. Wait 5 seconds between shots. For best results during flight, release the Speed Control Stick (center-cruise speed) before video.

**IMPORtANT NOTES:**
1. Do not switch camera OFF or from STILL or VIDEO or vice versa before downloading to a PC. Doing so will erase all pictures/video from camera.
2. Camera will only take pictures or videos when plane's motor is running.
3. Allow 5 seconds between each picture/video for camera to reset.
4. Replace the camera batteries when camera starts failing to take consistent videos or pictures.
5. After pictures/video are downloaded switch camera OFF when not in use.

**AIRPLANE ASSEMBLY**

1. Insert Nose Gear into Nose Gear Mount in fuselage. Press Nose Gear Plug into slot to secure Nose Gear into place. Insert Nose Gear Screw to hold everything in place using screws as supplied.

2. Insert Main Landing Gear into mount as shown. Align the wing over the fuselage. Connect the WHITE connectors together and then connect the BLACK connectors together. PLUGS FITS ONE WAY - DO NOT FORCE.

3. Center the wing over the fuselage. Connect the WHITE and BLACK connectors into the fuselage while engaging for the leading edge pin into the hole in the fuselage. Secure the main wing of the wing with the screws provided.

4. Align the wing over the fuselage. Turn the WHITE and BLACK connectors into the fuselage while engaging for the leading edge pin into the hole in the fuselage. Secure the main wing of the wing with the screws provided.

5. Center the wing over the fuselage. Use the arm July 4th to secure the wing to the fuselage. Center the wing to properly fit the wing onto the mount (circle A). Repeat for the opposite side.

6. Propeller Assembly
   - Apply to each axe.
FLYING YOUR PLANE - READ AND STUDY THESE INSTRUCTIONS BEFORE YOU FLY!

PRE-FLIGHT CHECKLIST
1. Have a fully charged battery installed in plane.
2. Fully extend controller antenna.
3. Check wind speed and direction using wind indicator.
4. Turn controller switch ON.
5. Turn plane switch ON.
6. Check controls by tapping each control button.

USING THE WIND INDICATOR

ON OFF

CHANNEL 1
CHANNEL 2

HIGHWAY PATROL
AIR U N I T

Launching
Hold plane level with the ground. Hold the Speed Control Stick at full speed. Throw straight out like a shot into the wind.

Throw Straight Out

1. LAUNCHING

2. TAKE OFF
Apply full power. Allow plane to climb 3-5 seconds. Tap Turn Control Stick Left or Right if needed to level wings.

3. BEGIN RIGHT TURN
Tap Turn Control Stick Right to bank wing.

4. END RIGHT TURN
Tap Turn Control Stick Left to level wing.

5. PREPARE TO LAND
Release the Speed Control Stick to reduce speed. Tap Left or Right if needed to level wings.

6. LANDING
Press Speed Control Stick down to turn power off. Press the Speed Control Stick up when needed to keep the nose up during landing until touch down.

CHOOSE A GOOD FLYING SITE:
Find a large area with a flat grassy surface to fly over like a soccer field. Avoid flying near people, houses, power lines, trees or buildings.

ADVANCED FLYING TECHNIQUE
Takeoff From The Ground: When taking off from the ground it is important to take off from a smooth surface, such as the infield of a baseball field or a smooth and straight sidewalk.

CONTROLLING THE PLANE FLYING TOWARDS YOU!
When the plane is flying towards you while watching it from the ground, to turn the plane to your LEFT you need to tap RIGHT. To Turn RIGHT tap LEFT. OR IMAGINE YOU ARE CONTROLLING FROM THE COCKPIT!

STEERING YOUR PLANE

• DO NOT continuously hold the Turn Control Stick. This over-steering may cause your Highway Patrol™ plane to get into a tight spiral turn, resulting in a crash.
• The longer you hold the Turn Control Stick the tighter the turn. Longer taps for tight turns, shorter taps for wide turns.

VIDEOPICTURE BUTTON
Push and release to take still pictures or video while flying. Switch on plane must be set to either STILL (to take pictures) or VIDEO (to take movies).

NOTE: 1) Camera will only take videopictures when motor is running.

2) Allow 5 seconds between each picture or video for camera to reset. See CAMERA OPERATION (page 6) before flying.

SPEED CONTROL STICK
Push up to start motor at cruise speed. Push up a second time and hold for full speed, release for cruise speed. Push down for power off.

TURN CONTROL STICK
Tap LEFT to bank wings and turn plane left. Tap RIGHT to bank wings and turn plane right. See STEERING YOUR PLANE! before flying.

KNOW YOUR CONTROLLER

TAP TAP TAP TAP TAP TAP TAP
TIGHT TURN WIDE TURN

• Only tap the Turn Control Stick enough to bank the wing for a turn, then stop tapping. Once the wing is banked the plane will continue to turn. you DO NOT have to hold the Turn Control Stick.

• Tap the Turn Control Stick in the opposite direction of the turn to level wings and fly straight.