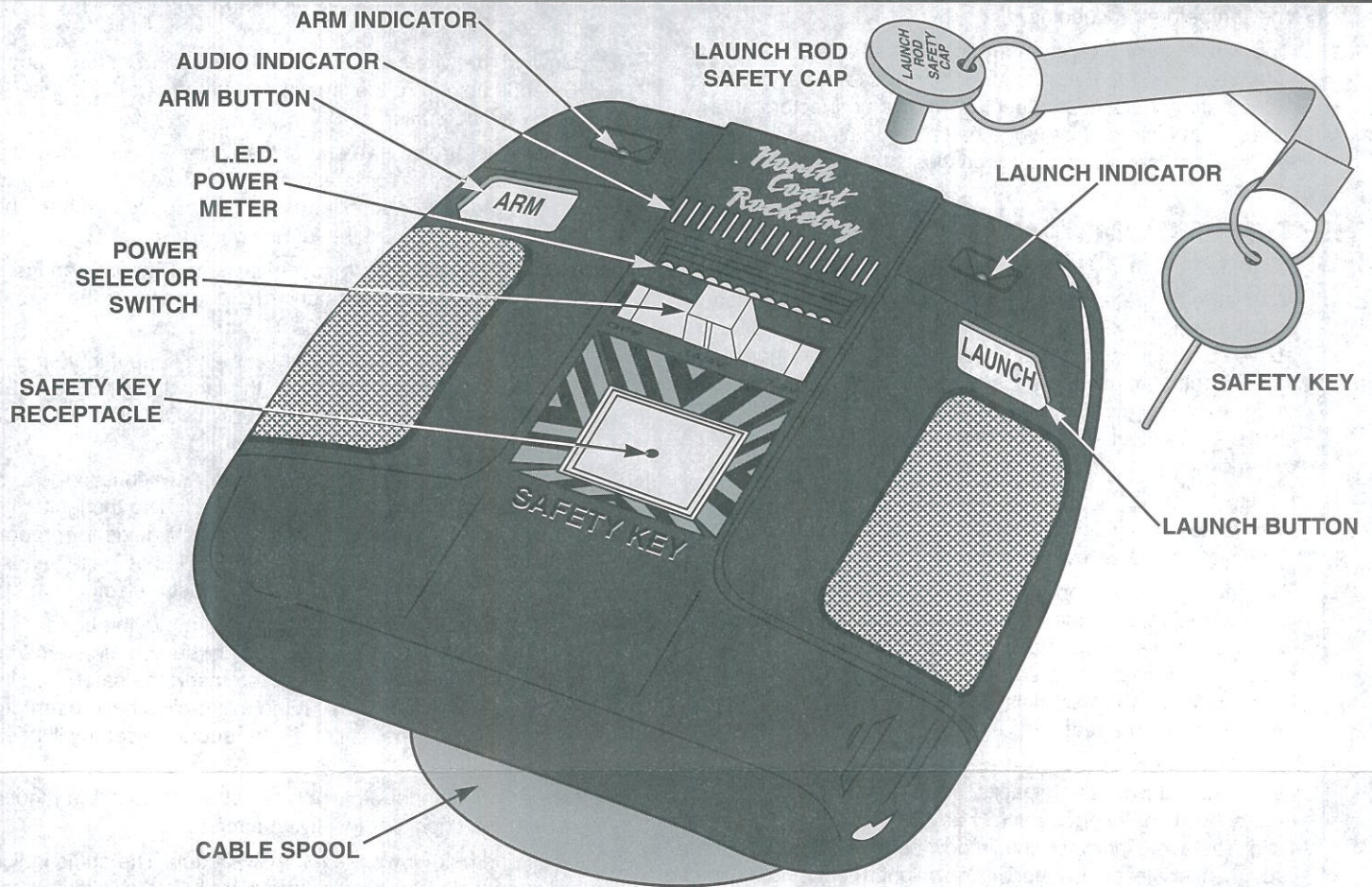


# NORTH COAST ROCKETRY™ COMMAND CONTROL™ LAUNCH CONTROLLER USAGE INSTRUCTIONS



The North Coast Rocketry™ Command Control™ has been specifically designed for the demands of high electrical current model rocket engine igniter systems. By using a combination of a quality low resistance electrical cable with soldered connections and commonly available high capacity Nickel Cadmium batteries, the Command Control™ can deliver in excess of 100 watts of instantaneous electrical ignition power. This insures that the Command Control™ can be used with nearly every presently available model rocket engine igniter system in single as well as cluster ignition configurations.

Use of some electrical match and flash bulb igniters should be avoided due to activating currents too low for safe use. Test any of these types of igniters for compatibility with the Command Control™ before attempting actual launch.

The Command Control™ was designed for use with either one or two standard six-cell high capacity hobby NiCad battery packs using typical Tamiya connectors. Use of a single battery pack will reliably activate most available igniter types almost instantaneously when used in single engine applications. The second battery is not necessary when using as many as four igniters in a cluster, but its use adds an extra level of ignition insurance. Your particular igniter configuration and power requirements should be tested with one or both battery packs installed before an actual launch is attempted for dependability.

The rocket modeler may choose to have both battery packs installed at all times and use the slide switch to select which combination to use. Care should be taken, however, that continued use of only one pack does not overly discharge that pack as compared to the other. Note that the slide switch must be in the far left (off) position when the batteries are being charged.

An added Command Control™ feature is that it can be connected

to an alternate exterior battery source. However, the rocket modeler will be required to design and construct a cable and connector system for these applications.

**NOTE:** North Coast Rocketry™ advises caution when constructing any external connector to be used with the Command Control™. Serious damage to the controller or NiCad batteries can occur with improperly designed connections. If an external battery is used, the internal NiCad batteries must be disconnected. Also, never mix or connect two different types of batteries such as one dry-cell lantern and an auto battery to the Command Control™. This practice should be avoided due to different battery construction methods and the internal battery resistances. Also, do not mix old and new batteries.

The Command Control™ uses an L.E.D. battery level meter for continuous monitoring of the battery voltage level. The range of this power meter is 6.5 volts beginning with the far left L.E.D. and 19 volts with all the L.E.D.s lit. Most L.E.D.s will not light if only one 6-cell NiCad battery is being used.

Be sure to follow all the instructions which came with your NiCad battery packs and your companion battery charger for the proper method to fully charge the batteries. The Command Control™ has been wired with two standard 5 mm charge jacks, one for each battery. These allow overnight charging with the batteries left in the controller if you have a charger that is equipped with this type of charge plug. You will be required to remove the batteries for charging if your charger is not so equipped.

**NOTE:** To avoid damage to the Command Control™ when charging, be sure the battery selector switch on the front of the controller is in the far left (off) position and that the safety key has been removed when charging the batteries.