

The Art of Electronic Recovery

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FM RADIO TRANSMITTING LOCATORS FOR MODEL ROCKETS:

By Martin Bowitz

A presentation on low-cost locating transmitters for model rockets operating on or near the FM broadcast band. An overview of circuits is presented as well as current sources of information on the internet. A few commercial kits are discussed. The presentation will conclude with personal experiences with a few transmitters.

Presentation outline:

1. Introduction
 - a. Purpose
 - b. Transmitter Requirements
 - c. Availability
2. History
 - a. Early CB transmitters
 - b. Estes Transroc
 - c. FM transmitters
3. Overview of circuits
 - a. Block diagram
 - b. Operating frequency spectrum
 - c. Schematic of a transmitter
 - d. Antenna
4. Batteries
 - a. Compare size & weight
 - b. Voltages/current
5. Kits
 - a. Compare three different kits
 - b. Cost & performance
6. Personal evaluation
 - a. Flight test experiences
7. Conclusions
 - a. Comparison of advertised claims with actual performance

Discussion on transmitter limitations

I. Radio Tracking Will Change Your Altitude and Attitude

By Joe Mullin – Rocket Hunter

- Theory
- Radio Wave Propagation
 - o Range
 - o Frequency
- Equipment
 - o Transmitter
 - o Receiver
 - o Batteries
 - o Antenna
 - o Retrieval Kit
- Mounting Options
 - o Recovery Lines
 - o Electronics Bay
 - o Multiple Transmitter Strategy
- Tracking Techniques
 - o G.P.S.
 - o Compass
 - o Long Range
 - o Medium Range
 - o Close Range
 - o Reflections
 - o Polarization
- Recovery – The Long Walk Back
 - o Safety
 - o Communication
 - o Coordination
- Case Histories
 - o Black Rock
 - o CSXT
 - o L Altitude Record
 - o MTA
- Attitude Adjustment
 - o Larger Parachutes
 - o Dual Deployment?
 - o Bigger Motors
 - o More Fun
 - o Less Worry