

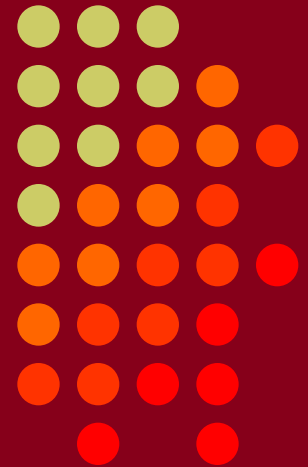
# CTU Presents

## Preparations for Multi-op Contests and Field Day



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# Many Kinds of Multi-op Opportunities



- Field Day - by far the most popular multi-op activity
- HF CW, SSB and RTTY contests from the U.S.
- HF CW, SSB and RTTY contest Dxpeditions
- VHF/UHF/microwave contest fixed stations
- VHF/UHF/microwave contest portables (often mountaintop)
- Small multi-single and multi-2 contest stations
- Medium multi-single, multi-2 and multi-multi contest stations
- Large multi-2 and multi-multi contest stations
- Casual
- Competitive, top ten finisher
- Highly competitive, top three finisher

# Planning and Hosting a Multi-op



- Planning
  - start well in advance
  - what contest and category to enter? (answer this early in planning)
  - should we attempt a serious competitive effort?
  - full time operators, its difficult to integrate part-timers into competitive efforts
  - operator band assignments and schedules
  - try to appropriately match your operator and station resources
- Team building, leadership, operator training and station familiarization
- Creature comforts and safety
  - seating, sleeping quarters, food, restrooms, shower, fire extinguishers
- Protect your family's privacy and all of their usual weekend activities
- Pre-contest preparations
  - checklist of equipment, software and antennas to be verified before the contest

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# Team Roles and Skills



- Leadership and strategic planning
- Broad technical skills and expertise
  - technical planning
  - every detail of radios, amplifiers, computers, software and networks
  - antenna and tower design, construction, installation and maintenance
  - RFI mitigation techniques
  - skills and knowledge to fix anything quickly during 48 hours of operation
- Highly skilled operators
  - high rate runners with very low error rates
    - multiplier and QSO passing skills
  - search and pounce operators with CW Skimmer and DX Cluster skills
- Contest tacticians
  - skills and experience to make tactical operating decisions
  - detailed expertise and comprehensive knowledge of contest rules
  - propagation expertise

# Station Equipment



- Well matched to operator capabilities and competitive goals
- Networked computers
  - one computer per operator with computerized CW and voice messages
  - connected to external DX Cluster and CW Skimmer networks
- Protect every receiver from all co-located transmitters
  - a band pass filter to protect every receiver
- Minimize or eliminate all sources of locally generated RFI
  - excessive signal levels from other bands
  - RFI from “RF flooding” of switching power supplies and other electronics
- Two stations per band (run and S&P) for highly competitive multi-multi
  - a lockout is mandatory to make two simultaneous signals per band impossible
  - S&P station capable of listening through the run station with little QRM
    - requires widely spaced receiving antennas

# Towers and Antennas



- One tower , one tribander, 80 and 40 meter dipoles
  - entry level for multi-single
- One tower, at least two Yagis, 80 and 40 meter dipoles, 160 inverted-L
  - top ten multi-single competitor
  - entry level for multi-2
- 2 towers, 40-10M Yagis, 80M dipole, 160 inverted-L, receiving antenna
  - top three multi-single competitor
  - top ten multi-2 competitor
  - entry level for multi-multi
- 3 towers, 40-10M Yagis, 80M gain antenna, 160 Inverted-L, receiving ant
  - top three multi-two competitor
  - top ten multi-multi competitor
- 4+ towers, 40-10M Yagis, 80M 4-square, 160 verticals, 2+ receiving ants
  - top three multi-multi competitor

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# Field Day!



- By far the most popular multi-op activity
  - local clubs always need your help and expertise
- Most Field Day teams are casual or semi-serious
  - but not all...
- Excellent opportunity to develop multi-op skills (valuable life skills too!)
  - leadership
  - planning
  - team work
  - operating
- Lots of fun and camaraderie

# Your Role as an Operator



- Many skills to be learned, practiced and perfected
  - high rate running
  - improving your logging error rate
  - passing multipliers and QSOs between bands
  - efficient, effective use of CW skimmer spots and packet spots
  - working effectively with operators on the same band and other bands
- Teamwork
  - competitive teams have high expectations of every team member
  - accommodating unavoidable non-contest commitments during the contest
  - team operating schedules, sleep schedules, meals
  - inevitably the best laid plans will occasionally go wrong
    - don't lose your cool!
    - contribute to the solution, never be part of the problem
- Enjoy the fun and camaraderie!



# How do I get invited as an operator ?



- Develop some of the skills needed by a multi-op team
  - operating is just one of the many needed skills
- Get to know the station owners and team members
- Volunteer to help
  - even to just contribute unskilled labor when needed
- Don't wait to be invited... volunteer

# What to do after you're invited ?



- Understand the goals of the team
- Understand the role you're expected to fill
- Don't underestimate (or misrepresent!) your skill level
  - practice and perfect your operator skills
- Always ask what you can bring or contribute
  - radios, headphones, keyers, food, soft drinks etc
- Don't expect to be a primary operator the first time out
- Remember, you're a guest in the station owner's home
  - treat the host's family and property with respect
  - thank the XYL and the host after the contest!

# And Above All



Contribute to the enjoyment of the team members

- contribute to the success of the team
- learn and improve from your experiences
- and have fun!