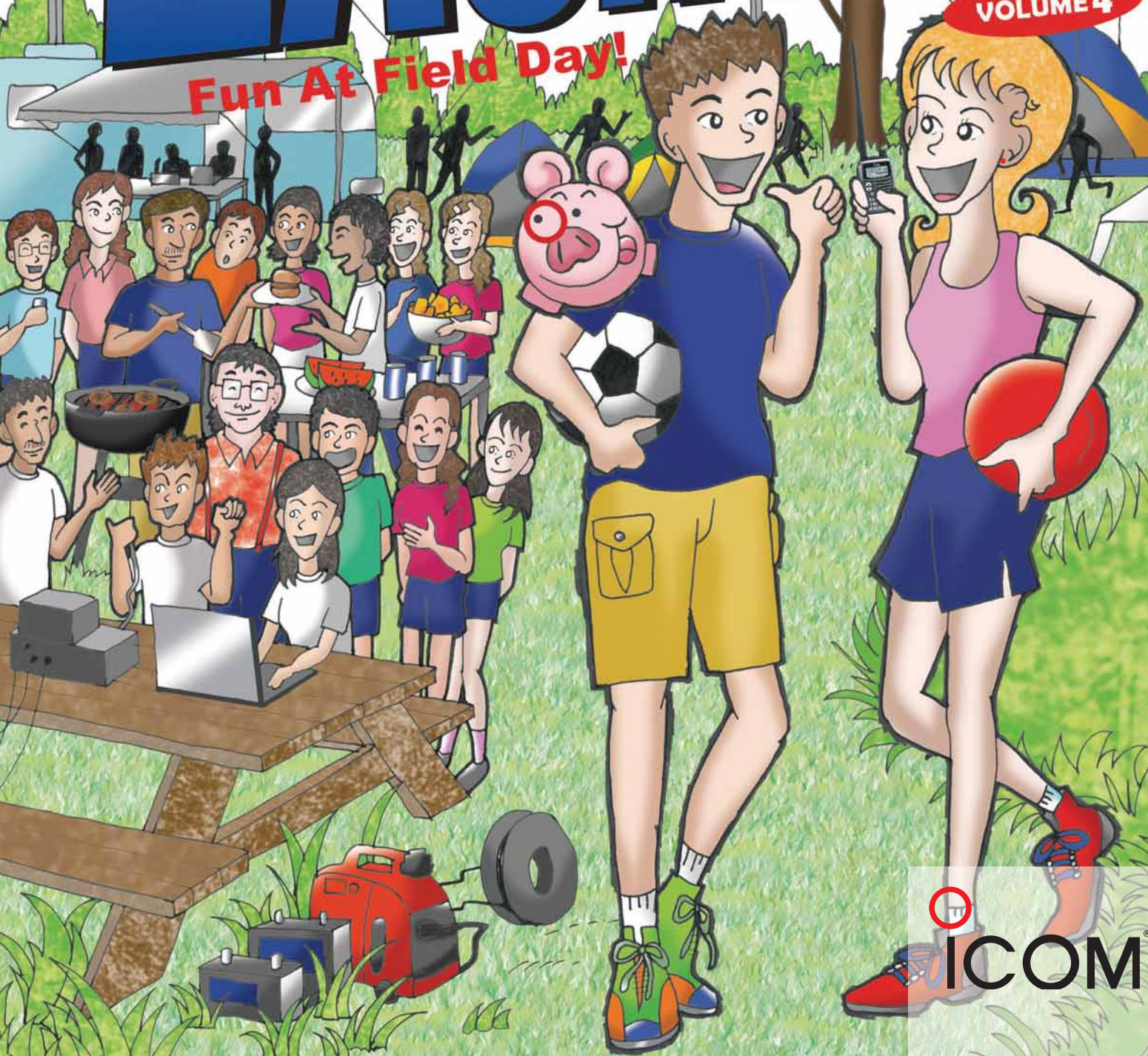


# The ADVENTURES OF ZACK & MAX

VOLUME 4

Fun At Field Day!



 ICOM<sup>®</sup>



## About the Story

In this fourth volume of the Adventures of Zack and Max comic book series, Icom America once again turned to the students from the Lake Washington Ham Club at Ben Franklin Elementary in Kirkland, Washington. The kids and their club leader, Dave Condon, KI7YP, conceptualized and wrote most of the story, which was loosely based on the club's own experiences during its 2005 Field Day exercise. Every year on the fourth full weekend of June, amateur radio operators throughout the Western Hemisphere (IARU Region 2) attempt to make as many radio contacts as possible using all forms of ham radio equipment.

We would like to thank once again our illustrator, Kayoko Nakajima, who brings our stories to life every year with her wonderful drawings! We hope you'll enjoy this book and that it inspires you to participate in your own annual Field Day exercise. To find an event near you, contact your local ham radio club. You'll find a list of clubs near you on the American Radio Relay League (ARRL) Website: [www.arrl.org](http://www.arrl.org).

### Written By

The students of the Lake Washington Ham Club

### Special Writer Recognition

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### Acknowledgements

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Parents of the students of the Lake Washington Ham Club, KC7OIO  
Dave Condon, KI7YP, teacher, Lake Washington School District

### Photos of Field Day 2005–Lake Washington Ham Club

*Pictured below are (from left to right): sign in; Max and friends; the GOTA Station; group photo; instructions; writing the story during time off; and the pot luck dinner.*





Early one Saturday morning, a week before Field Day, Mady and Zack are on their way to the Field Day Planning Meeting with Mady's dad...



Do you remember the first time I met you was at a Field Day?!

Yes, I do. I think you thought that Field Day was like a sport's day...



Yup, but I was wrong. Field Day is a practice emergency drill; our radio contacts might be only a town away, or be thousands of miles away.

That's right! Ham radio can help out not only if the power goes down, or if there's a tornado, but also with other disasters too, like tsunamis, earthquakes and with hurricanes, like Katrina.





Did you hear anything about how ham radio helped out with Katrina?



I sure did! I downloaded a whole bunch of articles that I packed along with my gear in my backpack! I was hoping I could share them at the meeting! Hey, and I was also hoping that we could be partners during Field Day...



Oh...yeah, about your backpack...

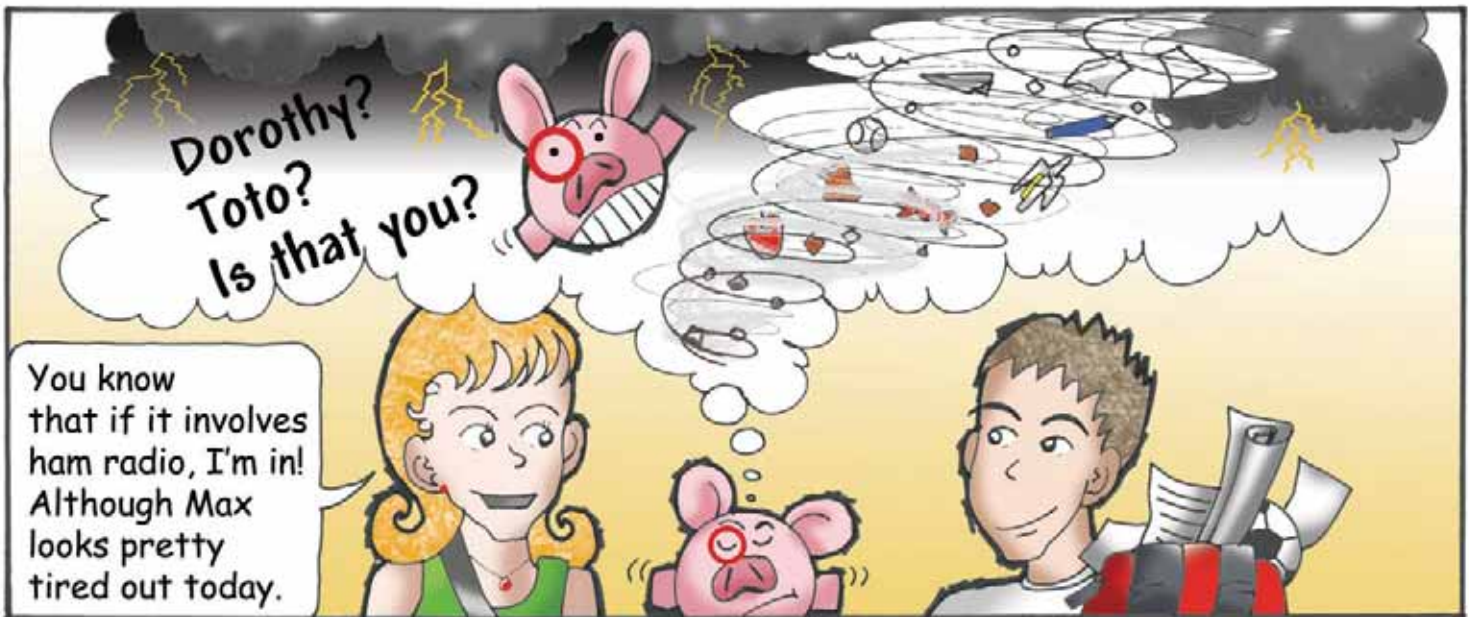


What?! You'll be my partner at Field Day, right?



Dorothy?  
Toto?  
Is that you?

You know that if it involves ham radio, I'm in! Although Max looks pretty tired out today.







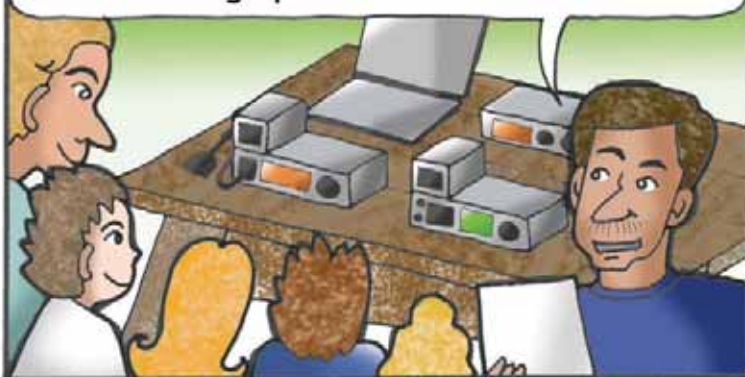
Hey everyone, my name is Charlie Gorman, W7CEG. Thanks for coming to our annual Field Day meeting! Now as most of you know, the object of Field Day is to test our emergency preparedness and make as many contacts as possible during a 24-hour period.

Here's a list of things you'll need to bring next weekend.

- List Of What To Bring:**
1. Dress for the weather, bring extra sweatshirts, rain gear if needed, and extra dry clothes
  2. A tent!
  3. Sleeping bag, blankets and pillows
  4. Food and snacks, also bring a dish to share for our evening pot luck
  5. Something to cook with, and utensils
  6. Water
  7. Charged batteries for your radio
  8. Your radio and a Repeater Directory
  9. A compass
  10. Paper and pen
  11. Antenna, power supply, CW keyer, and a mic
  12. A laptop, if you have one, and "logging" software
  13. Games and sports equipment
  14. Camera
  15. Any gear you think we will need, check with Charlie

Any questions?... Okay, I'll continue. We are going to have 4 different types of stations; an HF, VHF, QRP, and Satellite. Kids! How about setting up a GOTA station?

Yeah! Our own GOTA station!





Oh, wait a minute; it looks like some of the kids are confused.



**GOTA** ... where?



It's all right, Max... Sorry, Mr. Gorman, can you help explain what's a GOTA station?



Oh! GOTA stands for **Get On The Air**. This is a special station for new hams to help them get started.

For the GOTA station we will use the call sign of KC7OIO, and for the other stations we will use the call sign KI7YP.\*



It's really fun!  
**LET'S DO IT!**

**Yeah!!**



Excuse me again, but can we go over what all the different radios do?



Sure! At the HF station we'll use the Icom 718. This is a world-wide radio, from 160 meters up to 10 meters. HF means High Frequency, and we can talk all around the world.



Yeah, but what about the '756PROIII? It's a HF radio too, isn't it?





Yes, and it will also be at the HF station. The '756PROIII has DIGITAL filters in it. The signal it sends to other radios is very clear, and it can receive radio stations that many other radios can't.



At the QRP station, we'll use the IC-703. QRP operation means transmitting at reduced power levels. A QRP radio puts out very little power. It usually runs on batteries, or even solar power! It is very portable, and is often taken on camping trips or hikes into the mountains by hams.



IC-703



I wonder what's next...



And this radio is both UHF, or Ultra High Frequency and VHF, Very High Frequency. We will use the IC-910H to make contacts with other radio stations through space satellites. In addition, we will try to talk with the astronauts on the International Space Station.\*



IC-910H



Well, now that we've got that settled, we should set up some committees. We'll need someone to head the antenna committee.



OK, Mady's dad...

We need someone in charge of a public information committee...



OK, Mary...

We need someone in charge of a committee for band control...



OK, Doug...

And lastly, we need someone in charge of another committee for food & games.

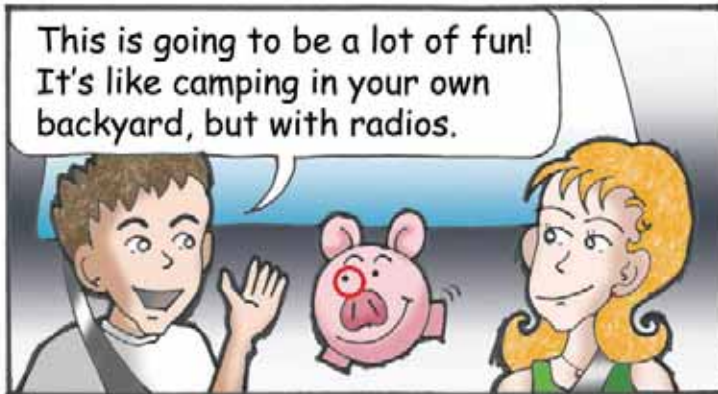


Great! Lots of volunteers!



\*For more information on ARISS (Amateur Radio on the International Space Station): <http://spaceflight.nasa.gov/station/reference/radio/index.html>







Back at Mady's house

Let's see, we should bring radios, batteries, a Repeater Directory, maps, compass, watch...

...and also rope, duct tape, a ladder...

Really, Zack, a ladder?!

...sleeping bags, blankets, rain gear, flashlights, extra dry clothes, toothbrush & toothpaste, soap, towels, games, snacks, water...

Mady, a toothbrush, really?!

FIELD DAY MORNING

Check!  
Check!  
Check!

Ready to GO!

Where is the list?

Hi Dad!

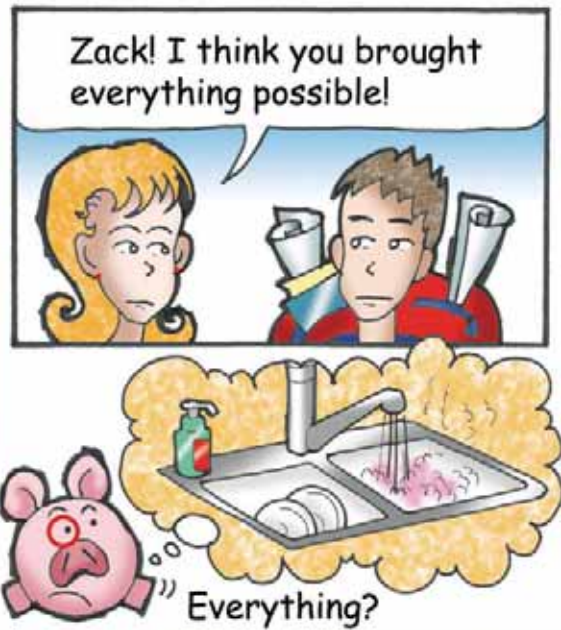
Where are you?

Zack? Max?? Are you sure you need all this?

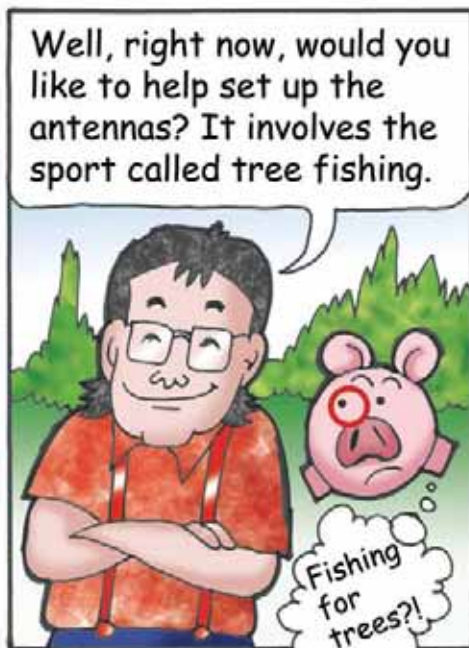
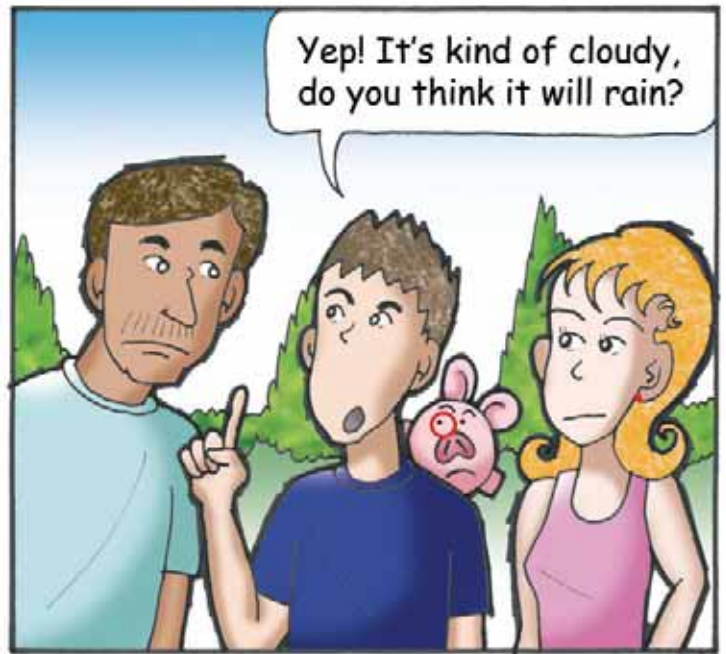
**YEP!!**

Oink!  
Oink!

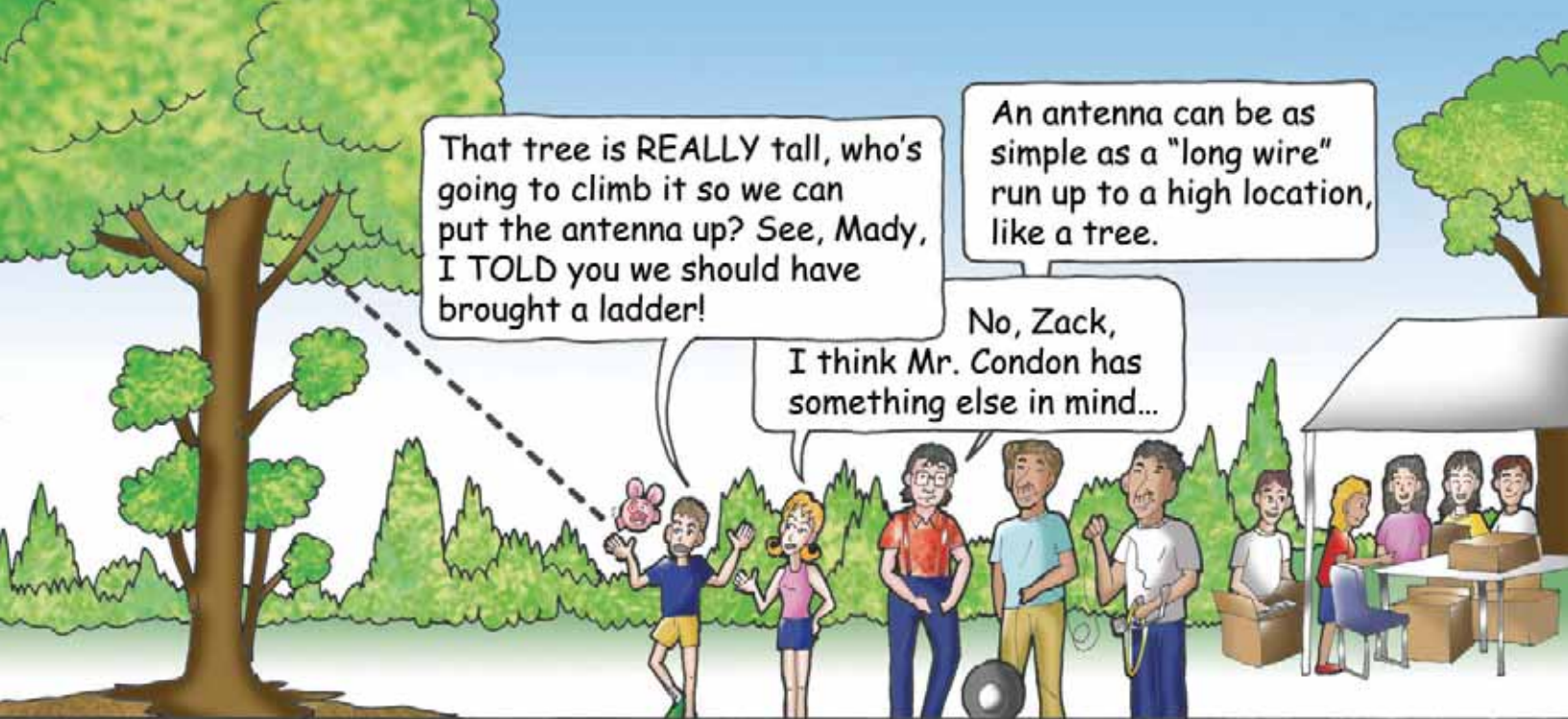












That tree is REALLY tall, who's going to climb it so we can put the antenna up? See, Mady, I TOLD you we should have brought a ladder!

An antenna can be as simple as a "long wire" run up to a high location, like a tree.

No, Zack, I think Mr. Condon has something else in mind...

Hey, Zack. Watch this! I've got a sling shot with a fishing reel attached, to get a line up into the tree.

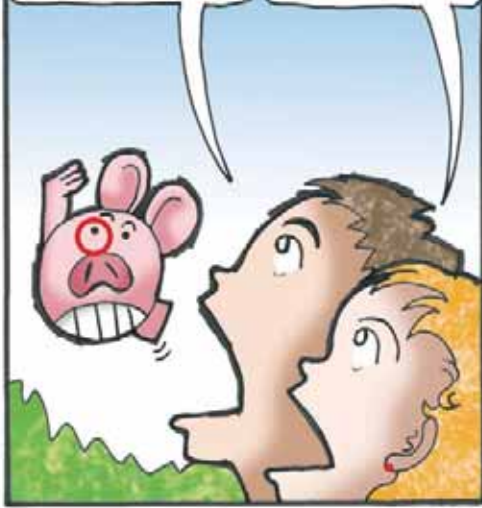


Um, I'd better not catch you doing this at home!



Where did it go, dad?

Wow! The line is gone!



LOOK! The line has gone way up and over the tree!



Wow, like Robin Hood!

Help me pull this a little further up into the tree.



Great job!

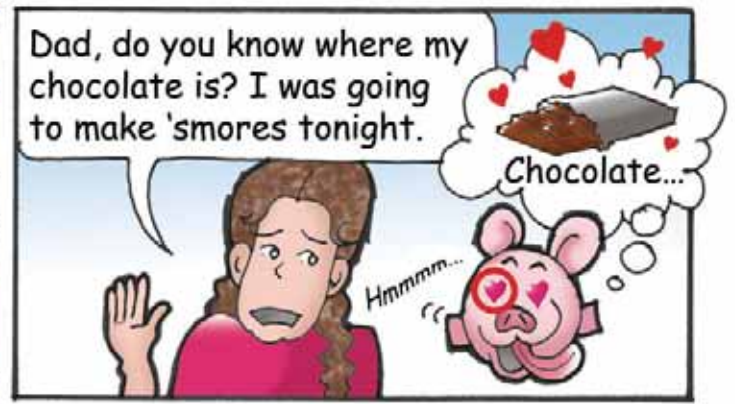
See what I mean? You caught a great looking branch there, but I prefer catching salmon when I fish!



HaHa!

Dink! Dink!





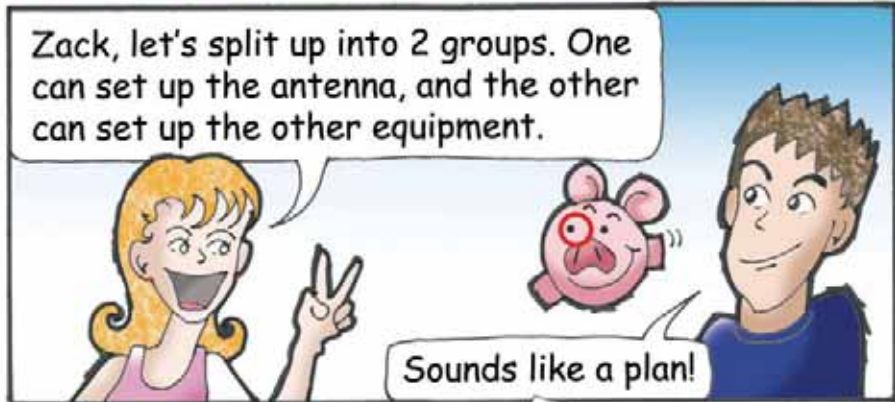




Looks like we've got lots of kids and moms and dads to help! This is great!

Hi Zack

Hi Dad

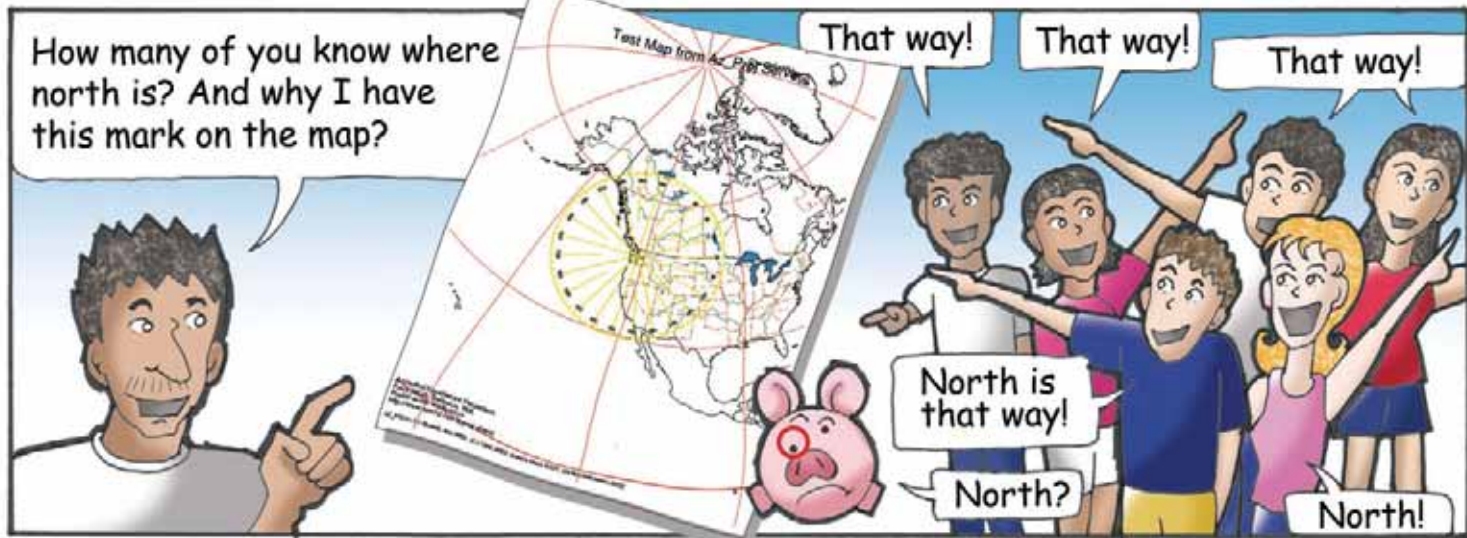


Zack, let's split up into 2 groups. One can set up the antenna, and the other can set up the other equipment.

Sounds like a plan!



BUT, first I want to point out a few things to everyone here.



How many of you know where north is? And why I have this mark on the map?

That way!

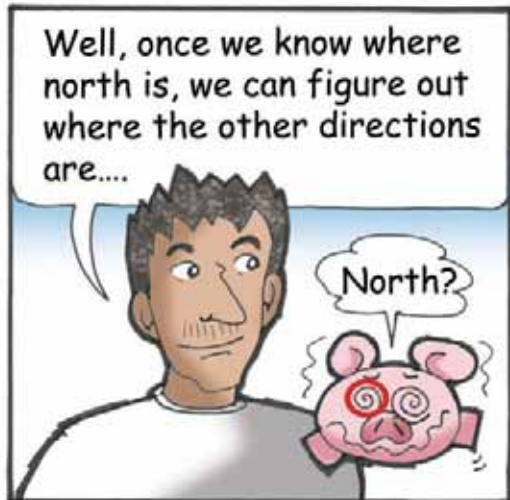
That way!

That way!

North is that way!

North?

North!



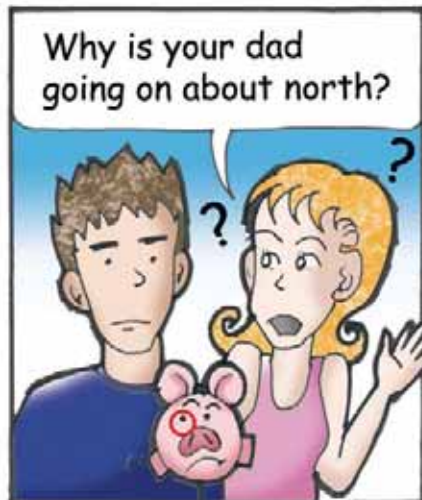
Well, once we know where north is, we can figure out where the other directions are....

North?



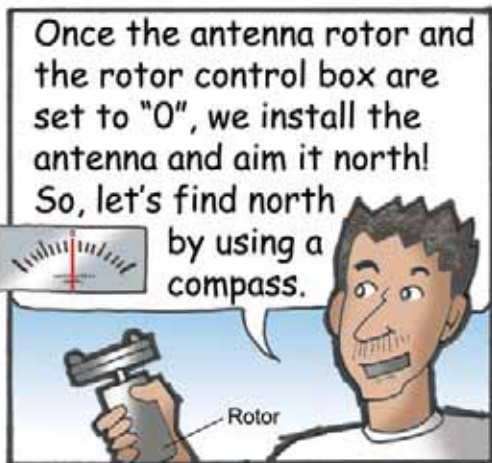
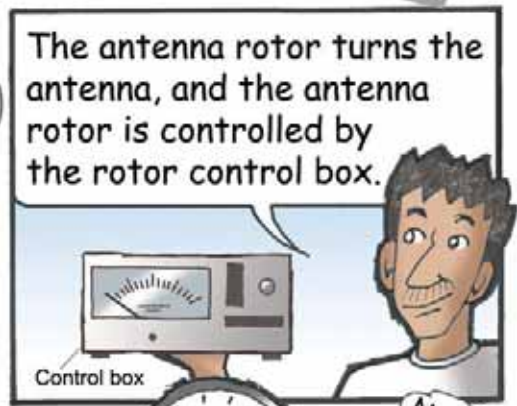
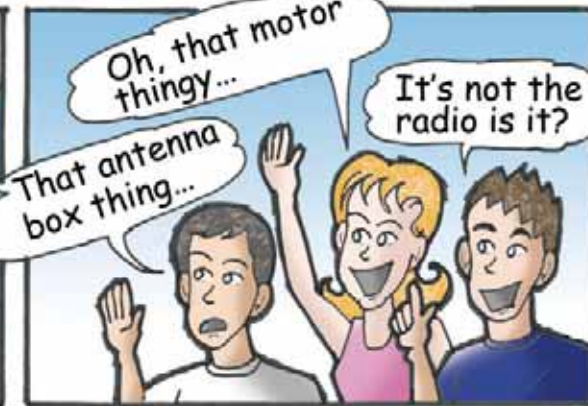
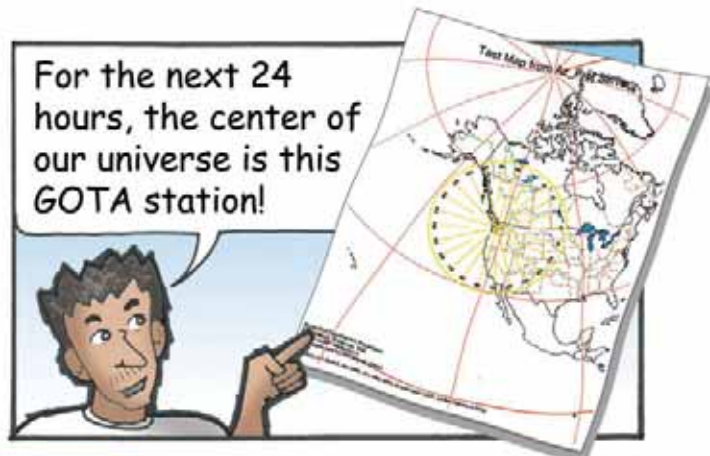
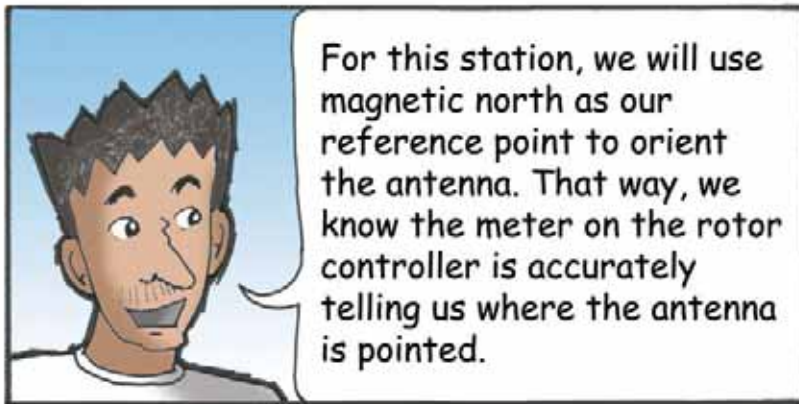
Yes, but there's "true north", and "magnetic north". They're different!

2 norths?



Why is your dad going on about north?









Hi, Mady, I'm Kelsey, KE7EBI, and this is Nicole, KD7EBU. We'll help you unpack the boxes next to the table!

We're the twins, Clair, KE7AXJ, and Karen, KE7AXI. This is Anna, KE7EBS. We can help too!



Hi! Olivia, KE7AXG here, and this is Dana, KE7AXW! We've got the power supply set up!

I think I've spoken to some of you before on the radio! Let's all start unpacking the van. All the boxes are marked. Some of them have things we'll need at the table...



Hi! Olivia, KE7AXG here, and this is Dana, KE7AXW! We've got the power supply set up!

I'm Maggie, KE7EAV! Hi, I'm Iman, KE7EBA. We've got some logbooks and t-shirts for everyone!



I wonder which one is which...

Then, when you're ready, just come with me. We'll see that you know what time you're all signed up for.



Hi, I'm Patrick, KE7EBX, and this is my friend, Zach, KE7EBK. We're with my Dad and Grandpa; we're all hams, ready to help!

Another Zach! Great! And who else have we here?

I'm Zach, with an "h".

I'm Kuroshe, KE7EAX, and this is my friend, Nema, KE7EBC.

Hi

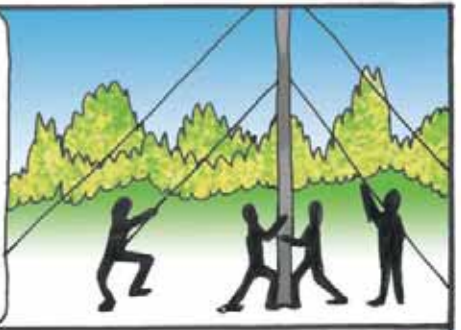
Hi, Zack, I'm Matin, KE7EFO, and this is my friend, Bobby, KE7EBB. We want to help!

Hi

No Problem! This is great, the more the better! We'll need everyone to follow along, and to help hold the guy lines steady as the antenna goes up!

What kind of antenna is this?

It's a Yagi portable system. It's not like the large one that the grown ups are setting up over there.



First, we'll measure the antenna elements for the 20 meter band. Then we'll attach them to the boom, which attaches to the mast. Finally, we'll push the whole thing up from the center by loosening the clamps on the mast. It just keeps telescoping up!

COOL!

OK, buddy up. I'm going to start by assembling the boom... the center piece of the antenna.



Zack, you help every group measure out for the correct bands.



I want each group to hold on to one of these guy lines. Patrick, you and your grandpa go along and hammer the lines into the ground with the mallet. Keep the antenna steady as we telescope it up and square it off!



Wow, Looks like we're set up first!



Mr. Condon, please take the cable, and let's get her set up into the rigs.



We're all set here, how are you doing?

Never better, this looks great!



Everyone has checked the time schedule, and it looks like we're ready! I'll let you guys get settled in with your tents and gear. I'll see you later!





Zack, lets get our tents set up before we start talking on the radio.



Mady, we'll all help you set up your tent. It's the least we can do for all the work you did at the GOTA station! We are so glad you are here this year!

Is that a pig?

Yeah, that's Zack's pig, Max. He is very friendly.

That makes sense, a ham at a ham radio event!

Hey, Mady, we'll help out too!

Thanks! I can use the help.

Hi, Mady!

...Is it Karen and Clair, or Clair and Karen?

Hey, Olivia, guys, we're over here!

We brought badminton too!

Zack, we'll help you set up your tent.

Bobby and I will help too, and here comes Patrick and Zack. Look, the girls are already done! We better hurry up.

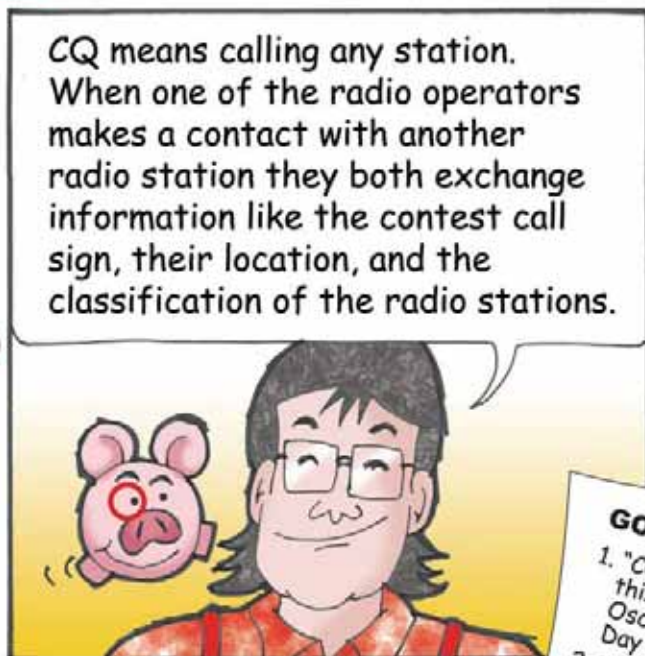
Thanks!





**CQ, CQ, CQ...  
contest, this is KI7YP...**

**Come on, Mady,  
the contest has started!**



**GOTA SCRIPT:**

1. "CQ Field Day, CQ Field Day, this is KC7OIO, Kilo Charlie 7 Oscar India Oscar calling CQ Field Day and listening."
2. Then someone calling in will use your station's call sign followed by **THEIR CALL SIGN**.
3. Record this as a contact.
4. Don't forget that people will use words and numbers together to help make their call sign easy to understand.
5. To make a contact, listen for the Radio Station's call, and then as they finish, answer back with **THEIR call sign and then YOURS** and "how do you copy?"
6. Don't forget to be polite and say: "Thank you" or give a big "73", which is a ham's way of saying the same thing.



OK, here goes: CQ Field Day, CQ Field Day, this is KC7OIO, Kilo Charlie 7 Oscar India Oscar calling CQ Field Day and listening.



What did he say!?



KC7OIO, this is N7DUO, how do you copy?

He said his call sign was N7DUO.



Why does he sound so funny?



What's going on?!

Well, Zack, with your handheld radio you talk on VHF, which gives a very clear voice pattern. Here, you are talking on HF where the radio waves are much longer, and can make voices sound funny. As you listen to people talk on HF, you will soon be able to understand what they say. Speak very clearly and try again!



VHF HF

CQ Field Day CQ Field Day this is KC7OIO, Kilo Charlie 7 Oscar India Oscar calling CQ Field Day and listening.



KC7OIO, thank you, this is N7DUO, November 7 Delta Uniform Oscar! How do you copy?

November 7 Delta Uniform Oscar, thank you, you're coming in clear! 73 from Kilo Charlie 7 Oscar India Oscar!



I got it all recorded, let's keep going!



Go GOTA Station! Go Field Day!

Thank you, KC7OIO and a big 73 to all of you! QRZed.



HOURS LATER

Zack and Mady, we will take over now to give you a rest.



How did it go?!

Great! Our furthest contact was New Hampshire!



It's hard work, but really amazing to be able to talk so far without wires or cables.



Wow! That's over 3,000 miles!

I wonder how far they'll talk?



How many marshmallows do you want?

As many as you can fit on that stick!!



Do you want a marshmallow?

No, thanks. I'm still trying to find my chocolate! I can't seem to remember where I put it. I guess I will have to do without 'smores tonight. Sorry guys. Anyway, I think I'm going to go to bed. Our shift is early in the morning. Good night!



Good night, Diane. I haven't seen that chocolate anywhere! It's really strange!



And where's Max?!

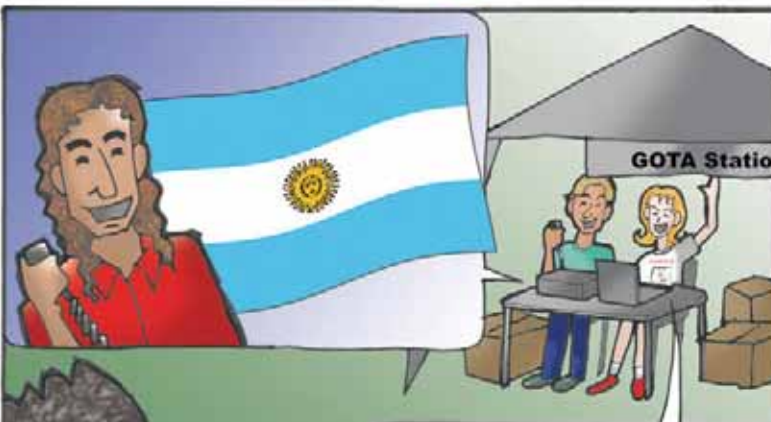
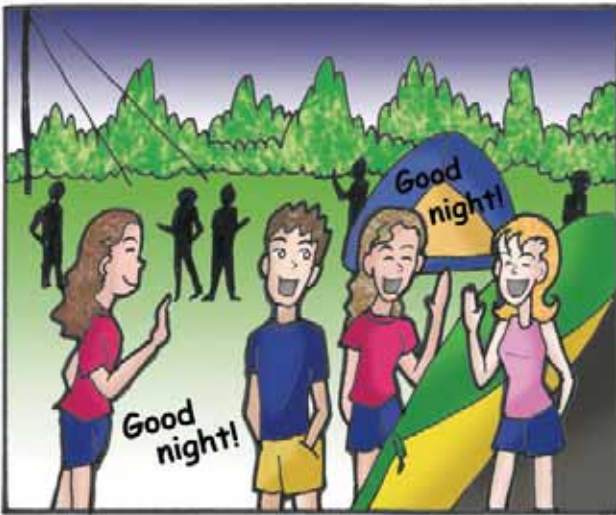


Well, we all better turn in soon. We want to make sure we're in good shape for our shifts.

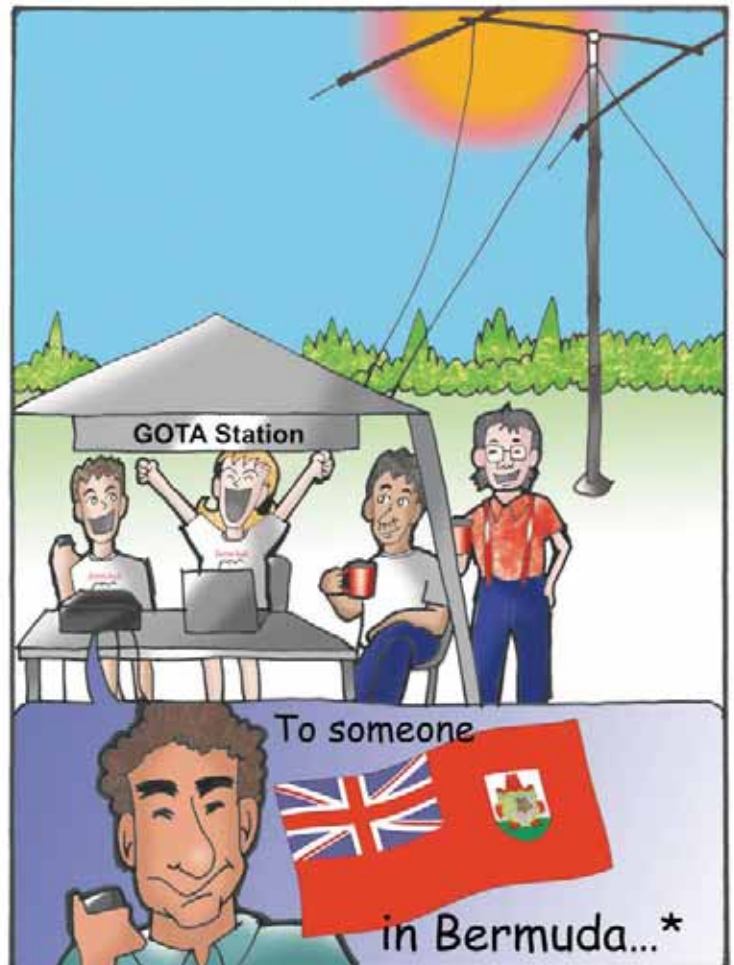
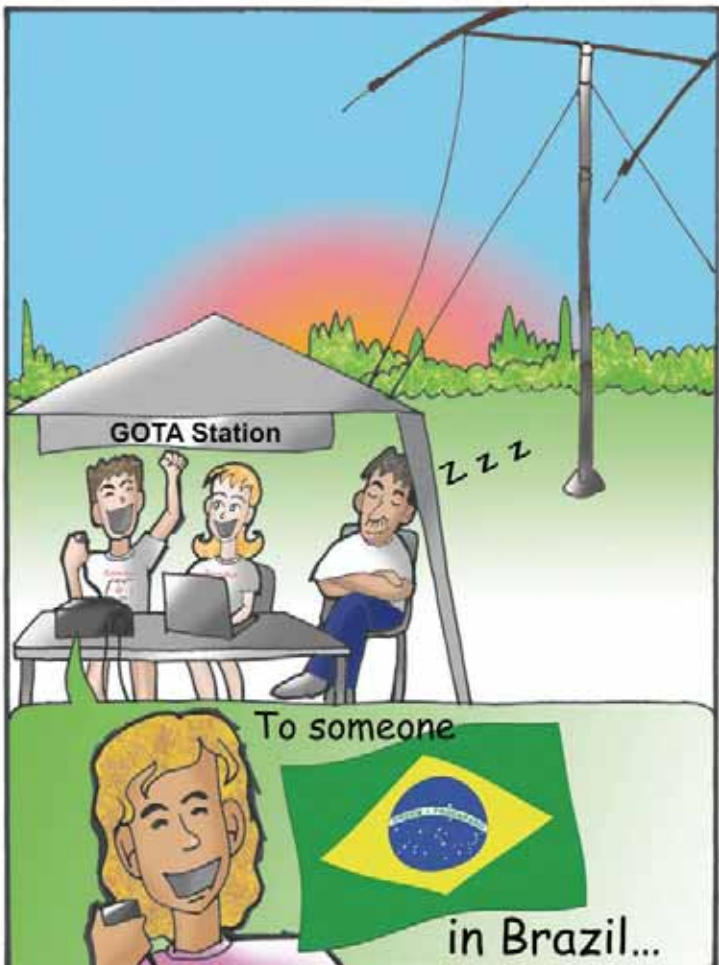
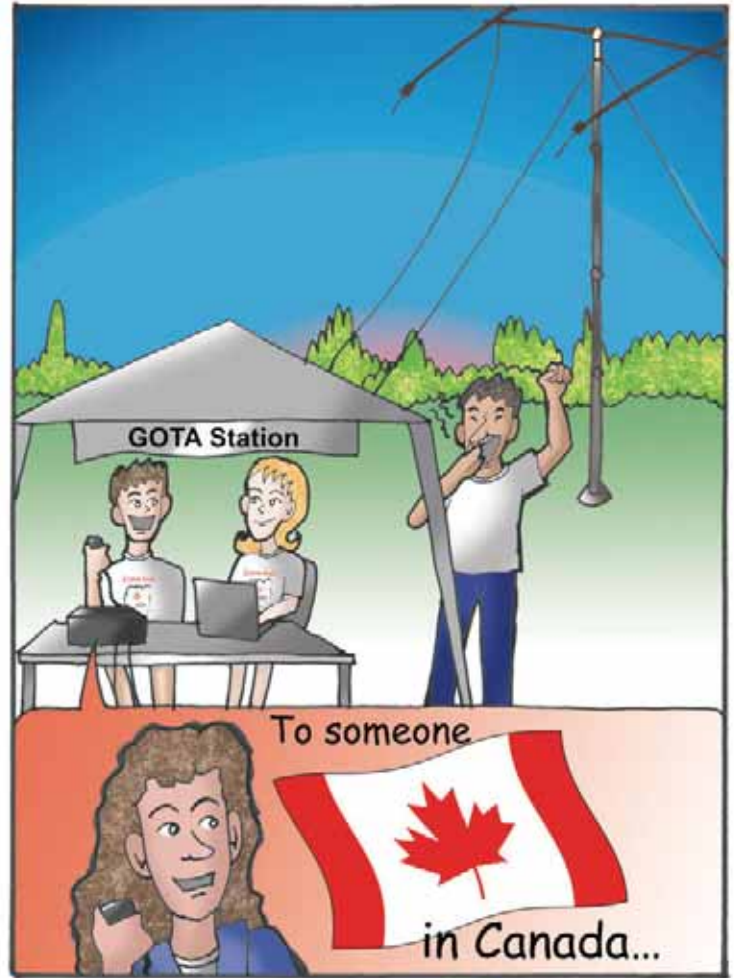
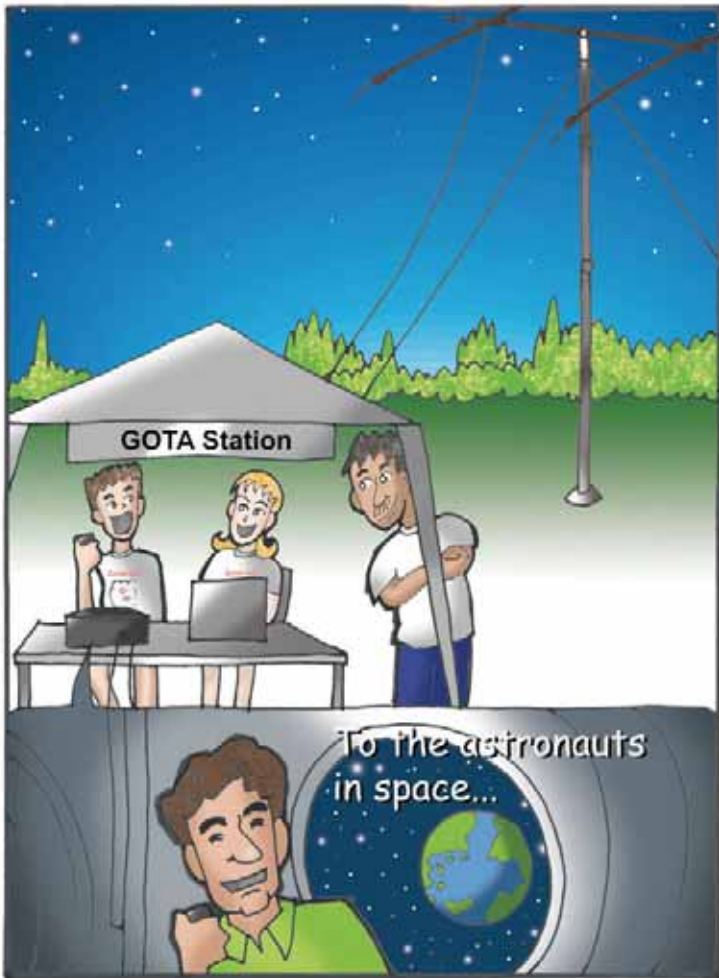


I think we need to get back to our tents. We have to be on the air at 2:00 AM. And we want to talk even farther than our first shift!









\*Eligibility: Field Day is open to all amateurs in the areas covered by the ARRL/RAC Field Organizations and countries within IARU Region 2. See: <http://www.iaru-region2.org/>.



Congratulations!  
We've made a couple of hundred contacts on our GOTA station during the last 24 hours, including a contact with astronauts! If this would have been an actual emergency, instead of a Field Day, we would have been able to request and get all sorts of emergency help from outside the local area.



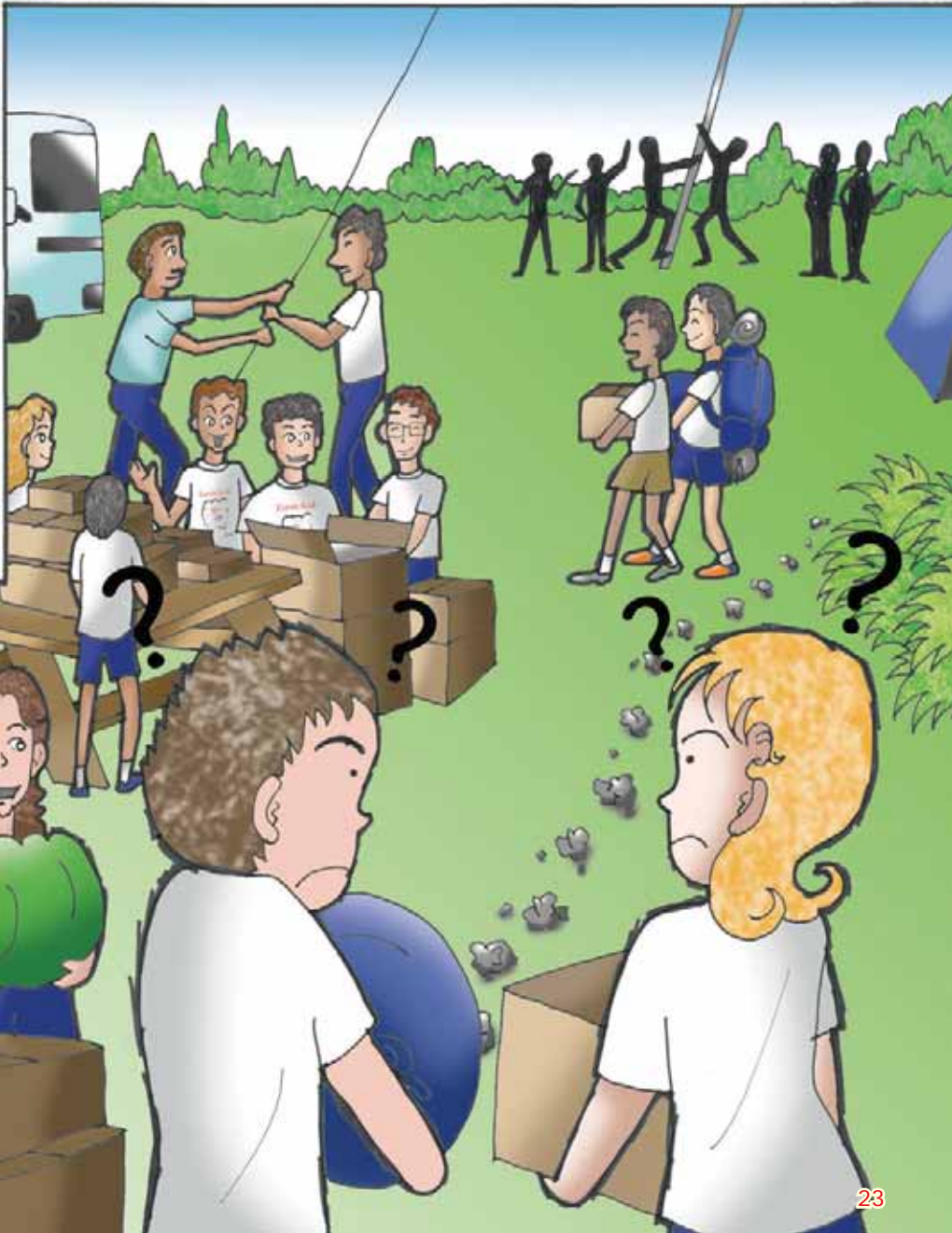
Thank you, and well done, radio operators! Now, let's take everything down and head on home!



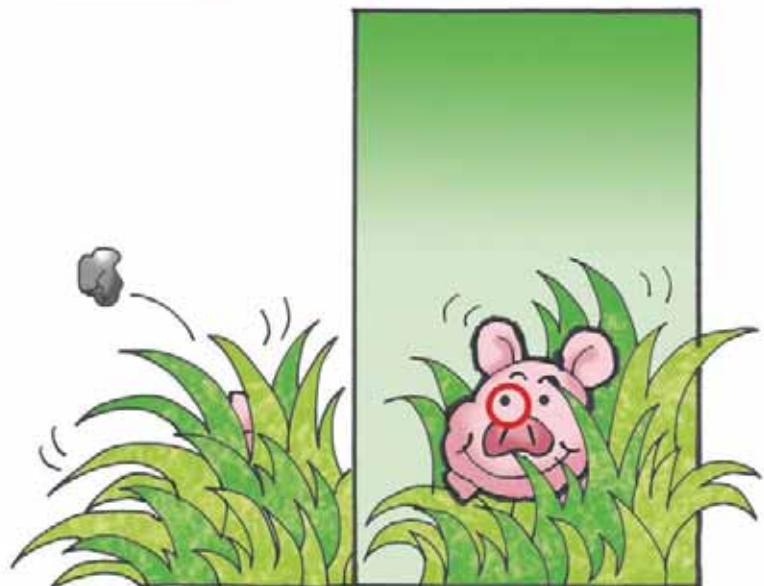
Mady, do you know where Max is? I couldn't find him last night.



No. Last time I saw him was before marshmallows. What are all these wrappers from?









Well, your rides are waiting, so you better get going with Max. Take care! It was nice to meet you both. I hope to hear you on the radios, and I'll see you next year!

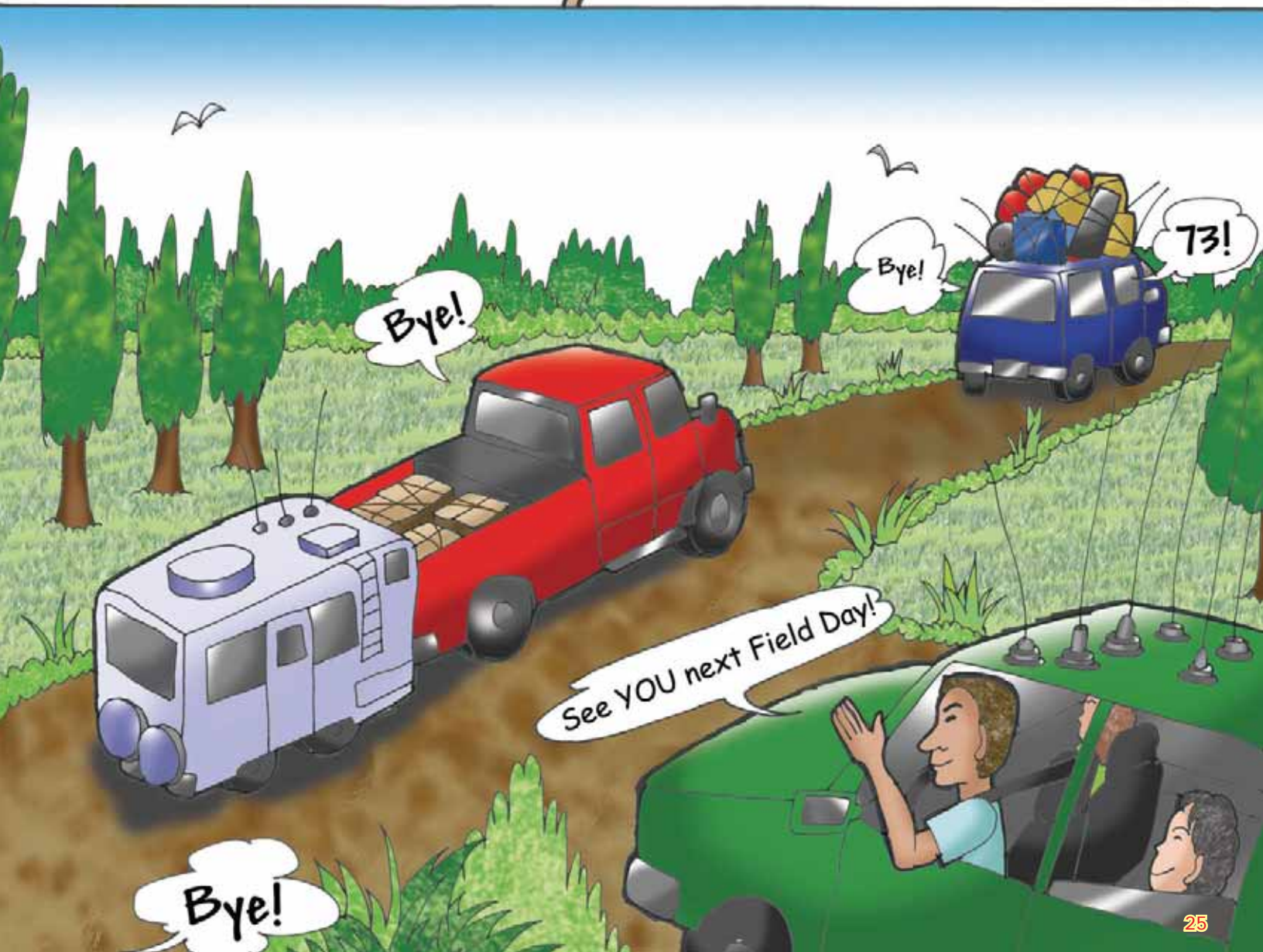
Bye, Diane!

Bye, Diane, see you next year!

I think after I get rested up, I'm going to study for my general class radio license.



Great! Then we BOTH can talk on HF! I'll help you with the test.



Bye!

Bye!

Bye!

73!

See YOU next Field Day!





# THE ADVENTURES OF ZACK & MAX

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