

CERT All-Member Monthly Newsletter JULY-AUGUST 2013

The CERT monthly newsletter is available on our webpage at: http://www.nassaucountyny.gov/agencies/OEM/CC/CERT/brief.html

CERT IS WHAT YOU MAKE IT!

INSIDE THIS NEWSLETTER:

Beat the Heat	1
Silent Key: Joe Reekie K2KYQ	1
Correction	2
Field Day	2
CERT Connection Coast to Coast	2
Go Bags: A Tale of 2 Bags	3
Division News	4
May Activities	4
July-August 2013 Events Calendar	5
Lightning Safety	6
Volunteer Luncheon Photos	8
Purchased a Generator Recently?	10

Generator Buying

Guide

Beat the Heat

Recommendations from the Centers for Disease Control submitted by Judy Ryan, Planning Section Chief

Whether we are enjoying the summer beach weather or being deployed during a heat wave, let's be smart and be prepared for helping ourselves and others with identifying the signals of heat stress related

Types of Heat Stress

illnesses.

Heat Stroke * Heat Exhaustion *
Heat Syncope * Heat Cramps *
Heat Rash

Heat Stroke

Heat stroke is the most serious heatrelated disorder. It occurs when the body becomes unable to control its temperature: the body's temperature rises rapidly, the sweating mechanism fails,



and the body is unable to cool down. When heat stroke occurs, the body temperature can rise to 106 degrees Fahrenheit or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency treatment is not given.

(Continued on page 6)

Silent Key: JOE REEKIE K2KYQ

1936 - 2013

We are saddened to announce the sudden passing of Joe Reekie, K2KYQ. A long time LIMARC member, and very active in amateur radio and public service. He will be missed!

Our deepest condolences to the Reekie family.

CERT Field Exercise

Sunday, September 22nd 2013

Location TBD

Please advise your Division Supervisor if you are planning to participate in this 'hands-on' training

Correction

Last month's article "Radio Amateurs Provide Communication Support in Boston Marathon Bombings" was mistakenly credited to Paul Shapiro, Division 1 Deputy Division Leader. It was actually provided by the AARL.

Field Day

As was mentioned in last month's newsletter Nassau County CERT / RACES did not have a Field Day site this year. But we hope you all took our advice and checked out a site or two near you. We hope you had fun and got a chance to play on HF (High Frequency) or a GOTA (Get On The Air) Station. Maybe you helped to set up or break down a site? Was it your first year or are you an old pro? Well let us know how you spent your Field Day Weekend.

The CERT Connection Coast to Coast

As many of you are aware we often open training to our sister agencies and have had NYC and Suffolk CERT's at various classroom trainings and our annual drill! But what you may not be aware of is that we collaborate with other CERT organizations in many areas! In fact just about a year ago I started corresponding with Genny from Walnut Creek CERT. Walnut Creek is a city in Contra Costa County, California, United States, located 16 miles (26 km) east of the city of Oakland in the East Bay region of the San Francisco Bay Area. Although not as large as neighboring Concord, Walnut Creek serves as the business and entertainment hub for the neighboring cities within central Contra Costa County, due in part to its location at the junction of the highways from Sacramento and San Jose (I-680) and San Francisco/Oakland (SR-24), as well as its accessibility by BART. The city's total estimated population, as of 2011, is 65,211.

We where Introduced by a mutual friend who knew we both where involved with CERT in our communities. We have been swapping ideas, stories and pictures ever since. What started off as two CERTs trading information blossomed into a friendship as we found out we had more in common then our friend Alice or for that matter CERT. Genny, a transplant from the east coast many years ago, knew of our area but I had no idea about her area. So I learned that Walnut Creek had some similar issues and concerns but many were very different from ours. Yes, the size of each was very different but so were issues like weather events, financial issues, etc. Then there was the issue of communications. Genny lives in an area far from flat like that of Nassau.

This led to her inquiring how we used Amateur Radio Operators as well as other methods. She Introduced me to some of her "Hams" and once more another connection was made that added to the concerns of both our organizations. This was a personal connection but there are many ways to "network" - face-to-face is one way at a conference which is where we met NYC and Suffolk representatives. But with the Internet booming you can reach out to other CERT organizations all over. Teen CERTs, Campus CERTs and other CERT organization are on FaceBook or have web pages. So the next time you are surfing the web take a moment to see who else is a CERT! You never know - you may even make a new friend!

On behalf of the leadership of Nassau County CERT and Nassau County RACES, we wish you all a Happy and Safe Independence Day!

Go-Bags: A Tale of Two Bags for the Same Mission

by Henry Teja, Division 1 Deputy Division Supervisor

I cannot take full credit for this article. The last CERT Divisional Leaders meeting, Darya Hall, the C-Cert Division Leader – C.W. Post, brought up the topic of discussing personal Go-Bags when CERTs are activated. Also, we need to have an SOP (standard operating procedure) where and when these go-bags should be deployed, or at least a plan to acquire them in time of emergencies and disasters. We all know CERT volunteers have, or should have, a green issued CERT Go-Bag.

What is in a green CERT Mission Go-Bag? For the benefit of all new and old CERTs who have not attended some retraining seminars, I will list some basic equipment. The CERT mission bag includes PPE/ PSE (personal protection equipment or personal safety equipment) such as goggles, heavy duty work gloves with leather palm and fingers, a green CERT



A new basic Propac™ CERT Mission Go-Bag

safety helmet, 3-5 pair nitrile or latex-free medical gloves, 3-5 N-95 or better masks, and a florescent green or yellow CERT vest. It is advisable to have a basic first aid kit, sterile gauze pads, a roll of gauze, several triangular bandages, some alcohol, and disinfected medical pads. Other items should include a roll of duct tape (with the cardboard core removed and flattened), waterproof pen, indelible marker and/ or lumber markers in yellow and red, a highlighter, a hand-held flashlight, a head-lamp or cap LED clip (and extra batteries for both), and some glow sticks. Other suggested equipment includes MylarTM reflective emergency blankets, 25-50 ft. 3/8" or 1/2" rope, a utility knife or box cutter, a waterproof pad, several triage tags, your GMRS/FRS radio (with extra batteries), and a disposable camera. It sounds like a lot o gear but you feel ready to go and ready for anything.

That's great if the event is only 6-8 hours long and you'll be home by nightfall. But if you're expected to stay longer than 6-8 hours, you may be underequipped personally.

What most people fail to realize is that disaster events may last longer than a 24-hour period and your personal needs have been neglected. Of course some CERT volunteers may not want to be involved in overnight or extended-stay missions for various reasons; some are physical, some are personal/family reasons. That's OK - all that can be asked is that you do what you can when you can. In any event, your Team or Division Leader should be advised of your limitations or personal needs so that

these are considered when planning for resources and assignments.

Those volunteers who can stay for extended and overnight periods will need a personal gobag in addition to your CERT Mission Go-Bag. Since disasters occur at inconvenient times, the deployment location is crucial for both bags.



Basic CERT Mission Go-Bag equipment

This is why I recommend following survivalists' and preppers' SOP for go-bags that are multi-tiered and modular.

Remember that you must have several plans in place for not only are you activating to an OEM/CERT disaster event, but you have a responsibility to your household and loved ones. What you do for yourself you must equally do for them. The items you may include in your personal and CERT Mission Go-Bags must be modular, redundant and integrated. There should be flexibility to create a "Get Home" Go-Bag, a Short-Term Go-Bag, and a Long-Term Go-Bag.

Let's discuss why a "Get Home" Go-Bag is necessary. If you work full— or part-time, it is just as likely that a disaster will occur when you are at work as when you are at home with your go-bag handy. If this fits your situation, you may want to carry a 'Get Home" Go-Bag or stage it where you work. It might include:

- A small first aid kit
- 2 pair of nitrile or latex free gloves
- 1 or 2 N-95 dust masks
- An emergency blanket (compact "space blanket")
- 2 or 3 power bars
- An energy booster drink
- 1 or 2 bottled waters
- A small personal hygiene kit (travel-size tooth-brush, tooth paste, comb/brush),
- Some analgesic pills (such as aspirin, ibuprofen, or Tylenol™)
- Personal medication if needed
- A multi-tool with sheath
- A small but powerful LED flashlight
- A fire starter or waterproof matches
- A 5- or 7-in-one tool which includes a whistle, compass, safety mirror, waterproof compartment (Continued on page 9)

Communications Group

Summer Safety Tips by Bruce Gronich K2BRG

With summer upon us Bruce Gronich K2BRG the Nassau County Skywarn Coordinator was kind enough to give us some Summer Weather tips to follow to keep us all Safe this Summer!

- 1. Always get your NWS local forecast in the morning to start your day.
- 2. Make weather awareness a part of your situational awareness.
- 3. Remember that weather can and does change quickly. Stay alert for worsening weather and be ready to take appropriate measures.
- 4. Assume any flooded road is under five feet of water. Place that thought in your mind before you decide to drive through it.
- 5. There is only one kind of downed power line- a live one.
- 6. When thunder roars, get indoors! The only way you know

- you are about to be struck by lightning is waking up afterwards (if you are lucky).
- 7. Remain indoors for thirty minutes after a thunderstorm.
- 8. You are not in Kansas. Do not chase storms on Long Island. Please follow all traffic laws and use common sense if you are spotting. Never place yourself or others in harms way.



9. If you observe winds over 60MPH, flood-

ing, a funnel cloud or tornado, or hail - please let the National Weather Service know.

10. Only let the weather surprise you with a warm, sunny day - and don't forget the sunscreen.

May Activities

May was a busy month. CERT was represented at the Jones Beach Air Show over Memorial Day Weekend, followed by the Long Island-New York City Emergency Management Conference. In addition, our All-County CERT meeting closed out the month. Here are some photos submitted by CERT members.



CERT Member Jayne Cafaro was instrumental in inviting our Guest Speakers to the CERT All-County Meeting from the Nassau County Police Department:

Assistant Chief Neil Delargy and Detective William Garvey



LI-NYC Emergency Management Conference table staffed by Sue Zichlin, Jayne Cafaro and Judy Ryan, seen here with PO Glen Neuman, NCPD

Photos submitted by Jayne Cafaro & Randi Chenkin

July-August 2013 - Upcoming Events

JULY

CERT Basic Course - Class 7-8 - Mon July 1 and 8

New Cassel Community Center 141 Garden Street, Westbury NY

Time: 7:00 - 10:00 pm (1900-2200) - Doors open at 6:30 pm

RACES/Comms Meeting - July Meeting CANCELLED

Division Leaders Meeting - Thur July 18th

OEM Lecture Hall

510 Grumman Rd. West, Bethpage NY

Time: 7:00 pm (1900)

Safe Talk Training - Tue July 23rd

OEM Lecture Hall

510 Grumman Rd. West, Bethpage NY

Time: 7:00 - 10:00 pm (1900-2200) - Doors open at 6:30 pm

Division 2 Meeting - Tue July 23rd

Beth Sholom Temple

390 Broadway, Lawrence NY

Time: 7:00 pm (1900)

Comms EC-100 Course - Sat & Sun July 20th & 21st

OEM Lecture Hall

 $510~{\rm Grumman}$ Rd. West, Bethpage NY

(SAT): 9 am - 4:00 pm (0900-1600)

(SUN): 9 am - 1:00 pm (0900-1300)

AUGUST

RACES/Comms Meeting - Thur August 1st

OEM Lecture Hall

510 Grumman Rd. West, Bethpage NY

Time: 7:00 pm (1900)

Division Training Officers Meeting - Tues Aug 6th

OEM Lecture Hall

510 Grumman Rd. West, Bethpage NY

Time: 7:00 pm (1900)

Division Leaders Meeting - Thur August 15th

OEM Lecture Hall

510 Grumman Rd. West, Bethpage NY

Time: 7:00 pm (1900)

Division 2 Meeting - Mon August 19th

Beth Sholom Temple

390 Broadway, Lawrence NY

Time: 7:00 pm (1900)

Moulage Training - Thur August 22nd

OEM Lecture Hall

510 Grumman Rd. West, Bethpage NY

Time: 7:00 pm (1900)

Division 3 Meeting - Mon August 26th

Glen Cove Fire Department HQ

Glen Cove Avenue & Route 107, Glen Cove NY

Time: 7:00 pm (1900)

July 2013						
Sun	Mon	Tues	Wed	Thur	Fri	Sat
	1 CERT Basic	2	3	4	5	6
7	8 CERT Basic	9	10	11	12	13
14	15	16	17	18 Div Ldrs Mtg	19	20 EC001 Class Day 1
2] EC001 Class Day 2	22	23 Safe Talk Trng Div 2 Mtg	24	25	26	27
28	29	30	31			

	August 2013					
Sun	Mon	Tues	Wed	Thur	Fri	Sat
				1 RACES	2	3
4	5	6 Div Trng Off Mtg	7	8	9	10
11	12	13	14	15 Div Ldr Mtg	16	17
18	19 Div 2 Mtg	20	21	Moulage Trng	23	24
25	26 Div 3 Mtg	27	28	29	30	31

September 2013						
Sun	Mon	Tues	Wed	Thur	Fri	Sat
1	2	3	4 Div 1 Mtg	5 RACES	6	7
8	9	10	11	12	13	14
15	16	17	18	19 Div Ldr Mtg	20	21
22 CERT Field Exer	23	24	25 CPR/ AED Trng	26	27	28
29	30					



Lightning Safety

Summer is the peak season for lightning-related deaths and injuries, though people are struck by lightning year-round.

General Tips

- No outdoor area is safe when you hear thunder.
- If you hear thunder, find a safe indoor shelter (a substantial building or enclosed, metal-topped vehicle with the windows up).

Indoor Safety Tips

- Stay off corded phones, computers, and other electrical equipment.
- Avoid plumbing, including sinks, baths, and faucets.
- Stay away from porches, windows, and doors.

Never lie on concrete floors or lean against concrete walls.

Outdoor Safety Tips

No outdoor area is safe during a thunderstorm, but if you're caught outside with no safe shelter options, take these steps to reduce your risk of being struck by lightning:

- Come down from elevated areas.
- Never lie flat on the ground.
- Never shelter under an isolated tree.
- Never use a cliff or rocky overhang for shelter.
- Immediately get out and away from ponds, lakes, and other bodies of water.
- Stay away from objects that conduct electricity, such as wire fences.

For more information regarding lightning safety week, please click the link below.

http://www.lightningsafety.noaa.gov/index.htm



Beat The Heat (Continued from page 1)

Symptoms

Symptoms of heat stroke include:

- Hot, dry skin or profuse sweating
- Hallucinations
- Chills
- Throbbing headache
- High body temperature
- Confusion/dizziness
- Slurred speech

First Aid

Take the following steps to treat a worker with heat stroke:

- Call 911 and notify their supervisor.
- Move the sick worker to a cool shaded area.
- Cool the worker using methods such as:
 - * Soaking their clothes with water.
 - * Spraying, sponging, or showering them with water.
 - * Fanning their body.

Heat Exhaustion

Heat exhaustion is the body's response to an excessive loss of the water and salt, usually through excessive sweating. Workers most prone to heat exhaustion are those that are elderly, have high blood pressure, and those working in a hot environment.

Symptoms

Symptoms of heat exhaustion include:

- Heavy sweating
- Extreme weakness or fatigue

- Dizziness, confusion
- Nausea
- Clammy, moist skin
- Pale or flushed complexion
- Muscle cramps
- Slightly elevated body temperature
- Fast and shallow breathing

First Aid

Treat an individual suffering from heat exhaustion with the following:

- Have them rest in a cool, shaded or airconditioned area.
- Have them drink plenty of water or other cool, nonalcoholic beverages.
- Have them take a cool shower, bath, or sponge bath.

Heat Syncope

Heat syncope is a fainting (syncope) episode or dizziness that usually occurs with prolonged standing or sudden rising from a sitting or lying position. Factors that may contribute to heat syncope include dehydration and lack of acclimatization.

Symptoms

Symptoms of heat syncope include:

- Light-headedness
- Dizziness
- Fainting

Beat The Heat (Continued from page 6)

First Aid

Individuals with heat syncope should:

- Sit or lie down in a cool place when they begin to feel symptoms.
- Slowly drink water, clear juice, or a sports beverage.

Heat Cramps

Heat cramps usually affect workers who sweat a lot during strenuous activity. This sweating depletes the body's salt and moisture levels. Low salt levels in muscles causes painful cramps. Heat cramps may also be a symptom of heat exhaustion.

Symptoms

Muscle pain or spasms usually in the abdomen, arms, or legs.

First Aid

Workers with heat cramps should:

- Stop all activity, and sit in a cool place.
- Drink clear juice or a sports beverage.
- Seek medical attention if any of the following apply:
 - * The worker has heart problems.
 - * The worker is on a low-sodium diet.
 - * The cramps do not subside within one hour.

Do not return to strenuous work for a few hours after the cramps subside because further exertion may lead to heat exhaustion or heat stroke.

Heat Rash

Heat rash is a skin irritation caused by excessive sweating during hot, humid weather.

Symptoms

Symptoms of heat rash include:

- Heat rash looks like a red cluster of pimples or small blisters.
- It is more likely to occur on the neck and upper chest, in the groin, under the breasts, and in elbow creases.

First Aid

Workers experiencing heat rash should:

- Try to work in a cooler, less humid environment when possible.
- Keep the affected area dry.
- Dusting powder may be used to increase comfort.

Recommendations for Employers

Employers should take the following steps to protect workers from heat stress:

- Schedule maintenance and repair jobs in hot areas for cooler months.
- Schedule hot jobs for the cooler part of the day.
- Acclimatize workers by exposing them for progressively longer periods to hot work environments.
- · Reduce the physical demands of workers.
- Use relief workers or assign extra workers for physically demanding jobs.
- Provide cool water or liquids to workers.
- Avoid alcohol, and drinks with large amounts of caffeine or sugar.
- Provide rest periods with water breaks.
- Provide cool areas for use during break periods.
- Monitor workers who are at risk of heat stress.
- Provide heat stress training that includes information about:
 - * Worker risk
 - * Prevention
 - * Symptoms
 - * The importance of monitoring yourself and coworkers for symptoms
 - * Treatment
 - * Personal protective equipment

Recommendations for Workers

Workers should avoid exposure to extreme heat, sun exposure, and high humidity when possible. When these exposures cannot be avoided, workers should take the following steps to prevent heat stress:

- Wear light-colored, loose-fitting, breathable clothing such as cotton.
- Avoid non-breathing synthetic clothing.
- Gradually build up to heavy work.

Schedule heavy work during the coolest parts of day.

- Take more breaks in extreme heat and humidity.
- Take breaks in the shade or a cool area when possible.
- Drink water frequently. Drink enough water so that you never become thirsty: Approximately 1 cup every 15-20 minutes.
- Avoid alcohol, and drinks with large amounts of caffeine or sugar.
- Be aware that protective clothing or personal protective equipment may increase the risk of heat stress.
- Monitor your physical condition and that of your coworkers.



Thank you!!

Volunteer "Thank You" Luncheon - June 29th 2013



Go Bags (cont'd from page 3)

for matches and magnifier; some also have an LED flashlight, thermometer, and a razor edge to cut rope or cloth.

This should be enough to get to your vehicle or home, wherever your primary go-bags are kept. Before deployment, your duty as a CERT volunteer is to make sure their family and loved ones are safe, provided for and are informed as to your whereabouts or eventual mission location.

Now let's examine your necessary items for your personal go-bag. Just remember what we discuss for personal go-bags should apply to everyone that you have a responsibility to as well. You family members should each have a modular personal go-bag for their needs and safety in case they must relocate to a shelter or elsewhere. As I stated before and will continue to state, disasters do not care about any of your personal situations or your loved ones. It is an equal opportunity event giving no one special treatment. Therefore everyone must be prepared - including children. Consider the natural disasters that have recently been in the news. Do you think they were ready for anything?





Recent Tornado Damage in Moore, OK

Every personal go-bag should include some aspect of the "Six Pillars of Personal Survival". What are those six pillars?

- 1. Health & Security
- 2. Shelter & Sleeping
- 3. Water
- 4. Power
- 5. Food
- 6. Tools

Some of these items may be provided by emergency shelters within a reasonable time. However the experience of Hurricanes Katrina and Rita show that in the aftermath, pre-designated shelters provided by





Long Island after Super Storm Sandy

Federal, State, and private organizations, were not fully operational for 7-14 days. More recently, in the wake of Super Storm Sandy many supplies and resources were delayed in getting to the shelters or PODs for distribution. Logistical and transportation problems are a hallmark of these disaster incidents. Individuals must be prepared to care for themselves for 5 to 10 days, and going to a shelter before other options are exhausted should be a last resort.

The contents of your personal go-bag should be carefully considered, particularly for CERTs who intend to work overnight or be away from home for several days. Your Short-Term Go-Bag should have the bare essentials for 2-3 days survival. Once again, the Short-Term and Long-Term Go-Bags must be assembled for each person in your household. Consider an add-on bag for activities and games if you have small children. Basic items to consider:

- A personal hygiene kit
- A small towel, wash cloth and/or pre-moisten towelette packs
- A small first aid kit with a blood clot packet
- Prescription medications
- A disposable camera
- 1-2 rolls of toilet paper
- Bottled water
- 6-8 power bars
- A flashlight with extra batteries
- Several 12-hour glow sticks
- Cell phone charger
- A small hand-crank NOAA emergency radio
- FRS radio with extra batteries

(Continued on page 10)

Go Bags (cont'd from page 9)

- A multi-tool
- Emergency "space blanket"
- A poncho
- Wool or thermal sweater, a change of underwear and socks; one change of clothing (seasonally appropriate)
- \$300-\$500 cash (small denominations)
- Decks of playing cards

As a head of household or responsible adult, the following should be included with your go-bag if your home is in danger or you will not be able to return to your home for a lengthy period during a disaster:

- Copies of key documents
- Photos of your property (each room and all four sides of house, garage, sheds)

The last module for your personal go-bag should include basic needs for time away from home over 72 hours long. This part of a go-bag is for CERT volunteers that may be able to travel out-of-state or be involved in extended long-term disaster relief. Most CERT volunteers will not need such equipment.

Always make plans for 14 days, less some food and water supplies, especially if you have a long-term plan in place other than utilizing a shelter for your family and love ones. Government and private organization shelters will provide basic water, food, shelter, toilet and shower facilities, and limited power resources. Therefore this Long-Term Go-Bag should add to your Short-Term Go-Bag:

- Change(s) of clothing
- Expanded medical supplies, including additional prescribed medications
- Additional personal hygiene items (soap, toothpaste, toilet paper, etc.)

Remember to plan for the weather and seasonal changes. This requires revisiting your go-bag often during the year to rotate items in or out of your personal bags. I prefer to make one type of bag with seasonal layers of clothing. I gear everything toward early spring and late fall, except for

the outer coat. You may wish to pack your favorite wool blanket or sleeping bag, or maybe a pillow and a bed roll or foam pad to add comfort to your longer stay.



Displays a 72-hour basic survival go-bag, less personal items for 4 persons

Your Long-Term Go-Bag may also include additional water and food reserves (figure on a 7-10 day minimum), a water purifying device, a pocket camp stove with sufficient fuel tablets for several weeks use. These items are not necessary in most cases but like someone said about insurance "it is better to have and not need it then need it and not have it"

Purchased a portable generator recently? You need to make sure your home has working carbon monoxide alarms. Any equipment that runs on an internal combustion engine, including generators, lawn mowers, power washers, and cars, can unleash this colorless, odorless, and highly poisonous gas into your home.

Known as the silent killer, CO claims about 500 lives each year. About 170 of these deaths involve non-automotive products, including fuel-burning furnaces, gas ranges, and room heaters. Spurred by the weather-related demand for portable generators, engine-powered

equipment has become an increasing threat. In 2005, for example, 47 people died from generator-related CO poisonings in the aftermath of Hurricane Katrina, according to the Consumer Product Safety Commission. Hurricane Sandy added at least a dozen deaths.

That's why it's critical to operate a power generator outdoors only, at least 15 feet from the house. But you also need to install CO alarms in your home. <u>Consumer Reports' CO and smoke alarm buying guide</u> tells you everything you need to know about choosing and using these devices. Our Ratings and recommendations include models from First Alert and Kiddie.





Generator Buying Guide

Reprinted from Consumer Reports

Getting started

Blackouts needn't lead to spoiled food and nights by flashlight. Consumer Reports' generator tests show that you can start powering a houseful of lights and appliances for less than \$700. But as we found, some important components cost extra.

We focused on moderately priced portable and stationary models that deliver 5,000 to 7,000 watts, enough for most needs. Portables cost the least and can be stored in a garage or shed when you don't need them. A lower-priced model powered refrigerators, well pumps, and other home gear almost as well as a more expensive top-scorer.



Stationary models install permanently outside your home and start automatically when needed. And because they run on propane or natural gas instead of gasoline, they offer extended or unlimited run time.

Buying a generator is just the beginning. Many models don't come with parts that you'd think would be part of the price. And some could let you down when you need them most or put an added load on appliances. Here are the details.

Reliability matters

Generators are typically sold by wattage. How much they put out determines not only how many lights and appliances you can run at once but how well they run. For example, a refrigerator often requires about 600 watts, a portable heater 1,500 watts, a wind ow air conditioner 1,000 watts, and lights 60 to 200 watts. Our <u>wattage calculator</u> provides an average wattage rating for most appliances and devices to help you to tally your needs.

"Batteries not included" applies. Several portables offer electric starting. But the battery required for that feature usually costs an extra \$50. And if you think all portables have wheels, think again: They're a \$150 option on one model we tested.

Some slipped when demand surged. All of the tested generators met their basic wattage claims. Manufacturers also make higher surge-wattage claims for the extra power needed when fridges, air conditioners, and pumps cycle on. Subpar surge wattage lowered the power-delivery scores of some models in our tests.

Some can overheat appliances. Our power-quality test judges the ability to deliver the 120 volts that home circuits usually need. Most met that challenge although one model was more than 10 volts shy under a heavy load and voltage from another was also low—and slightly uneven. Both conditions make motorized appliances and some electronics run hotter.

How to choose

Decide what you really need to power. If that includes a central air conditioner or an electric dryer or oven, you'll need a larger generator than the ones we tested. Here's what else to keep in mind:

Count on a transfer switch. It costs about \$500 to \$900 installed and connects a portable generator to your home's circuit box as with a stationary model. In addition to eliminating the risk and hassle of extension cords, the switch protects the generator and appliances from damage when grid power returns and keeps the generator from endangering technicians working on the power lines.

Think about the fuel. Most portables use roughly 8 to 22 gallons of gasoline a day, compared with four to eight 20-pound tanks of propane for portable models. (A 250-gallon tank for stationary units can run 8 to 15 days.) Buying and storing lots of fuel before a storm can be unwieldy, although you can pour unused gasoline into your car's gas tank.

Look for smart features. All but two of the portable generators in our tests turn themselves off when engine oil is low. And the fuel shutoff on all tested gasoline models lets you run the engine dry to draw gas out of the fuel system to keep it from fouling parts if it degrades during storage.

Play it safe

Powering too many appliances will trip the generator's circuit breakers, causing power loss. Be sure what you're powering is within the generator's rated wattage; most transfer switches make that easier by showing wattage levels.

And protect against carbon monoxide, which kills about 86 people each year--and sends thousands more to the emergency room. Run any generator outdoors and away from the house, far from doors, windows, and anywhere else air enters the house. Never run it in a basement or garage; even with the garage door open, it endangers people inside the house.