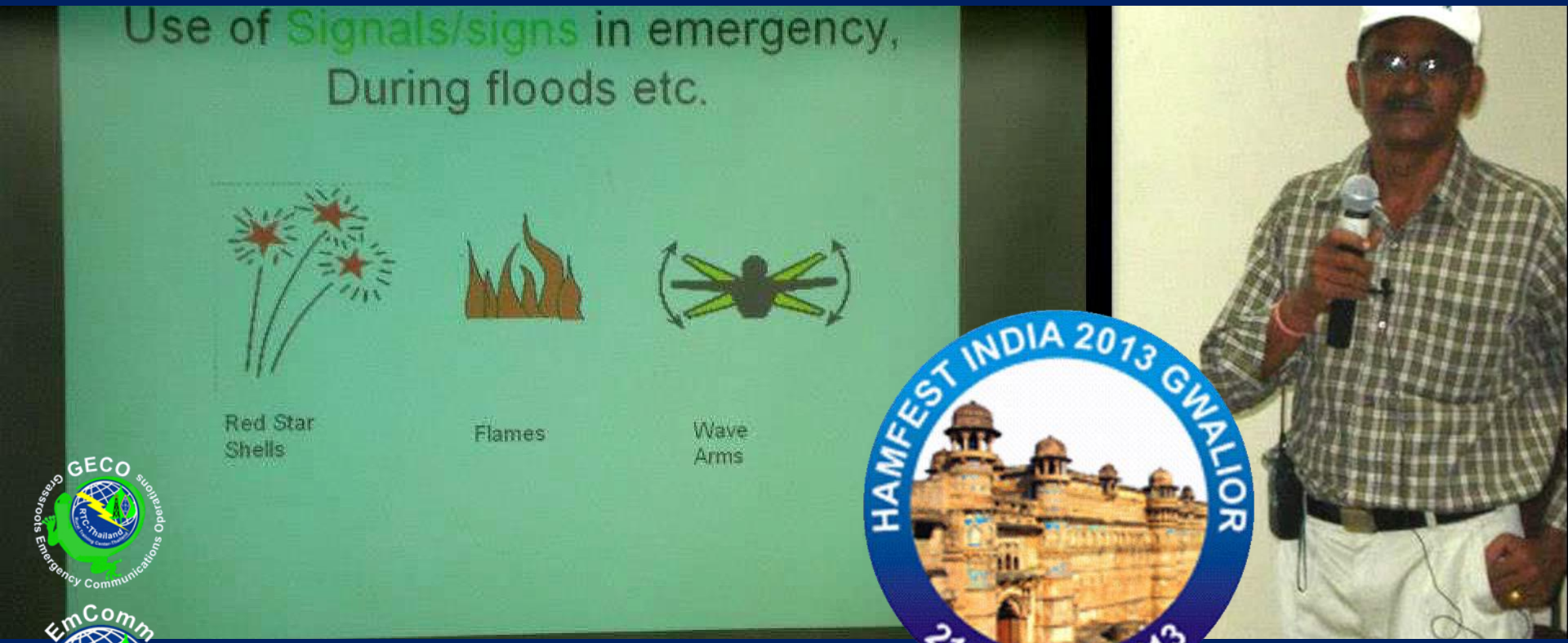
Next Gen EmComm: GECO

Grassroots Emergency Communications Operations



HAMFEST INDIA 2013 GWALIOR
21-22 SEPT. 2013

Prepared for Hamfest India 2013

Rural Training Center-Thailand Emergency Communications

Photo courtesy of VU2NXM

This presentation created for

HAMFEST INDIA 2013 GWALIOR

21-22 SEPT. 2013

GECO Grassroots Emergency Communications Operations

EmComm Emergency Communications

Created by

VU2NXM
Basappa Arabole

Ex-Chief Telegraphist, Wireless Instructor of Indian Navy; Trainer in Ham awareness and Ham licensing classes

HS0ZHM
Greg Lee

Rural Training Center-Thailand Co-founder. Geography Prof. Emeritus, MEWS & Next Gen EmComm/GECO Mentor/Trainer

Terms: Next Gen

Next Gen = next generation.

We aim for remote rural elementary school students.

Image from the Internet; educational fair use clause

Terms: EmComm

EmComm = Emergency communications (including non-radio and radio communications)

Photos courtesy of VU2NXM

Image from the Internet; educational fair use clause

Terms: GECO

GECO = **G**rassroots **E**mergency **C**ommunication **O**perations: Originally a guide for remote rural area non-EmComm hams, it now invites the participation of non-hams.

Photo courtesy of E20NXT

RTC-TH photo: Elementary School Weather Observer Training

GECO wants to empower villagers in remote rural areas for EmComm

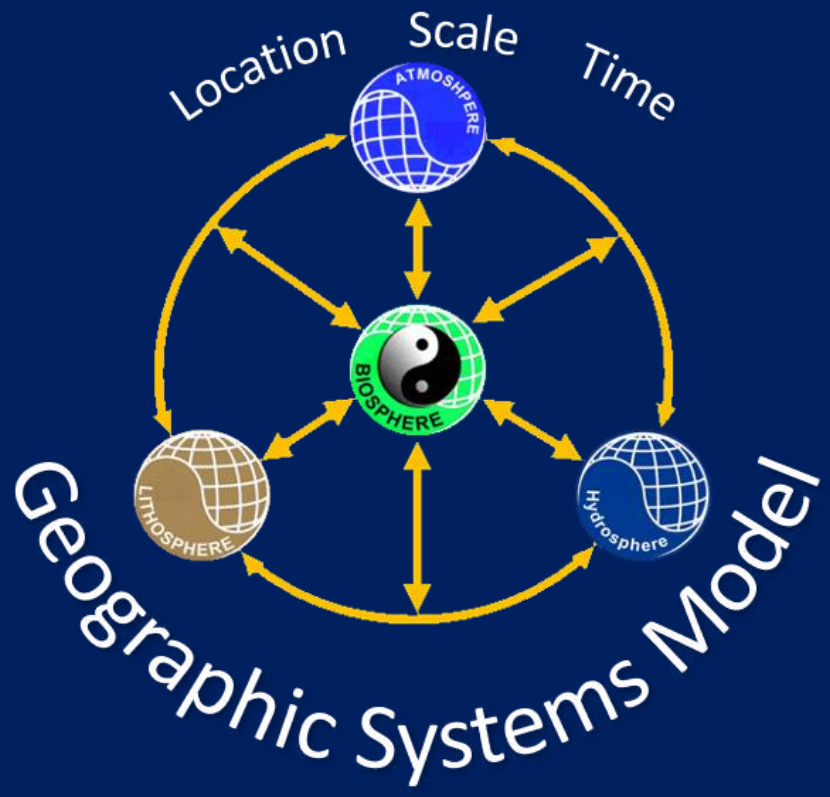
Licensed hams (adult or student), village leaders, and elementary school students in remote rural areas..

Adult non-hams, village leaders, and elementary school students in remote rural villages.

Adult non-hams, village leaders, and elementary school students in remote rural villages.

Program modifications may be necessary due to national laws and radio regulations.

GECO and Geography



GECO uses Geography to help people know their potential local disasters.

We want people to plan for their own rescue.

FFI: To learn more, see Note #2 after the end of this presentation.

GECO and Rescue

Image from the Internet; educational fair use clause

In remote areas, helicopters may be the first outside help to arrive.

- Your village emergency plan helps them find you.
- You need know how to signal them and let them know what your signals mean.

See Note #3 after the end of this presentation.

GECO 1 Components

Characterizing your village and making an emergency plan

Selecting / making & using appropriate non-radio ground-to-air (GTA) signals

Plan your own rescue.

Give a copy of your village emergency plan and non-radio GTAsignals to the local and regional emergency authorities.

Your Village Emergency Plan

You know your village better than most who come to rescue you.

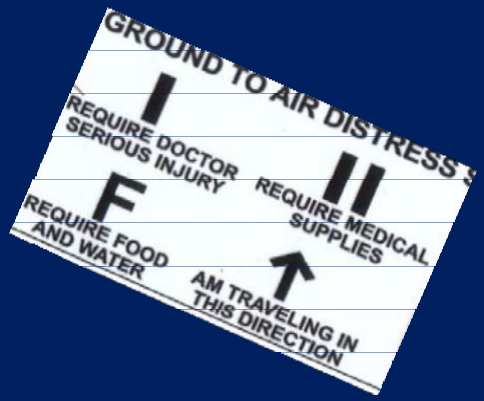
It is in your own best interest to give them as much accurate information about how to find your village and what to expect when they arrive.

Image from the Internet; educational fair use clause

FFI: See Note #2 after the end of this presentation to learn more.

What to Put in Your Emergency Plan

The key information includes your village location data, maps, and non-radio ground-to-air signals you will be using. Give copies to local and regional emergency authorities.



Try to have 2-3 days of food, water, medical supplies and shelter so you can hold out until help arrives.

1

Most remote villagers have no way to communicate with helicopters

Image from the Internet; educational fair use clause

It is easy for them to learn, make and use basic non-radio ground-to-air (GTA) signals.

Advisory Note

PLAN YOUR OWN RESCUE

Check with your emergency authorities to see if they have standard non-radio GTA signals you can use.

If not, we suggest the following basic GTA signals for GECO villages. Get copies of these to your emergency authorities so they know what your signals mean.

Non-Radio GTA Signals

Current environmental conditions affect the choice & use of non-radio GTA signals.

Method	Time	Fair WX	Cloudy WX	Rainy WX	Snow	Fog
Smoke		Y	Y	N	Y	N
Mirrors		Y	?	N	Y	?
Symbols		Y	Y	Y	Y	?
Signal Panels		Y	Y	Y	Y	?
Gestures		Y	Y	Y	Y	?
		?	?	?	?	?
Fire		Y	Y	?	Y	?
Morse Lamp		Y	Y	Y	Y	?

Y = Yes	? = Maybe	N = No

Night signals are included as a backup even though we assume no night flight ops. ***Be prepared.***

When to Use Non-Radio GTA Signals

Method	Time	First Hear Aircraft	Aircraft Locates You
Smoke		Light smoke fire	Keep fire out of LZ
Mirrors		Flash toward aircraft	**Stop using Mirror**
Symbols		Set out before	Make high contrast
Signal Panels		Set out	Keep out of LZ
Gestures		Too far away	Keep in clear view
			Need flashlights
Fire		Light fires	Keep fire out of LZ
Morse Lamp		Flash toward aircraft	**Stop flashing**

Avoid blinding the pilot when you use a mirror or light to signal the aircraft.

Advisory Note

PLAN YOUR OWN RESCUE

Give emergency authorities a copy of all non-radio GTA signals you plan to use.

The aircrew must know what your signals mean. Do this to make it easier for them to help you.

Many groups and manuals use different GTA signals and gestures for different purposes. We suggest the following GTA signals for GECO villages.

Non-Radio Signaling Method: Smoke

Image from the Internet; educational fair use clause

Green vegetation, oily rags, animal dung, used motor oil or a combination of these can make dense smoke to get attention.

Be careful not to start a fire that becomes a threat to yourself and other survivors.

Making a Smoke Signal Fire

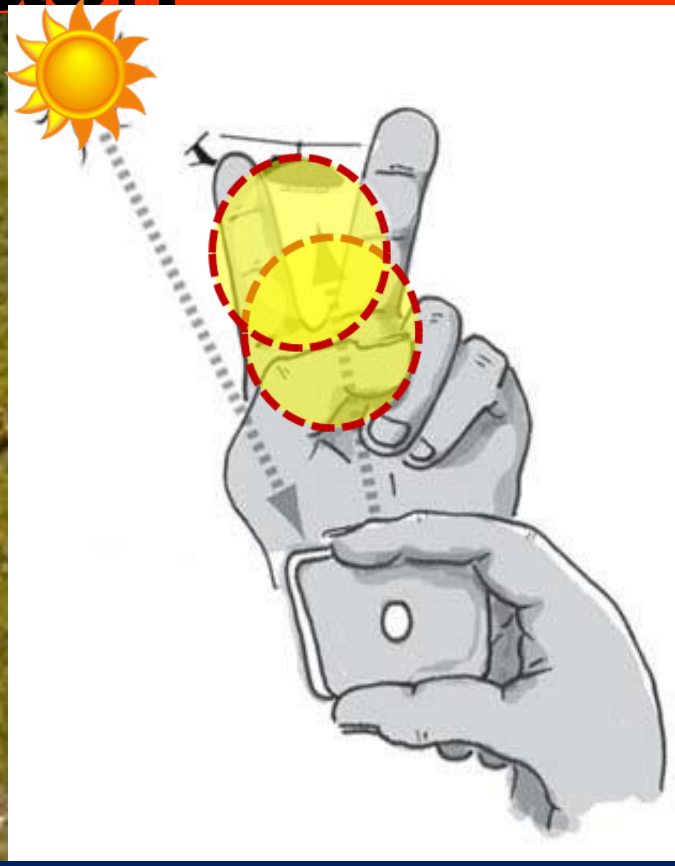
- Big amount of dry tinder
- Green vegetation, oily rags.
- Prepare ahead of time; stay close by; light tinder at first sound of an aircraft

Do not build signal fires within 90-120 m of a helicopter landing zone. Rotor downwash can blow embers and start accidental fires.

Image from the Internet; educational fair use clause

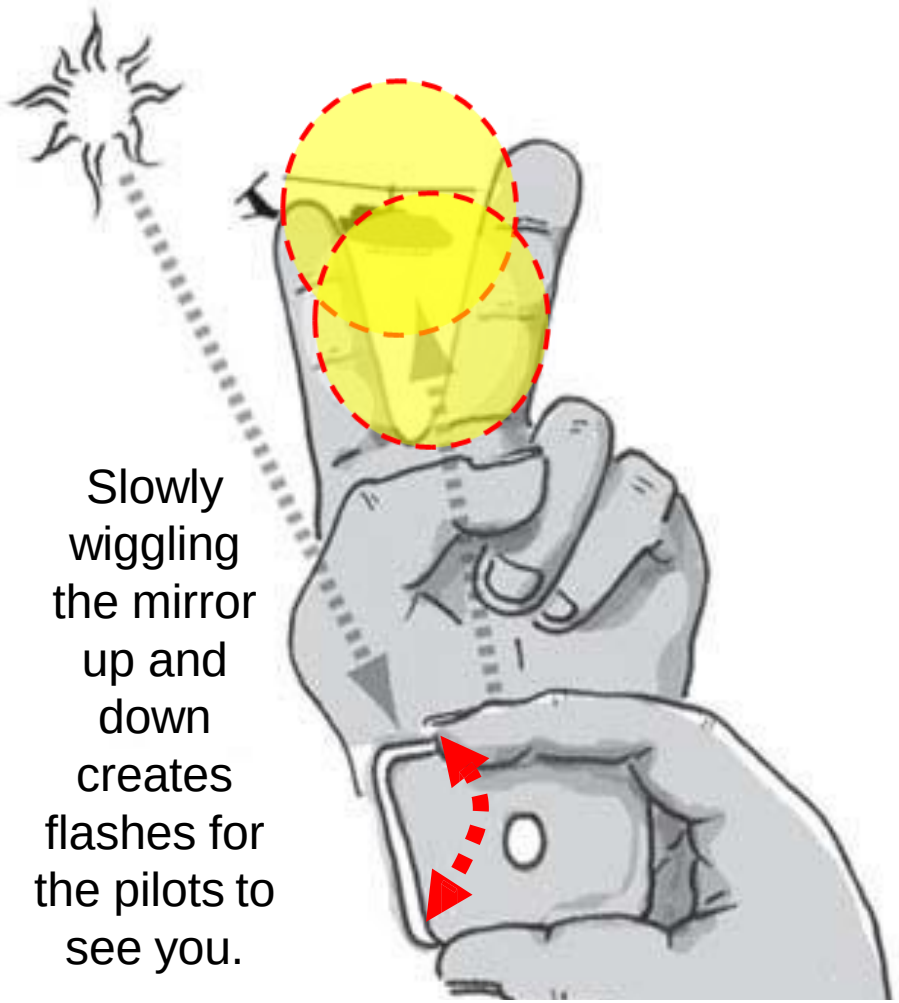
Non-Radio Signaling Method: Mirror Flash

Images from the Internet; educational fair use clause



Use a mirror “flash” to signal an aircraft at a distance; but don’t blind the pilot when they get closer.

Using a Signal Mirror



Slowly wiggling the mirror up and down creates flashes for the pilots to see you.

Be careful not to blind the pilot when the aircraft is closer.

- Hold up one hand; make a "V" with two fingers.
- Sight the aircraft between your fingers.
- Reflect sunlight onto your hand; between the two fingers
- Shift the bright spot of light up and down your fingers aimed at the aircraft.

Image from the Internet; educational fair use clause

Non-Radio Signaling Method: Symbols

Image from the Internet; educational fair use clause

"SOS" is a well-known distress symbol

Making Symbols

A bigger symbol is easier to see from the air.

- Make a large SOS using material in strong contrast to the background.
- The larger the symbol, the more material needed, and the longer to set it up.

Images from the Internet; educational fair use clause

Other Symbols You Can Make

- SOS is an internationally recognized distress symbol.
- Aircrews are trained to recognize other ground symbol codes. You can also try to make the patterns in Signal Panels section to communicate with rescue aircraft.

Get copies of your GTA signals to local and regional emergency authorities so they know what your signals mean.

Non-Radio Signaling Method: Signal Panels

"V" is a signal used by ground search party meaning "need assistance"

Image from the Internet; educational fair use clause

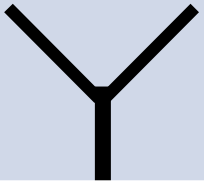
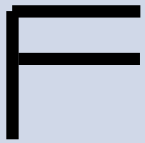
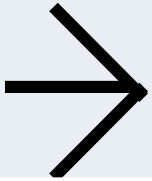
Solid colored, straight panels, in a clearing, with high contrast to the background, set in an angular pattern are eye catching from the air.

Various groups/manuals use similar panel patterns. Avoid confusion. Get a copy of the panel patterns your village will use to the authorities.

Non-Radio Signaling Method: Signal Panels

Welcome
2013-05-30 12:52:59
This size is almost a SIZE of Indian SAE

ITU Survivor Ground-to-Air Signal Panels

Need doctor / serious injuries		Yes	
Need medical supplies		No	
Need food / water		Don't Understand	
Going in this direction		**Each panel is 1 m wide x 6 meters long. A minimum of 4 panels are needed for a set.**	

There are many more panel patterns in various training manuals. Keep it simple and stick to these for GECO.

Advisory Note

There are many signal panel patterns in various training manuals for different groups (e.g. military, search and rescue, survivors, ground search teams, etc.). Some signal patterns are similar or even the same but have different meanings.

Avoid confusion. Keep it simple.
Use these for GECO.
Send a copy to emergency authorities.

Setting Signal Panels

Welcome
2013-07-30 11:15:04
Almost regular SAR EE size

One panel is the "**B**ase" to form signals. The "**I**ndex" panel is the last put down and first removed when changing signals.

Secure all panels to keep the wind from blowing them away

Panel signal area

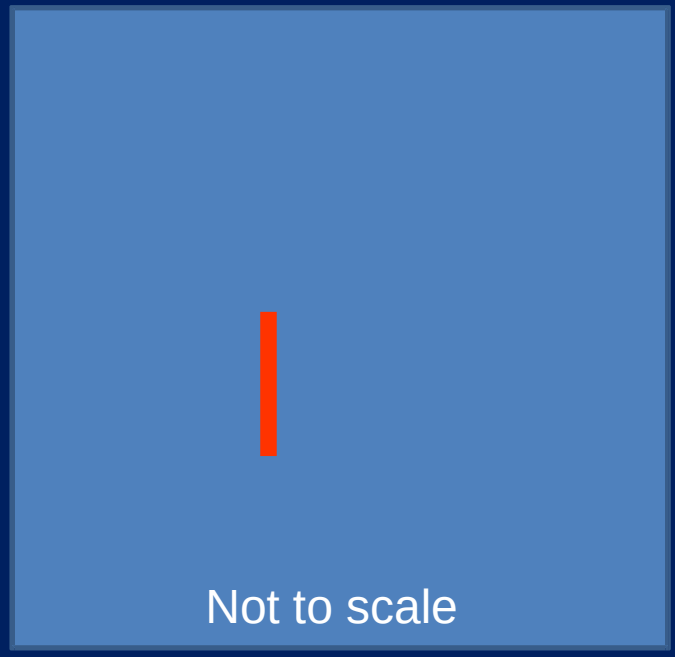
Flat, clear, open, no shadows; 13 m X 30 m; 90-120 m from the LZ / DZ; panels must have strong color contrast against the signal area background.

Panels are 1 m X 6m (minimum). Aset of 4 panels are needed for GECO panel patterns. Spacing is either ½or 1 panel length.

Need doctor / serious injuries

B

If you have a panel display area, place “Base” panel slightly off center; leaving space for adding panels above and to the right.



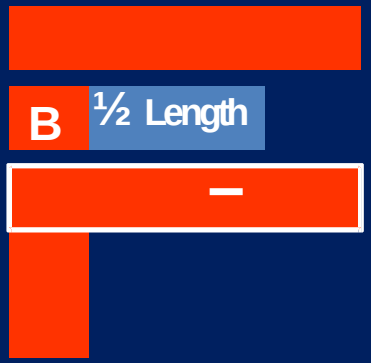
Remember to secure the panels to the ground so the wind or helicopter rotor downwash won’t blow them away.

Need medical supplies

- Place “Base” panel
- Put the “Index” panel parallel to “Base” panel; spaced 1 panel length apart.

Remember to secure the panels to the ground so the wind or helicopter rotor downwash won’t blow them away.

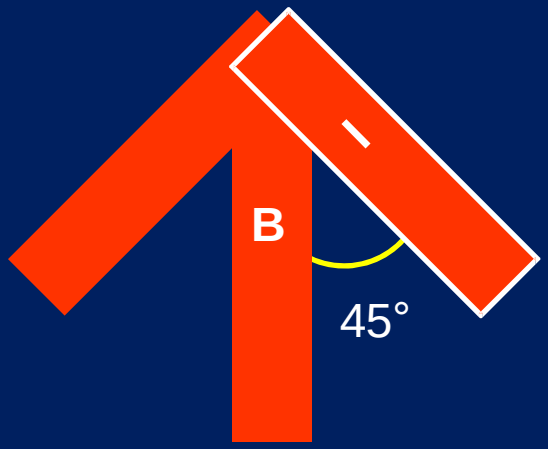
Need Food / Water



- Lay out the "Base" panel
- At the top of the "Base", place a panel at right angles to the "Base" pointing to the right;
- Put the "Index" panel parallel to the second panel ½panel length apart (or less as needed) to form the letter "F".

Remember to secure the panels to the ground so the wind or helicopter rotor downwash won't blow them away.

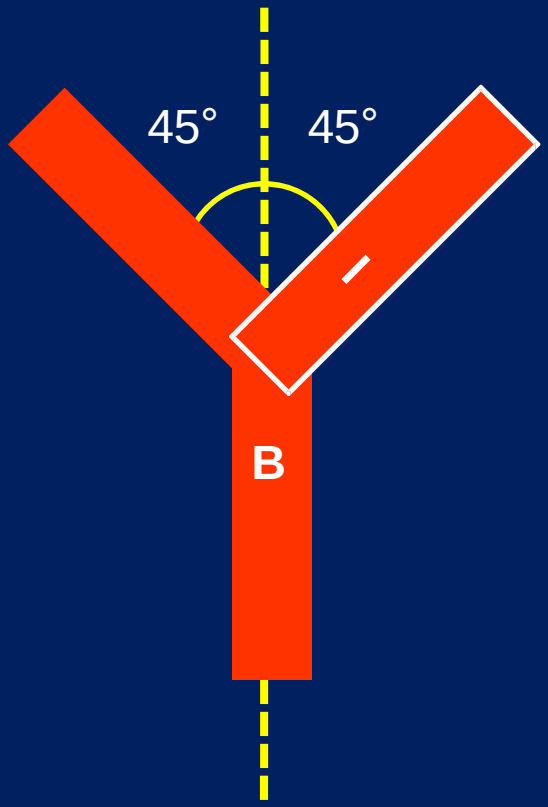
Going this Direction



- Lay the “Base” along the azimuth desired.
- Add 2 panels to the “Base” each rotated 45° to the base to form an arrow pointing in the direction desired.

Remember to secure the panels to the ground so the wind or helicopter rotor downwash won’t blow them away.

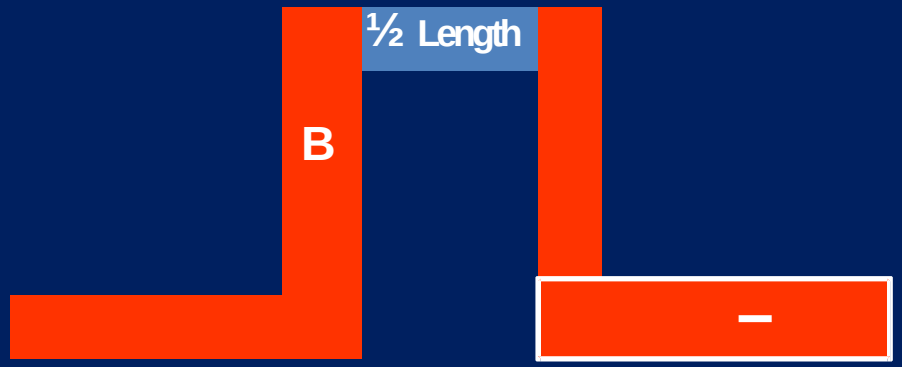
Yes



- Lay out the “Base” panel.
- Extend a guide line beyond the top of the panel.
- Lay out 2 additional panels to form a “Y”.
- Each rotated 45° from the guide line as the arms of the “Y”.

Remember to secure the panels to the ground so the wind or helicopter rotor downwash won’t blow them away.

Don’t Understand



- Lay out the “Base” panel and a second panel parallel to it ½ panel length apart.
- Set a third panel at right angles to the Base, pointing to the left.
- Set the “Index” panel at right angles to the parallel panel; point it to the right.

Remember to secure the panels to the ground so the wind or helicopter rotor downwash won’t blow them away.

Visibility Simulation with VS 17 Signal Panels

The RTC-TH EmComm kit contains a set of four VS 17 military surplus GTA signal panels.

VS 17 panel:
0.5 m Wide x
1.8 m Long

Image from the Internet; educational fair use clause

The VS 17 panel is smaller than the suggested 1 m X 6 m GECO GTA signal panel. The VS 17 panels have high visibility orange on one side and high visibility pink on the other.

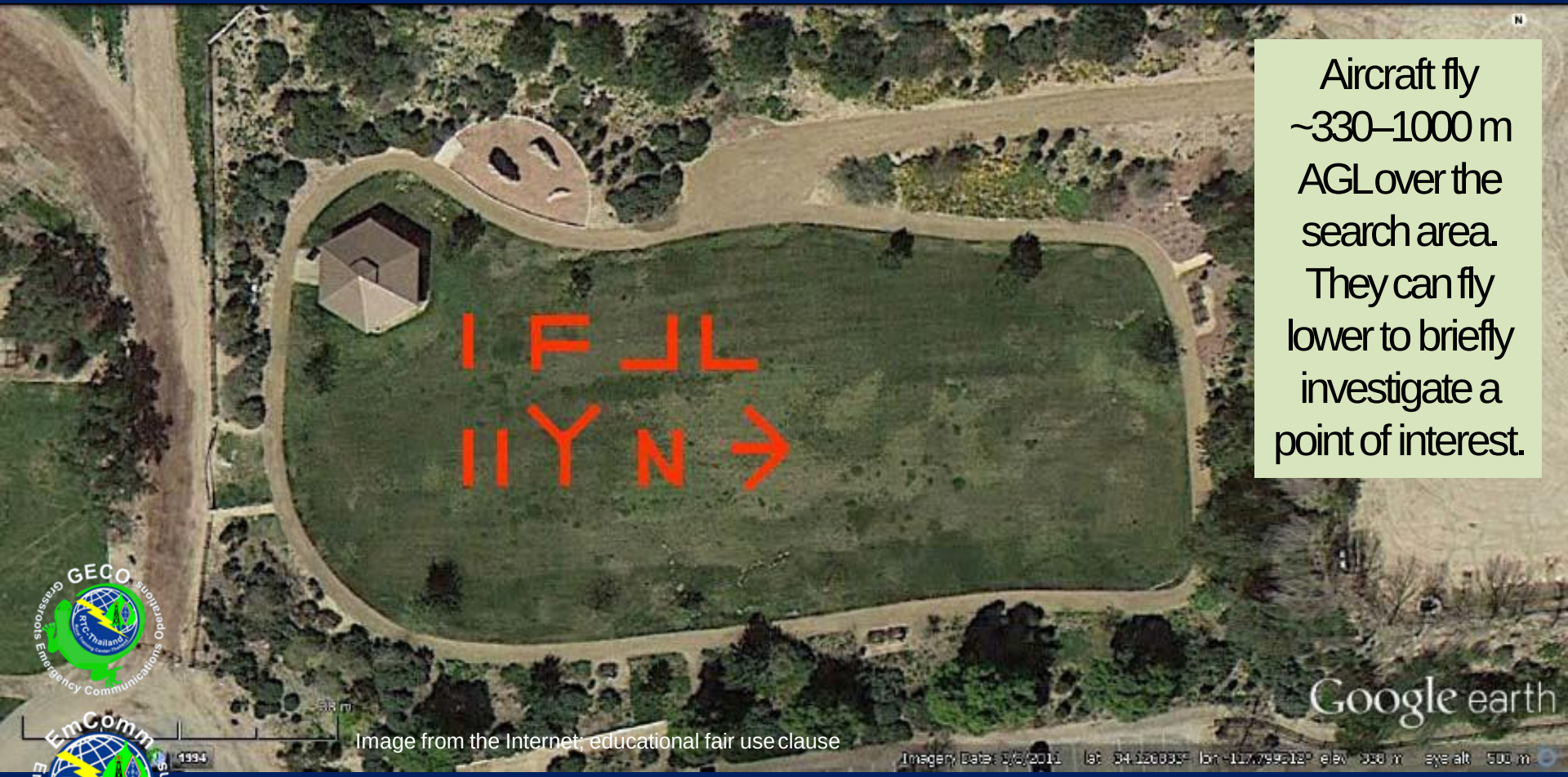
Panel Visibility Computer Simulation

Possible appearance from 1000 m AGL

GTA panels (1m X 6m) were scaled, set in prescribed patterns, and placed on Google earth images selected at estimated air search altitudes.

Panel Visibility Computer Simulation

Possible appearance from 500 m AGL



Aircraft fly ~330–1000 m AGL over the search area. They can fly lower to briefly investigate a point of interest.

Image from the Internet; educational fair use clause

GTA panel patterns were scaled and placed on Google earth images selected at estimated air search altitudes.

Panel Visibility Computer Simulation

Possible appearance from 400 m AGL

The ground image quality deteriorated below 400 m AGL and was not clear enough to continue the simulation.

Aircraft fly ~330–1000 m AGL over the search area. They can fly lower to briefly investigate a point of interest.

Image from the Internet; educational fair use clause

GTA panel patterns were scaled and placed on Google earth images selected at estimated air search altitudes.

Panel Visibility Computer Simulation

This simulation suggests that GTA signal panels strongly contrasting to their background can be readily seen from common range of air search altitudes with clear conditions.

The VS 17 GTA signal panels are about ½ the size of the simulated 1 m x 6 m panel size suggested for GECO.

Making Signal Panels

- Each panel is 1 m wide X 6 m long.
- These panels can be made of locally available fabric.
- Use colors that contrast vividly with the natural background. Consider how they may appear from the air in different seasons.

Consider how seasonal changes in your area affect the color contrast of the GTA panels to the background.

Consider a Signal Panel Display Area

- Flat, clear, open area with no shadows;
- 13 m X 30 m; 90-120 m from the LZ / DZ;
- Surface must have strong color contrast to signal panels

If space is limited, this can be near your LZ / DZ (see Notes #2A / #2B for size requirements).
You must make sure the panels can stay in place under hurricane force winds or remove the signal panels before the helicopter lands or hovers nearby.

Non-Radio Signaling Method: Body Gestures

Certain body gestures are internationally understood ground-to-air signals ***from*** survivors

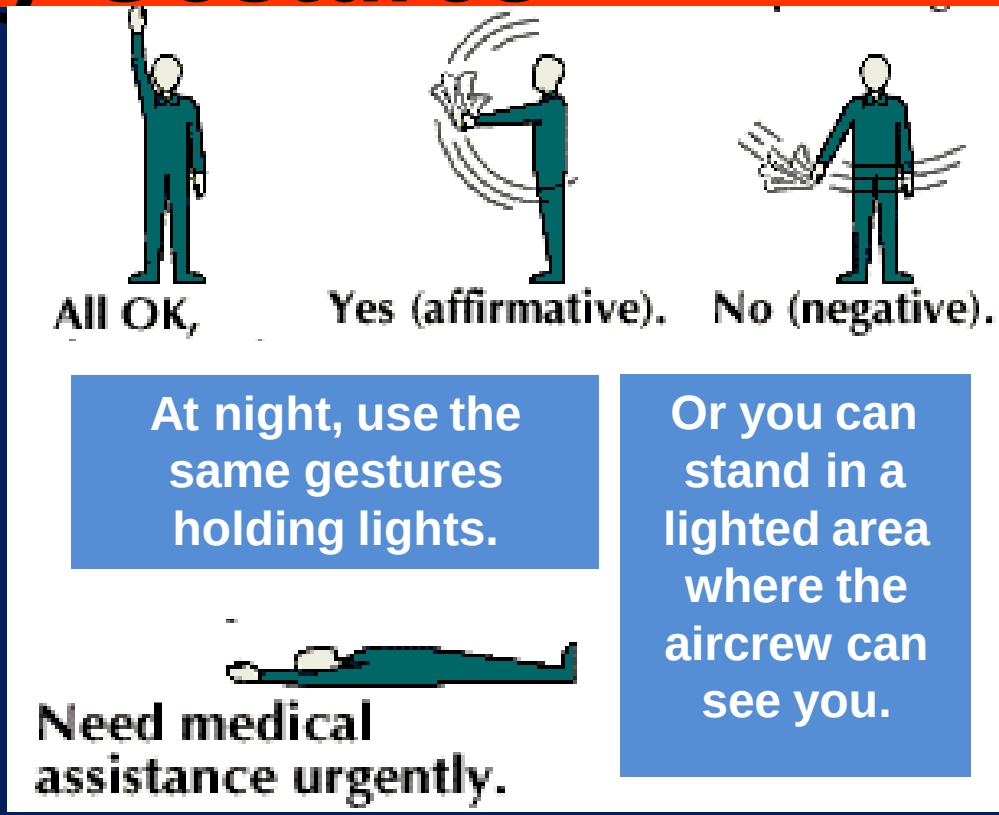


Image from the Internet; educational fair use clause

Various groups/manuals use different gestures. Avoid confusion. Get a copy of the body gestures your village will use to the authorities.

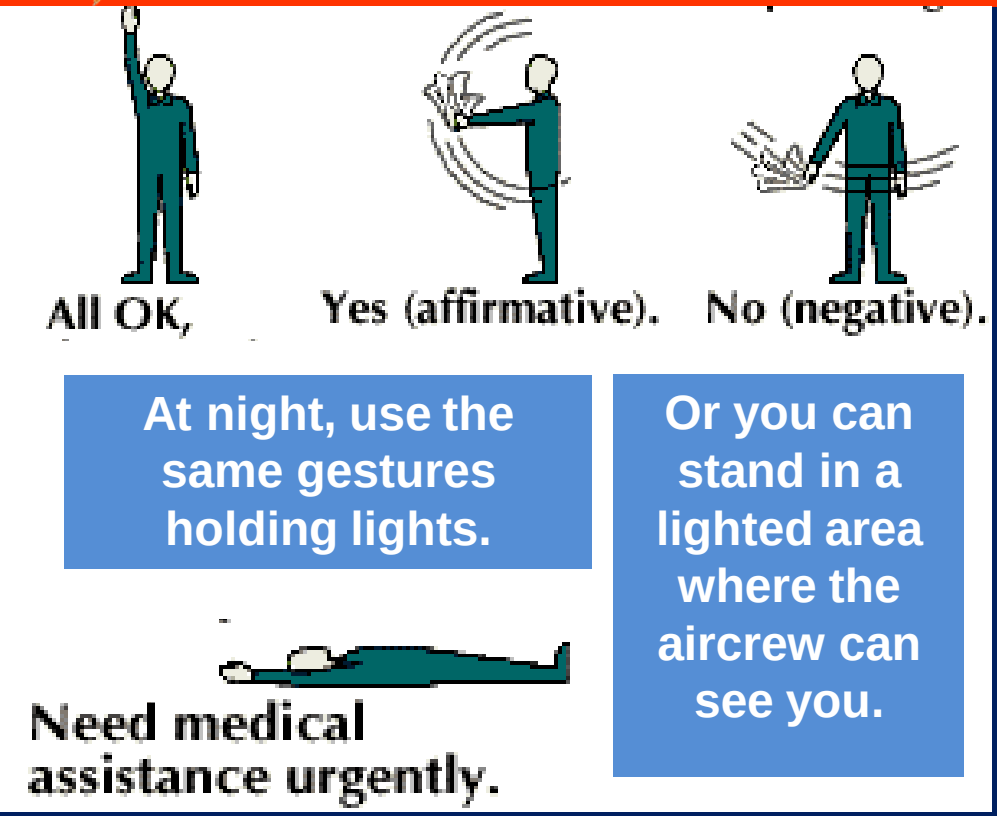
Be Careful When Waving to Helicopters

Teach everyone ***not*** to wave with 2 arms over their head when they see helicopters approaching

This is the signal UNSAFE; DO NOT LAND.
They may turn around and leave you.

Image from the Internet; educational fair use clause; modified for this presentation

Body Gestures



- Get to a clear area where you can be seen against a contrasting background.
- Perform these gestures slowly and deliberately; exaggerate them so they are obvious to the aircrew.

There are many more body gestures in various training manuals. Keep it simple and stick to these for GECO. Be sure to give a copy to emergency authorities. They can use it to brief aircrew as as to what to expect.

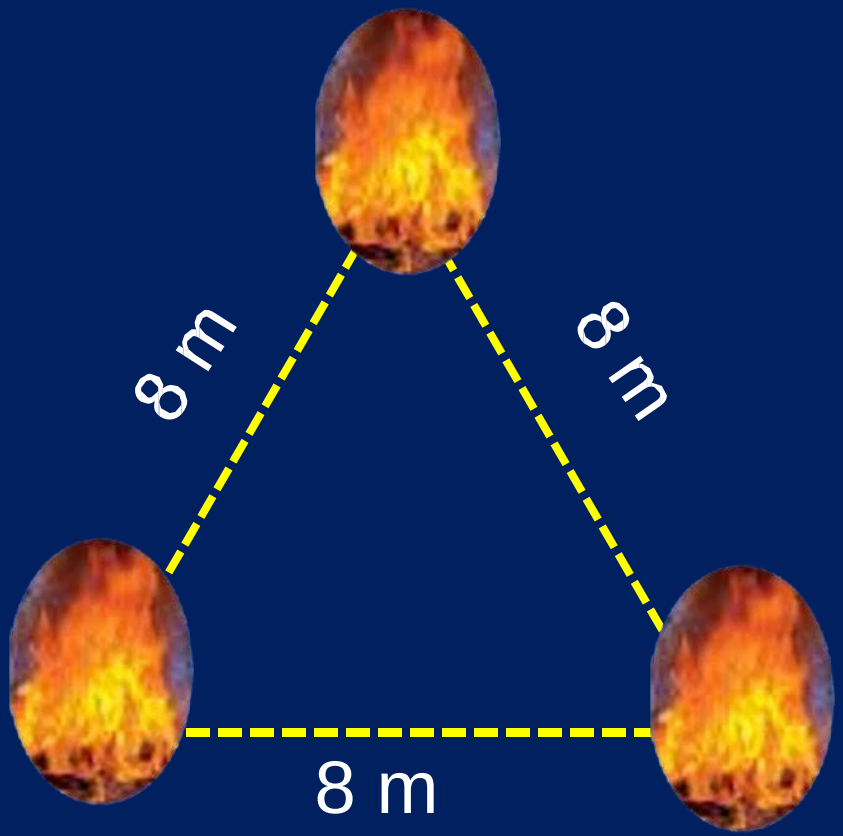
Image from the Internet; educational fair use clause

Advisory Note

There are many body gestures in various training manuals for different groups (e.g. military, vehicle marshalling, equipment operators, aircraft marshalling, survivors, ground search teams, etc.). Some gestures are similar or the same but have different meanings.

Avoid confusion. Keep it simple. Use these for GECO. Give a copy to your local emergency authorities.

Non-Radio Signaling Method: 3 Fires

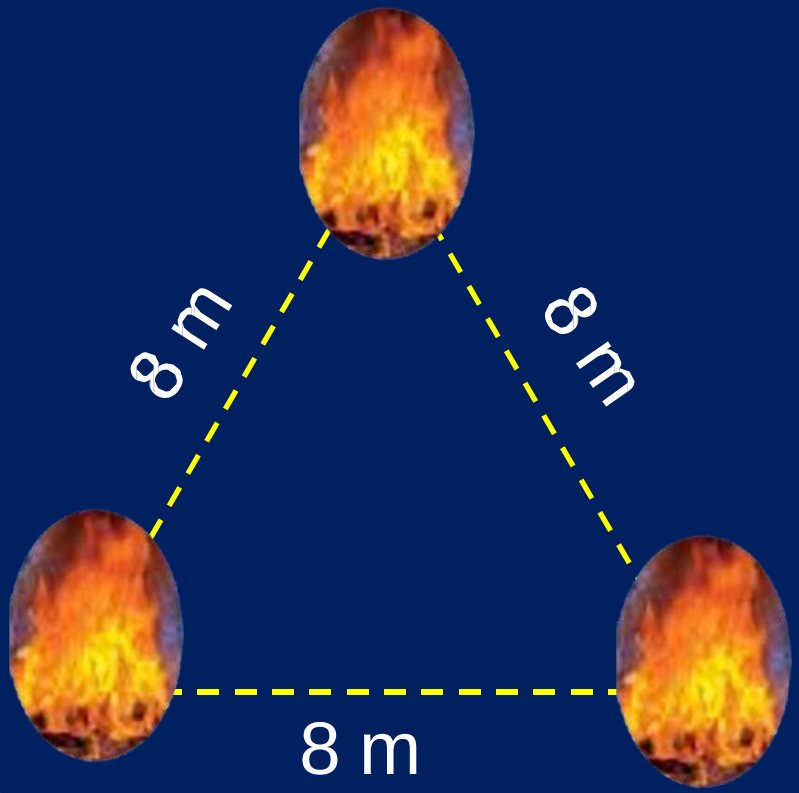


At night, 3 fires spaced 8 m apart in a triangle is an international distress signal

Be careful not to start a fire that becomes a threat to yourself and other survivors.

Flame image from the Internet; educational fair use clause

Making 3 Signal Fires



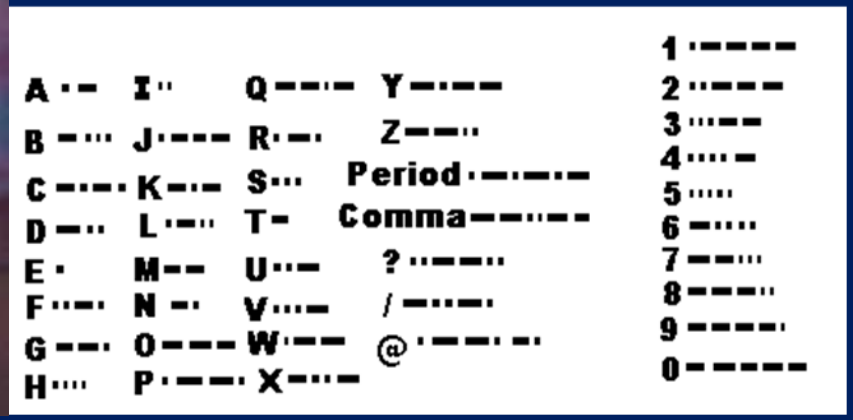
- Make 3 fires the same size laid out in a triangle. Use lots of dry tinder and wood so fires start fast and burn bright.
- The triangle is 8 m per side.
- Do this in a clear area to avoid starting other fires.
- Light fires when first hearing aircraft.
- Have a good wood supply.

Do not build signal fires within 90-120 m of a helicopter landing zone. Rotor downwash can blow embers and start accidental fires.

Non-Radio Signaling Method: Morse Lamp

Images from the Internet; educational fair use clause

Sending "SOS" using a flashlight and Morse code is and effective night signal



Being able to send "SOS" is the key (not sending lengthy messages).

Sending SOS by Morse Lamp

Needed:

- Flashlight
- Spare batteries
- Morse Code Chart

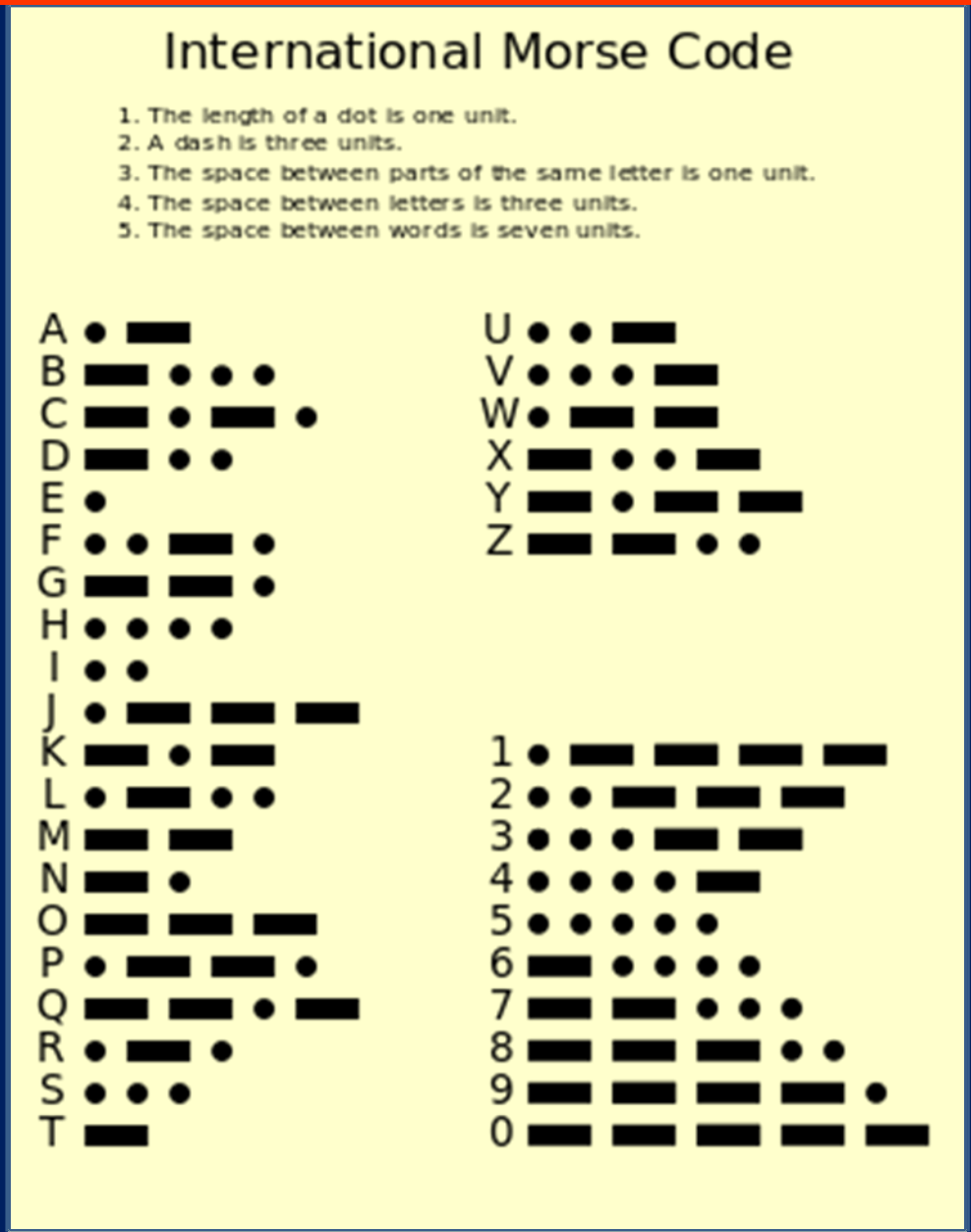
Goal: Practice to send "SOS" by flashlight.

Aim the flashlight at the aircraft. Then send the SOS signal by turning the light on / off. Repeat at 1 minute intervals.

To send SOS using a flashlight, remember a dash is 3 times longer than a dot.

Image from the Internet; educational fair use clause

Teach Morse Code as a Language



Motivated students can learn Morse code as a "foreign" language. They would be better prepared for emergency communications and for getting their ham license.

Image from the Internet; educational fair use clause

1 Making & using these signals can be hands-on lessons in elementary school

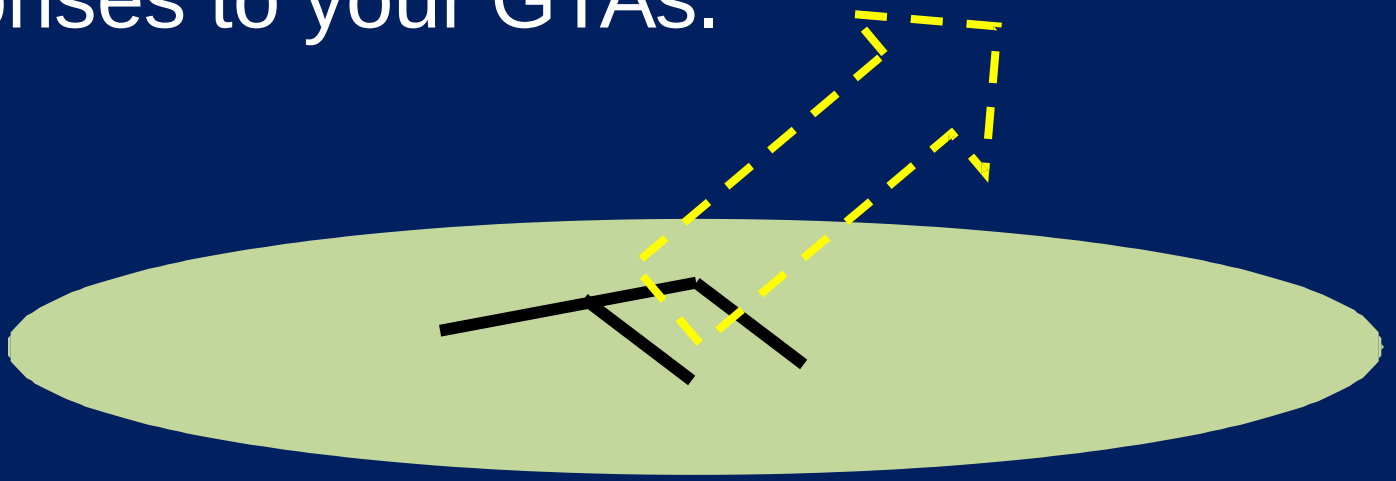
A class community service project integrates many different school subjects as a more practical, holistic learning experience.

Method	Time	Math	Science	Geography	Language	Technology
Smoke		X	X	X	X	X
Mirrors		X	X	X	X	X
Symbols		X	X	X	X	X
Signal Panels		X	X	X	X	X
Gestures		X	X	X	X	X
Fire		X	X	X	X	X
Morse Lamp		X	X	X	X	X

Students make GTA signal kits as a lesson and as community service projects. The lesson could be bilingual to help improve English education in rural areas.

Communication involves a Sender and a Receiver

So far, we have talked about sending a message from the ground-to-air. Here are some aircraft responses to your GTAs.



Helicopter image from the Internet; educational fair use clause

Aircraft Responses to GTAs

During daylight, helicopters may be low enough for aircrews to gesture to you or drop a message.

Watch the aircrew for signals; the pilot is busy flying.

Some Information about helicopter pilots

Did you know that unlike a fixed wing pilot, a helicopter pilot:

- needs both hands to fly the helicopter.
- can sit on either the right or left hand seat (depending on the helicopter design).

This is why you must watch carefully to see which crew member might signal you.

Possible Aircraft Responses to Your GTA Signals

During daylight, helicopters may be low enough for aircrews to gesture to you or drop a message.

These are ("unofficial") common familiar hand signals that may be used.

Watch the aircrew for signals; the pilot is busy flying.

Images from the Internet; educational fair use clause

Possible Aircraft Responses to Your GTA Signals

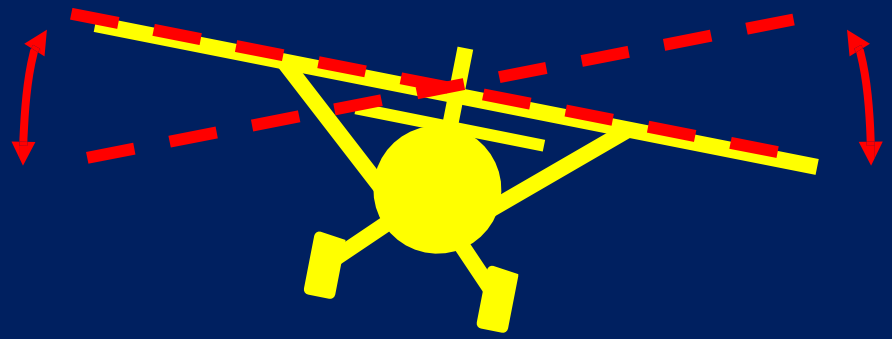
An air dropped message has a colored streamer for higher visibility.

Depending on the message, it may be possible to respond by GTA signal panels or body gestures.

Images from the Internet; educational fair use clause

Fixed Wing Aircraft Responses to GTAs

Although we expect helicopters in relief operations, fixed wing aircraft can be used in air searches as well.



Signal Received; Understood

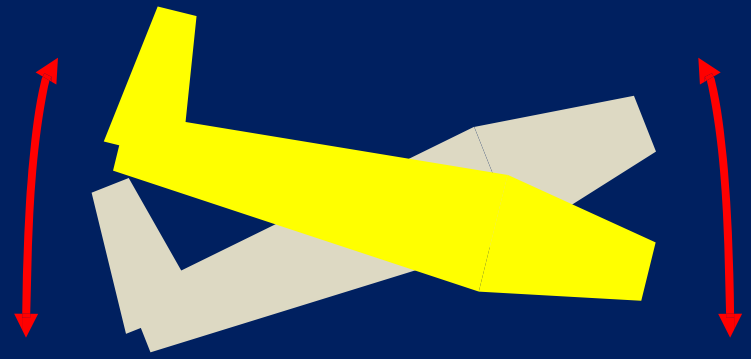
Pilot rocks wings up and down.

Signal Received; Not Understood

Pilot turns the plane in a full circle to the right

Fixed Wing Aircraft Responses to GTAs

Although we expect helicopters in relief operations, fixed wing aircraft can be used in air searches as well.



Yes

Pilot dips plane up and down.

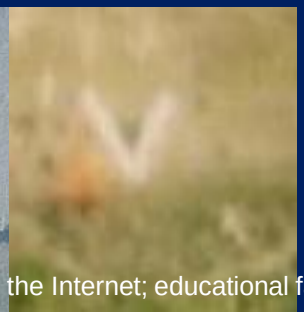
No

Pilot skids plane left and right

GECO 2 includes GECO 1

The non-radio EmComm GTA signals in GECO 1 are back-up for all higher GECO levels. GECO embraces a range of tools for EmComm. ***Be prepared!***

GECO 1	GECO 2
	Basic MEWS & CB Radio
Students teach villagers and practice using non-radio GTA signals.	
Elementary schools apply classroom lessons to make and use non-radio GTA signals as a community service project.	



Images from the Internet; educational fair use clause

GECO 2 Components

Making weather observations using Basic MEWS

Using CB radios for EmComm

Plan your own rescue.

Give a copy of your village emergency plan to your local and regional emergency authorities. In addition to the information in the GECO 1 level plan, include CB radio frequencies and list of GECO 1 and GECO 2 stations in your network.

Image from the Internet; educational fair use clause

2

MEWS: for weather reports *FROM* the disaster area

Pilots must see the ground to fly safely. With no nearby weather station, MEWS reports *from* villages can improve relief operation planning and flight safety.

Image from the Internet; educational fair use clause

See Note #5 after the end of this presentation to learn more about MEWS lessons.

GECO 2 Uses CB Radios for Emergency Communications

VU2NXM
Basappa
Arabole

RE: 2013 Uttarakhand Emergency

"It would have been best for the people if there would have been some CB Radios (for which frequency is delicensed). I feel every village should have a CB Radio at their Gram Panchayat. During such SOS only wireless communication is the best."

From: http://vu2nxm-basappa.blogspot.com/

CB Radio Requires Less Training than Ham Radio

For poor rural villagers, a CB radio is easier to get and to use.

Item	CB	Ham
Class time	6 hrs	17-19 wks(?)
Fees / License	None	2000-3500 Rs
License Exam	None	Yes
License Processing	None	9-15 months (?)

Duration of Ham classes varies. Check with your local Ham friend.

Suggested Basic CB Station Kit

GECO 2 stations with LZs need to upgrade to GECO 3 status

CB radio

Spare battery and 12 VDC power adapter for off-grid use

Battery

Sources of radio equipment, see Note #6 after the end of this presentation.

Battery charging: Off-grid, main and back-up system. See Note #7 after the end of this presentation.

Images from the Internet; educational fair use clause

2

Remember these words?

"Interdependence is and ought to be as much the ideal of man as self-sufficiency. Man is a social being."

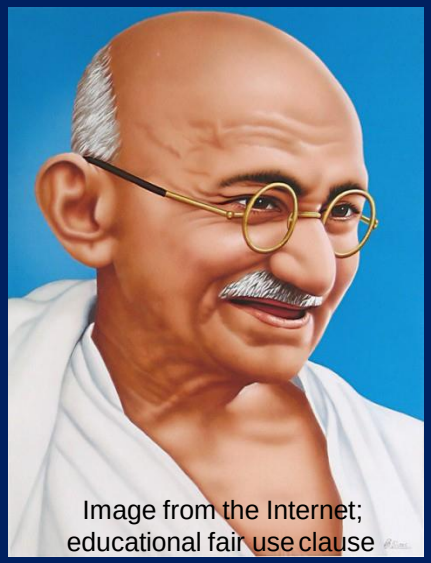
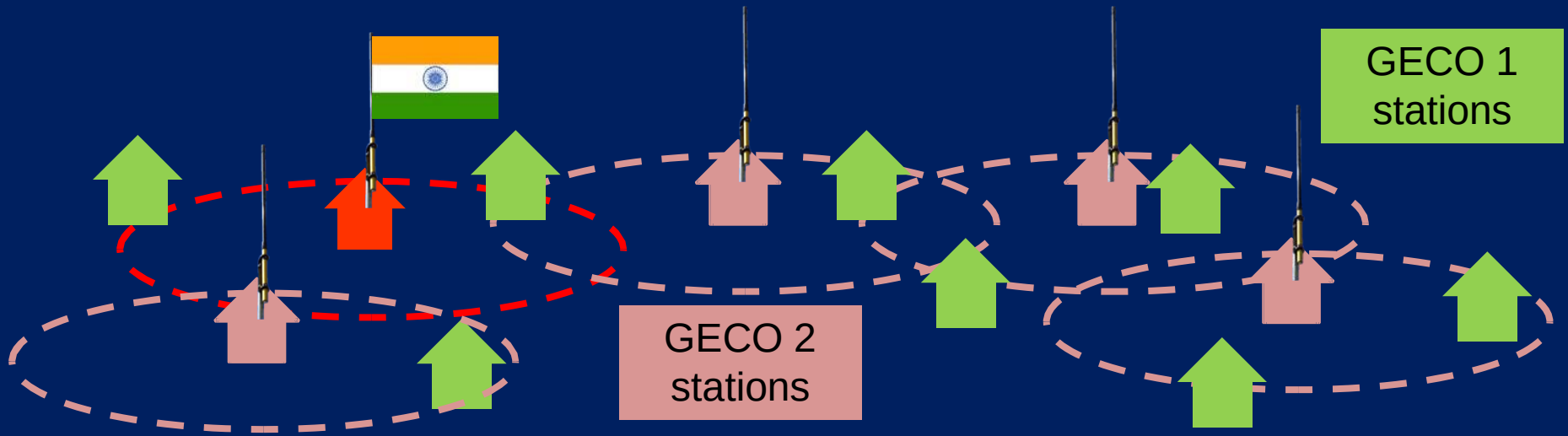


Image from the Internet; educational fair use clause

It is better to network than to NOT work.

This is how we can put these words into action.

Yes, CB range and power are more Limited than ham radio



Forming relay nets of neighboring villages can create a CB radio link to a government office to overcome this limitation. Runners can connect GECO 1 stations to GECO 2 stations.

See Note #8 Operating & Follow-on suggestions after the end of this presentation.

If a GECO 2 has an LZ / DZ: GTA Radio Communications

This may not be the best solution; but it might cost less than getting aircraft GTA compatible radios to the villages.

Image from the Internet; educational fair use clause

We Need Your Help To Brainstorm

We don't have all the answers, but we have a vision and some ideas for equipment donations, volunteers, and distribution.

We invite you to brainstorm with us to make Next Gen EmComm: GECO happen.

See some suggestions for a these topics in Notes #6-9 after the end of this presentation.

Images from the Internet; educational fair use clause

GECO 3 includes GECO 1 & 2

Next Gen EmComm: GECO is an fully integrated multi-level system. It is based on education and community service to empower rural villages for emergency communications.

GECO 1	GECO 2	GECO 3
		Ham Radio
	CB radio	
Students teach villagers and practice using non-radio GTA signals.		
Elementary schools apply classroom lessons to make and use non-radio GTA signals as a community service village project.		

GECO 3 Components

Using CB radio for EmComm

Using ham radio for EmComm

Plan your own rescue.

Give a copy of your village emergency plan to your local and regional emergency authorities. In addition to the information in the GECO 1 level plan, include radio frequencies and list of GECO 1 and GECO 2 stations in your network.

Images from the Internet; educational fair use clause

GECO 3 Uses CB & Ham Radio

Photo courtesy of VU2NXM

Ham radio requires a licensed operator.
Ham radio generally has more range than CB.
Terrain and atmospheric conditions affect all radios.

Suggested Basic GECO 3 Ham Station Kit

In addition to a CB radio

GECO 3 stations with LZs need to use mobile units not HTs

Ham radio

Antenna

GECO 3 stations must be in radio contact with GECO 2 stations

Battery

Sources of radio equipment, see Note #6 after the end of this presentation.

Battery charging: Off-grid, main and back-up system. See Note #7 after the end of this presentation.

GECO 3 Sources for Equipment & Training / Resource Distribution

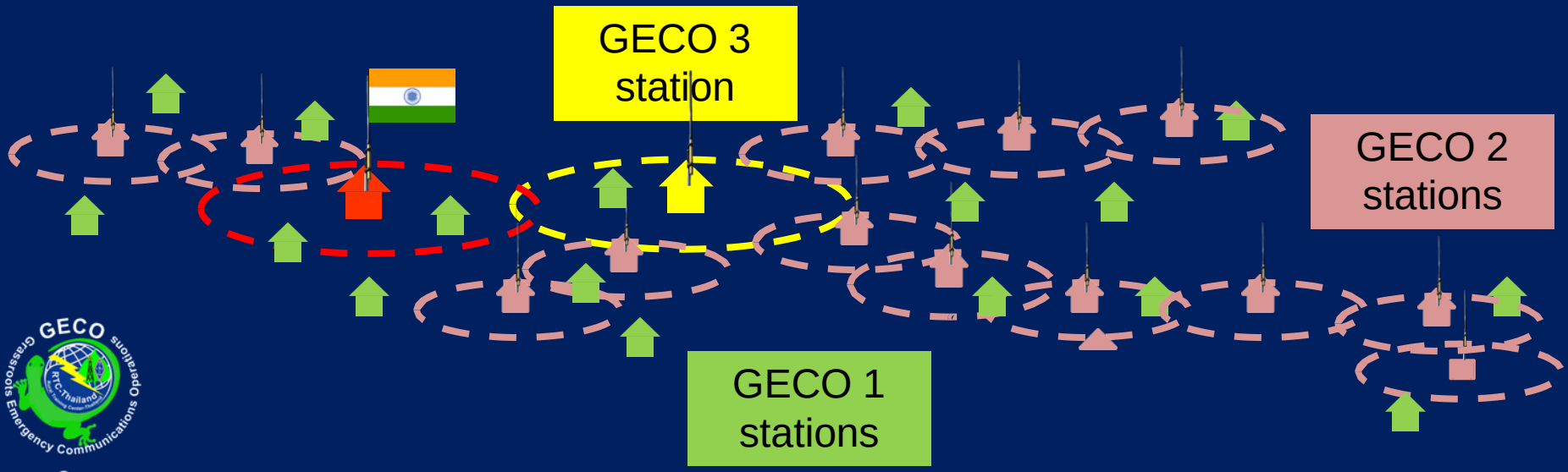
Remember, "It is better to network than to NOT work."

All GECO stations should form mutual support networks for emergency communications

See some suggestions for donation sources and a distribution strategy in Note #6-9 after the end of this presentation.

A GECO 3 station is a radio hub for GECO 2 stations

Ideally a GECO 3 station can receive CB traffic from nearby GECO 2 radio nets and relay them by ham radio to emergency authorities.



GECO 1 stations may connect with GECO 2 stations by runner.

See Note #8 Operating & Follow-on suggestions after the end of this presentation.

If a GECO 3 has an LZ / DZ: GTA Radio Communications

Direct GTA radio contact between the LZ / DZ and aircraft is best. Normally CB or ham and aircraft radios cannot contact each other. It may be easier to put a CB or ham radio aboard the aircraft.

This may not be the best solution; but it might cost less than getting aircraft GTA compatible radios to the villages.

Image from the Internet; educational fair use clause

Suggested GECO Radio Additional Guidelines

- GECO 3 stations follow similar guidelines to GECO 2 stations. (See Note #8 after end of the presentation)
- They use both CB & ham radios
- They need more battery power; operating duty cycles may be longer because GECO 3 stations could be communications hubs for one or more GECO 2 nets.

Adjust the power needs based on the anticipated greater duty cycles for a GECO 3 station.

Suggested GECO Radio Additional Guidelines

- GECO 3 stations are the key link to a government office, so they may have other duties and required training
- GECO radio stations need to be self-regulating regarding proper radio use
- GECO 3 stations hold a monthly net linking GECO 2 stations with a government center.

All GECO 2 & 3 stations participate in Nets to maintain proficiency and assure radios are in working order.

Added benefits of GECO 2 & 3 Stations

Monitor / report

- traveler safety between radio equipped villages
- road and trail conditions between villages
- pass non-emergency Health / Welfare messages between villages
- weather information between villages

Hoping for a Ham Harvest

How many rural villagers might become hams due to Next Gen EmComm: GECO?

At this point, it is pure speculation.
We like to think the odds are in our favor.

- They are vulnerable;
- They are at high risk for natural disasters;
- They have fewer communication options;
- The youth may be inspired to self-select to serve their village by getting a ham license.

Preparing for the Future

Experts predict more extreme weather and more frequent major calamities.

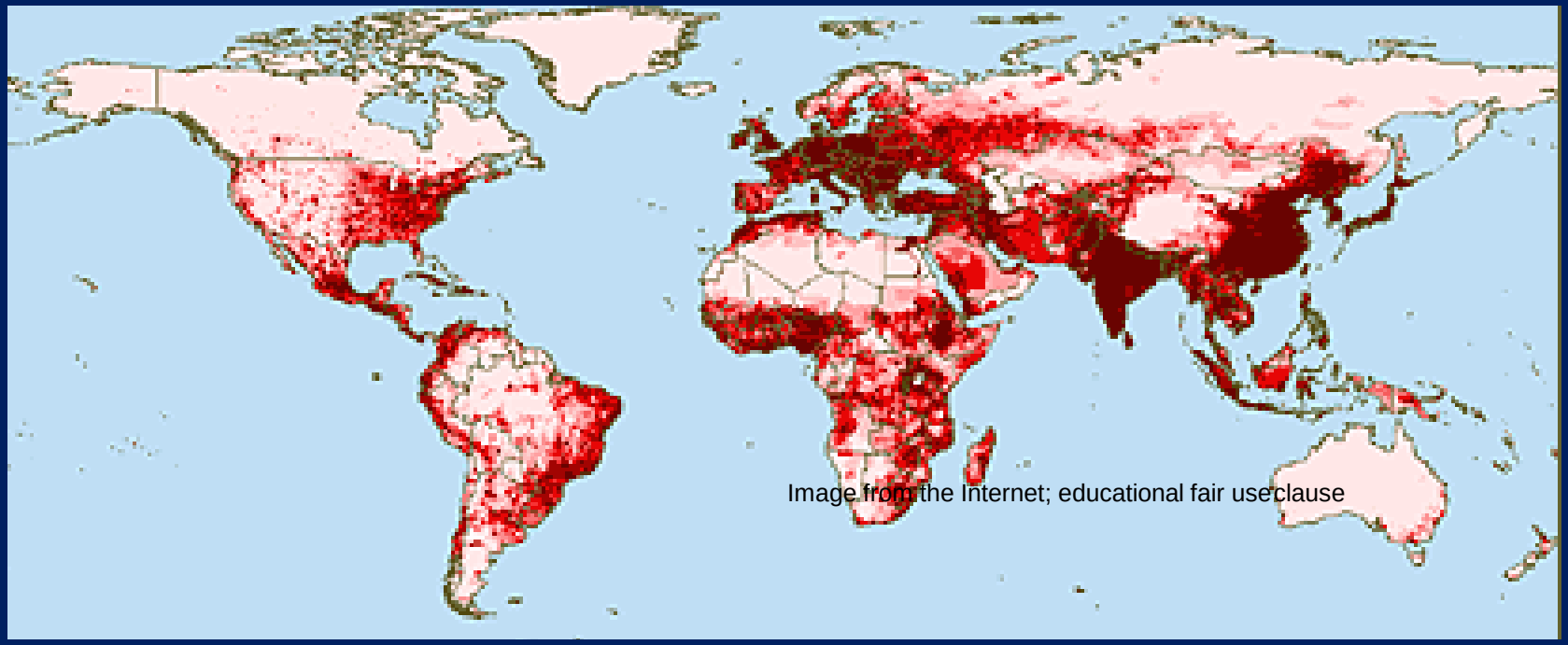


Image from the Internet; educational fair use clause

Population densities are high in South and Southeast Asia. The impoverished people may be very hard hit.

Creating New Rural Opportunities

Next Gen EmComm: GECO creates new opportunities for remote rural villages.

- Practical integrated lessons boost rural education quality (See Note #11 after the end of this presentation.)
- Rural villagers are introduced to CB and ham radio
- Villagers and volunteers make new friends, learn more about their country and citizens
- Villagers are better prepared for disasters

Hoping for Success

Next Gen EmComm: GECO is not guaranteed to succeed.
But if we never try, we certainly cannot hope to succeed.

Think much;
say little;
do more!

Striving to Help the Government Help Us

Next Gen EmComm: GECO is not saying government emergency services are inadequate.

Photo courtesy of VU2NXM

Next Gen EmComm: GECO empowers the people take a more active role in their own rescue.

Next Gen EmComm: GECO Challenge

There you have it.

The ball is now in your court.

The choice is yours.

You can now

A) think about it;

B) talk about it;

C) do nothing;

D) take action, adapt, and do it!

Questions or Comments

We are always trying to improve our presentations. Your constructive comments and suggestions are welcomed.

You may contact us by e-mail:

basappaji@yahoo.co.in
hs0zhm@gmail.com

Please tell us how you heard about us and which lessons are of interest to you.

For More Information about RTC-TH EmComm Lessons

Contact

Greg Lee

RTC-TH Co-founder

Author / Mentor

Geography Professor Emeritus

Via E-mail

hs0zhm@gmail.com

Via Skype video conference call: rtc_th

Lesson Archives: www.neighborhoodlink.com/RTC-TH_Tech/pages

FFI: Other ***free*** RTC-TH lessons see Note #12 after the end of this presentation.

Thanks to Hamfest India 2013

We thank Hamfest India 2013 and Jayu VU2JAU for interest in our ideas and for allowing us a venue to present them to other hams.

VU2NXM
Basappa Arabole

HS0ZHM
Greg Lee