The PARANOID Newsletter

Because they ARE out to get you.

"The Yanks have put spectacles on rifles. There isn't no way to avoid a bullet from a mile away."
- Letter from a Confederate camp, 1864:

Introduction

This is the seventh issue of the PARANOID newsletter. This newsletter is for the person who takes their privacy VERY seriously. Lets face it, America is a POLICE STATE. Anything the government doesn't like is now considered terrorism. What would our founding father say if they were alive today! This seventh edition of the paranoid newsletter covers Thermal vision capabilities and methods of defeating FLIR.

Attention: Law enforcement officers in the US frequently have one patrol unit on duty with a FLIR camera.

Snipers guide to dealing with FLIR equipped adversaries.

As an electrical utility thermographer, I might shed some light (pun intended) on the subject. To qualify this, I am using the latest (I think) commercially available FLIR product, and am a level II thermographer, (total formal IR training: 2 weeks-experience using IR equipment: about 5 years.) I believe I am at least familiar with IR. Granted, my life is not depending on avoiding IR detection, so I guess I can have my opinions pretty safely. These are my observations about IR imagers using civilian equipment and are.. "just my opinion". It's up to you and yours to check them out in your world.

This is WAY brief, believe it or not. Anyone interested can email for more. This is about THERMAL detection, not IR illuminating sources for "starlight" scopes. IR is not Xray, Hollywood be damned-it cannot detect a differential heat image through common solid materials, plastic film (black or otherwise) being an exception. However, a good imager system can see through holes in a masking material ("IR masking" camo net). If you are inside a dumpster, body heating the bad guy's side, he can "see" the hot spot on the dumpster's outside. But if you are not leaning (heating) against that side, he can't "see you". Your body heat will not be detected behind most readily available unholed blinding materials if you are not differentially warming/cooling those materials or allowing your own IR to reflect off of something behind/over you. BUT, if the shielding materials are alien to the surroundings, the material itself will probably stand out.

Glass will not allow your THERMAL image to transmit (pass) through; same as the dumpster scenario. The lenses of IR imagers are made of exotic nonglass materials because of this. Every piece (cluster) of matter, including gasses, emits IR if it is above Absolute Zero (minus 459.69 degrees F). The warmer a body gets, the more IR it will emit. Eventually it will enter the visible spectrum as it gets "red hot". The surface of a piece of matter is where IR is emitted. Altering an object's surface will alter the rate at which IR is emitted. Stoveblack is a classic example. Materials physically different from each other will likely emit IR at different rates. BUT the differences may be very slight.

IR imaging (read DETECTION) depends upon two objects having one or more differences in Temperature, Emissivity/Reflectivity, and Absorption of the compared objects. For this application, we can forget about Absorption, and you should all understand Temperature. Now, E + R = 100%, thus the more emissive a surface is, the less reflective. If two dissimilar objects are at the same temperature, a high E will "look" hotter to an IR imager than a low E, thus forming an image. Objects with different Temperatures and the right E's could "look" the same, thus forming NO image. Two objects with similar temperatures and similar emissivities will present an unclear, poorly defined image. Herein lies your IR strength.

Here are some Emissivity values for a few materials, all in percents, all plus/minus a point or two. These are for short wavelength commercial imagers and may vary slightly for long wavelength/long range military/LE equipment. Military techies should have similar emissivity tables for your equipment.

Human skin : 97
Black vinyl electrical tape : 97
Surface sprayed with Dr. Scholl's aerosol foot powder : 96
Water : 95
Rubber, black, hard : 94
Glass, smooth : 94
Plywood, raw lumber : 90-95
Most painted surfaces (NON aluminum paint) : 90-95
Aluminum based paints, depending on formula : 30-50
Oxidized (blued, parkerized) steel : around 90
Snow : 82-85
"Most" organics (vegetation) : around 80
Cotton loth, untreated : around 80
Sand : 76
Clay : 40
Gravel : 38
Aluminum, bare and "shiny" (read "spaceblanket") : under 10

Note the materials that cluster around 95, 80, 40, and 10

Now, to apply IR-101: In all of the scenarios below, remember that your body (or ANYTHING above absolute zero) emits IR in ALL directions. If there is a reflective object behind or beside you, it will pick up your IR and reflect it like you were a light bulb. Whichever situation and methods you use, if you have the opportunity, have an ally check you out from a flank with your best IR detection equipment. Or get the flyboys to check you out with FLIR's namesake. Do this by day AND night, as the sun will do weird (but predictable) things to the differential temps.

The BEST way to protect yourself from IR detection is get behind/under what is already there, and DON'T change the temperature of it. Since you obviously have to see and perhaps reach out, do so through the smallest portal(s) you can handle. Those "man-sized" targets detectable at 1100 yards are just that - man-sized - not the size of your nose and right eye. Remember that glass reflects some IR (100 - 94 = 6%), and the sky (space) is cold (approaching Absolute Zero), so if your scope is reflecting not sun, but sky, it will look COLD. If you have on a scope sunshade that is hot, the internal IR of the sunshade will reflect out as HOT.

I believe the New ACU BDU's are treated with an IR emittance reducer. If so, the "cloth" E figure in the table will change and you have to adjust for the following discussion. Or obtain untreated camo fabric or defeat that treatment (starch, I believe). The IR reducing treatment makes sense for a situation where the woods is cooler than 98.6 F. I hope the Desert Daylight BDU's are NOT treated, but the nighttime anti-starlight smocks probably should be. If your BDU's image "cold" against hot sand, you are just as "seen". I trust the techies were aware of this, and have specified correctly. But you need to confirm by looking through your equipment at your buddy against some typical backgrounds.

It has been reported that "fresh" BDU's do indeed have an IR treatment that fatigues (pun) with laundering in "brightener" detergents. As a hunter, I am aware of the UV problem with animals with good night vision (is it an overabundance of rods, or cones, in the eye?) and there are detergents available via sporting goods stores that do not contain brighteners. If you need to maintain that BDU treatment, you might try that. But again, look at your buddies with your equipment.

Now, in sand or vegetation (E = 76-80): If you HAVE to have artificial cover for situations where your clothing will approximate the temperature of the surroundings, you want to expose matching temperature "stuff" with a similar E (around 80). Cover as much of your skin (97) as possible with cloth (80) (remember that I don't know the E for treated BDU's). But also remember that sweaty cloth in a hot, dry background might look cold due to evaporative cooling. If you are in a hot dry situation, a tented, solid (not net), dry camo fabric applied as a screen might do the trick for IR. (Remember, same T, similar E). Visual is another problem. Keep the outlines irregular for both IR and visual. Square stuff in a curvy world stands out, no matter the technology. Fresh local vegetation in front of the screen will help both.

Camo face paint is PROBABLY a high emitter, similar to regular paints (90-95), and sweat (water-95) is for sure. You really have to keep that face behind something. I don't know what a synthetic ski mask would have for an E, but I bet it is below 97. A plain old cotton tee shirt mask would work, but remember the wet/dry/cooling problem. Black ANYTHING is a good emitter. Blackened steel barrels, synthetic stocks, and painted surfaces (all E's in the 90's) should be cloth wrapped for IR and visual both. Black SWAT uniforms probably have a higher E than camo. You need to test.

Dry rubber boot soles (94) are nearly as hot as your face - sock 'em (80). Old cut local vegetation will be drier, thus HOTTER due to lack of evaporation. The name of this game is to keep both the Emissivity and the Temperature of the screen and clothing the same as that of the surroundings and keep those portals small. If you are on bare clay or gravel (38-40) and are worried about aerial observation, dig in. Cover yourself with almost anything sufficiently rigid and then cover it with at least a thin but full layer of the local "dirt". This will match the E's. Once the moisture of the new cover layer equals the moisture of the surface around you (evaporative cooling), you will be in decent shape IR wise.

Remember that these low E materials have a high Reflectivity, so block your own IR from getting out from under the cover. If there is a chance your body heat will affect the top surface of the dirt cover, use insulating material between you and the bottom of the "roof" to keep it the same temp as the ground around you. Foam board or sleeping bags will do that. The most critical times of day for this hide would be as the sun changes, because rapid heating/cooling of a thin layer of dirt will show up compared to the slower heating/cooling of the intact soil masses. If you can set up in a shaded spot where this will not occur, you should be in decent shape. If there is no shade, make the cover layer thick to create a heat sink approaching that of the surroundings.

If there is no threat of aerial observation, and it is only a frontal threat, a "wall" of local dirt with small portals would be the best bet. Any new foxhole will print either hot or cold depending on the season and surface temperature, even if the surrounding soil is bare. The deeper soil temp is probably closer to 55 F than the surface. On snow (82-85), build a snow fort or tunnel in and make small portals. Try to dust loose snow to duplicate surface texture. Pray for new snow. If you wore an aluminized face shield behind that snow fort, it would reflect the "cold" off of the fort, and cover your hot face. This might be a shiny side application of the space blanket, and could be worth testing.

Water (95) is your breath when it condenses. And it is warmer than the snow. Only thing I can think of to do here is breath through a ski mask and let it condense before it fogs up over your screen. As to **"space blanket"** applications: there might be some, BUT. If you are using the shiny side toward you to keep your IR from getting out, remember that the backside of it is probably not a good E match to the surroundings and it will heat/cool a lot differently than most natural things around you. If you are trying to put the shiny side out angled down to reflect the IR of the terrain right in front of you, there would be a 10% reduction in the reflection, more if it casts a shadow. If the shiny side is out and up, it will reflect the cold of outer space (or the heat of the sun) - and it is going to look REALLY weird to visual and starlight in EITHER case! I cannot think of a space blanket application that I would stake MY life on.

In an urban situation, you will have lots of "normal" IR blockers to get under/behind. Just remember that you are an IR light bulb on the cold surfaces behind you. You cannot casually set up back in the room shadows of a windowless building anymore. Remember, glass will NOT pass through (transmit) your IR image. BUT, glass (94) has a high emissivity and will show its surface temperature rather well. If you are near the window warming it with your breath, you will reveal yourself. If you had a small barrel portal through an otherwise intact glass window, you would be IR blocked, but visually seen. A loose pane of glass back in the room shadows might be a possibility, especially for a spotter. If the room is painted (90-95) and warm (approaching 98.6 F), you might blend in IR wise. But if there is one warm window/room in an "empty" building, something is amiss. The painted walls behind you might not reflect your IR really well, but a metallic light fixture might blink every time you turn your face toward it. The best I can imagine is forget about the "room" and get behind/under something that should be there - sofas, chairs, drapes, etc. and keep your portal small.

None of the above CONCEALMENT strategies are easy; none are guaranteed to make you disappear to an imager. But they will all help make you a less vivid IR image, thus less detectable. IR imagers may or may not have an adjustment to key in the emissivity for scanning and reading temperatures. I doubt military/LE targeting devices would have that - you don't care what the actual temp is, you just want to see a picture. Military/LEO devices probably have a temperature range adjustment to scale up/down according to environment. They probably have an adjustment to set the sensitivity - the difference in perceived T to go from black to white (dark green to light green; whatever).If this is finely tuned, it is like upping the contrast on your monitor.

There is one comforting thing to consider: unless you are in the desert, there are a lot of different "things" around you, each of them with a slightly different Temperature and Emittance combination. If you can make yourself "nearly" match the most common IR surroundings and the sensitivity is set very high in order to pick up your small T/E difference, the other guy is seeing a lot more clutter around you, so your image will be just one spot on the Dalmatian. For the Ghillie fans: A man sized wad of only burlap and jute rope at 98.6 F plus or minus a few degrees will have the same E all over it. But if there was some leafage from an IR blocking camo net on one shoulder and a splotch of shredded BDU's at the waist and some foreign force camo material shredded in there somewhere in a cluster, all well supplemented with local veggies, from an IR standpoint it would look like a pile of dissimilar "stuff".

If you have gotten this far, perhaps a little DECEPTION is in order to up your advantage. Remember that "Sarge WILL find something during an inspection, so ya might as well give him something so he will stop looking." If you want to determine if indeed IR detectors are out there, you might want to give them a cowboy hat to shoot at. I don't know what the E of a bare GI plastic canteen is, but if you either wrapped it with Scotch 33 electrical tape (97) from a demo/como kit or sprayed it with foot powder (96) from your ruck, and had 98 degree water (coffee? Body heat?) in it, it would make a darned good human face (97) to a distant IR imager. Topped with a BDU hat and moved about on a stick behind some intentionally inadequate screening after dark (by somebody else behind that cowboy's large rock), I suspect you would soon know the targeting capabilities of the opposition - and also acquire a muzzle flash.

A piece of most anything warmer than the terrain drug remotely through the grass at night should get IR attention. Just don't pull it all the way to your position. But you get the idea. If you want to just give him/them something to worry about, scatter some old tire shreds (94) around at points distant from your position. They will look hotter than most surroundings when they are actually the same temperature. Plus, they will heat up more during sunlight, and hold their temperature for quite a while into dusk. If you can make them move a bit, so much the better. If they are behind intentionally poor screens, thus not visually or starlight identifiable, so much the better. This would be a great application for decoys specially made for the purpose - a visually camo'd, high E lollipop on a spindly, flexible stick.

One of the new IR illumination chemlights would do something, but I have no experience with them. I suspect one of them tripped off in front of or to the side of your position, yourself in a shadow from it, would blind any thermal imagers looking at you - like a trip flare would blind a starlight. Obviously this would be a defensive action. There have been some pretty impressive demonstrations of the capabilities of IR equipment. And it is indeed impressive stuff, but it ain't magic. It can image warm footprints on a cold roof, or a "ghost" where you leaned against a cold wall and walked away. But those images fade pretty quickly - faster than the grass will spring back up on your trail to a nest.

I believe that if one person takes the time to study and understand the theory of IR systems and applies it to likely circumstances in his world and does it better than the other guy does, the first guy has an EXCELLENT chance of being the winner. That is true for sniping or bidding on a roof inspection. Even an unfavorable tilt in sophistication of equipment may be overcome with intelligent application of ingenuity. And it won't take a lot of formal training. After that, it is experience behind an imager. In your case, looking at your buddies in drill hides, and correcting each other's errors. I grant you that my "thermacam" is not a military targeting device, but if your life is professionally depending on IR avoidance, I hope you have access to IR theory training and support along with the opportunity to drill with your own imagers.

If you may be exposed to a "new" technology, you just have to learn it and apply it. Like you did for visual and starlight. In fact, most of those old rules apply to IR: Irregular outlines. fresh vegetation. local materials. etc. The only real new rule is "Similar E - Similar T". Now, get with some equipment and TRAIN, DRILL, EXAMINE, .

Want to buy some FLIR camouflage?

Stealthbag.com

The StealthBag keeps your heat in for survival and has an aluminized color when turning the bag inside-out to aid rescuers to spot you visually. The StealthBag has "chocolate-chip" desert cammo pattern for Visual camouflage, and still retains radiant body heat so the user cannot be picked up by infrared-seeking instruments.

The StealthBag was tested on a variety of commercial and military-grade infrared detection equipment. The highly regarded FLIR, Inc. Model 2000AB chopper-mounted IR detector (operating in the 8-14 micron wavelength range), was unable during a 30-minute test to locate three individuals inside StealthBags. When the original LAND/Shark was introduced, SOF ran tests with a Life-Finder hand-held IR detector, with similar results.

Weighing less than a G.I. poncho, the StealthBag comes vacuum-packed for long-term storage in a mylar bag, in a 600-denier nylon carrying pouch. After a knife, this is now the first item that gets put in our go pack, for certain protection against whatever elements one may encounter on land, sea or air.

The StealthBag is available at an introductory discount price of $49.95 plus $6.99 shipping/handling from Corporate Air Parts, Dept. SOF, 7641 Densmore Ave., Van Nuys, CA 91406-2043; phone: 818-997-0512; fax: 818-997-0478; web site: www.stealthbag.com .

Comments on FLIR from a Law enforcement discussion board.

FLIR is a sort of video camera, but it doesn't see visible light; it senses minute differences in temperatures and assigns various shades to them according to what's hottest and coolest. This results in ghost-like images that look reversed, like a photographic negative. What's most impressive is that FLIR can "see" through thin foliage as well as rain and snow-and those capabilities can be just as important in daylight as in darkness.

That would sound like the end of the world to a sniper if there were no means to counter it, but there are. I'm not going to be too specific (bad guys can read, too), [LWDC yes we are reading your manuals and we have our own so FUCK YOU] but I think it's obvious that if you can change your external body temperature or make it close to the temperature of things around you-think of it as another way of camouflaging yourself into your surroundings-then the FLIR won't be able to distinguish you. There's a true story about a Marine sniper gunny at Quantico who purchased an item at a flea market for $2 [LWDC it was an umbrella you cocksucker] and used it to hide from a multimillion dollar thermal detection system-with several congressmen watching. Yes, FLIR can be fooled.

A thermal detection-resistant Ghillie suit has been developed in Britain that vents and deflects body heat to reduce the wearer's thermal image. I'm not sure how effective it actually is. On this side of the Atlantic, Custom Concealment makes two Ghillie suits specially modified to enhance their resistance to thermal detection. Examining FLIR photos of demonstrators wearing these suits, I don't think there can be any question that the heat signature has been reduced, and quite a bit.

An even more novel approach has been that of a Greek defense contractor, Intermat Group SA, which developed an anti thermal cream. Applied to exposed parts of the body-face, arms, and hands, where heat is registered by a FLIR most easily-the dense cream blocks heat dissipation, thereby reducing the wearer's thermal signature. This is a serious product from a manufacturer that already makes paints serious and specialized coatings for helmets, uniforms, and vehicles to reduce their detection by IR systems. They may actually have something, since all the FLIR images I've seen are brightest at the very spots that this cream would cover. I wouldn't be too concerned about the enemy using FLIR against us since its more of a future threat than a current one. If the day comes that an is a enemy uses FLIR against us, we'll already have the techniques and the technology to counter it.

Comments from a FLIR manufacturer.

How does rain and fog affect the range of my FLIR camera?

A thermal imaging camera produces an image based on the differences in thermal radiation that an object emits. In essence, the farther this infrared signal has to travel from the target to the camera, the more of that signal can be lost along the way. As such, the attenuation factor needs to be taken into account. This is the ratio of the incident radiation to the radiation transmitted through a shielding material. Humid air acts as a "shield" for infrared radiation. Summer month atmospheres usually have a higher attenuation compared to winter months due to increased humidity levels. Therefore, assuming clear skies and good weather conditions, you will be able to see farther with a thermal imaging camera in winter than in summer.

Humid air is just one example of how infrared radiation can be lost. There are other climatic conditions which are far more detrimental to therange of a thermal imaging camera. Fog and rain can severely limit the range of a thermal imaging system due to scattering of light off droplets of water. The higher the density of droplets, the more the infrared signal is diminished. An important question that customers ask is how much rain or fog will limit the range performance of a thermal infrared camera, and how does this compare to the range in the visible region of the spectrum.

Fog classifications

Fog is a visible aggregate of minute water droplets suspended in the atmosphere at or near the surface of the earth. When air is almost saturated with water vapor, this means that the relative humidity is close to 100%, and that fog can form in the presence of a sufficient number of condensation nuclei, which can be smoke or dust particles.

There are different types of fog. Advection fog is formed through the mixing of two air masses with different temperatures and/or humidity. Another form is radiative fog. This is formed in a process of radiative cooling of the air at temperatures close to the dew point. Some fogbanks are denser than others because the water droplets have grown bigger through accretion. In fog conditions droplets can absorb more water and grow considerably in size. The question whether scattering is less in the IR waveband compared to the visible range depends on the size distribution of the droplets.

There are different ways to classify fog. An often-used classification is the one used by the International Civil Aviation Organization (ICAO). According to this system, fog can be classified in 4 categories:

Category I: visual range 1220 meters
Category II: visual range 610 meters
Category IIIa: visual range 305 meters
Category IIIc: visual range 92 meters

The reason for degradation of visibility in a foggy atmosphere is the absorption and scattering of natural or artificial illumination by fog particles. The amount of absorption and scattering depends on the microphysical structure of the fog particles, which are also called aerosols.

Moderate Resolution Propagation Model (MODTRAN)

MODTRAN is an atmospheric radiative transfer code created and supported by the United States Air Force. It has the ability to model the atmosphere under a variety of atmospheric conditions. It can predict atmospheric properties including path radiances, path transmission, sky radiances and surface reaching solar and lunar irradiances for a wide range of wavelengths and spectral resolutions. MODTRAN enables the calculation of transmittance and radiance in a wide spectral range. It offers six climate models for different geographical latitudes and seasons. The model also defines six different aerosol types which can appear in each of the climates.

Each of the climate models can be combined with the different aerosols. How far you can see through fog or rain with a thermal imaging camera will also depend on the climate in which you are using the camera and the type of aerosol which is present in this specific climate. In general, a comparison of the different aerosols shows that the maritime aerosols always result in the lowest detection range independent of the climate model, since maritime aerosols have in average greater particle radii than rural and urban aerosols. The rural and urban aerosols produce noticeably greater detection ranges in the infrared band. This means that you can see less well through fog in maritime conditions than in land conditions, irrespective of the climate type.

Just as the type and thickness of the atmosphere has an influence on how far one can see through fog, the type of infrared camera used and specifically the waveband in which the camera operates are also of importance.

There are two wavebands of importance for thermal imaging cameras:
3.0-5µm (MWIR)
8-12µm (LWIR).

The 5-8µm band is blocked by spectral absorption of the atmosphere by water vapor to such a tremendous extent that it is rarely used for imaging.

Thermal imaging cameras that are equipped with uncooled sensors are designed to work in the longwave infrared (LWIR) band between 7 and 14 microns in wavelength, where terrestrial targets emit most of their infrared energy and uncooled detection is easy. Thermal cameras that are equipped with cooled detectors (where the sensors are cooled to cryogenic temperatures) are the most sensitive to small temperature differences in scene temperature and are generally designed to image in the midwave infrared band (MWIR) or in the longwave (LWIR) band.

The spectral transmission is different in the MWIR and the LWIR bands. Therefore there will be a difference how far one can see through fog with a thermal imaging camera equipped with an uncooled LWIR detector compared to a cooled MWIR detector. In the LWIR the best conditions occur in winter with low absolute humidity and a rural aerosol distribution. In the MWIR band the detection range is best in conditions with high temperatures , like a summer or tropical atmosphere. All detection ranges for IR are significantly better than the visual for Cat I type of fog. For Cat II type of fog the result is four times better with a thermal imaging camera equipped with a LWIR detector compared to visual.

In Cat IIIa and Cat IIIc types of fog, there is virtually no difference between how far you can see with a thermal imaging camera and with the naked eye since the atmosphere is the limiting factor. Radiation does not penetrate through this dense type of fog in all (visible, MWIR and LWIR) spectral bands.

Conclusion & results

According to these models, Cat I and Cat II types of fog, the thermal IR band offers better range performance compared to the visual band. As such, thermal IR cameras are well suited to look through these types of fog. The models suggest that thermal imaging cameras are potentially useful as landing aids for airplanes or as part of driver vision enhancement systems for the transportation and automotive industry.

The models suggest that fog penetration is higher in the LWIR compared to the MWIR band in all studied cases. For Cat II type of fog, the LWIR spectral band offers about four times better range performance compared to the MWIR band. However, sensor thermal sensitivity and the target signatures must be taken into account to arrive at a final selection of the best system to meet the application. Also cost considerations come into play. For instance, for security & surveillance applications, it is generally not economical to use uncooled LWIR systems for longer ranges as the lenses become too big and expensive. MWIR radiation is adversely affected by atmospheric pollutants and pollutant gases (possible increased atmospheric absorption and/or increase levels of inpath radiance – both of which reduce target image contrast). LWIR is much less affected.

Rain can significantly reduce target contrast (due to increased atmospheric scattering and general obscuration) and LWIR and MWIR perform similarly in the presence of rain. IR system performance degradation due to rain is very range sensitive, whereby there is a dramatic drop off in the 100-500 meter range.

Just like it is impossible to give a simple answer to the question "How far can I see with a thermal imaging camera?", it is equally impossible to say how much shorter the range will be in foggy or rainy conditions. This is not only dependent on the atmospheric conditions and the type of fog but it is also dependent on the IR camera used and on the properties of the target (size, temperature difference of the target and background, etc)

For more information

Marijuana growers are frequently concerned about FLIR detection of their grow houses. Specifically, law enforcement officers look for heat signatures put off by powerful indoor lighting systems. There are heat shielding products, videos on defeating FLIR, etc. produced by and for Marijuana growers. Look into these materials and products for the most up to date countermeasures. Wether you like drug dealers or not, these people have to worry about FLIR on a regular basis – LEARN FROM THEM.

Border Patrol intercepting illegal immigrants crossing the border.

Notice how "hot" the uncovered face is compared to everything else.

If you are prepared you can defeat FLIR

Some readers have inquired as to why The Paranoid Newsletter includes so much technical information. Wouldn't it be easier to speak in a general sense about the topics covered? We will never dumb down our publication to appeal to the masses. Instead of dumbing our material down, you will have to bring yourself up to speed. This newsletter consists of concentrated technical information.

In order survive in a high tech society, you will simply have to learn how technology works or you will be left behind. We intend for this newsletter to give you a basic understanding and introduction to the material presented. You will have to do follow up research to understand the subject matter completely. If you do independent research, you will be better prepared than those who seek to use this technology against you. As a small unit or independent operator you are required to have a superior understanding of technology to defeat a large and well funded enemy.

Thank you for reading our seventh edition

Visit Resist.com to buy future and archived editions.

Sure you can trust the government, just ask an Indian!
We work with a separate organization that allows us to maintain our privacy and acts as a cashier for sales and donations. Please refer to THE PARANOID NEWSLETTER in all your correspondence, otherwise the staff will confuse your correspondence with another newsletter. Send email to TM_Metzger@yahoo.com (Note the "_" character is not a space) or send us snail mail with your donation and request for additional newsletters to:

Tom Metzger
P.O. Box 401
Warsaw, In 46581