The following is a sabotage manual put out by some folks at the Underground Cafe in Britain. Feel free to download this info as who knows when they may try to shut down this site.

Ozymandias Sabotage Handbook

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Cafe Underground presents:

Ozymandias' Sabotage Handbook

1. INTRODUCTION

This guide is not really about 'noble' sabotage - for example people clamping themselves to diggers on road projects. It's about taking action against the everyday destruction of the environment - it's about afforestation (of open areas), deforestation (of natural woodlands), polluting industries, and the ceaseless growth of urbanised areas while inner cities are left derelict. Specifically, it's about sabotaging machinery, and getting away with it.

This guide I hope will help those already interested in 'the cause', and those who would like to join the cause but don't have sufficient knowledge, to get out there and make mischief. It's not a matter of revenge, for such negative motives only lead to senseless loss and destruction. Also, it's not about anger or rage, for under these very personal influences we lose all sensibility and fail to act in the interests of the wider planet. We must act in a quite straightforward manner - for centuries landowners and 'businessmen' have exploited the Earth, and grown fat on its wealth. We must, for the sake of future generations, redress the balance. We cannot take back what has been taken because the system is stacked against us. Instead we must invite their retribution by depriving them of the resources and processes which create their excessive wealth.

I have to admit that the height of my career has been sabotaging dumpers, JCBs and 2 Caterpillars within fifty yards of the security guard's office. The worst was certainly sabotaging some road construction equipment and having to walk five miles home covered in diesel. In between I've scratched Porches, 'improved' billboards, sugared fuel stores and glued locks.

What follows is an account of what a person could do, if they were so minded, to generally foul up, destroy, disable and outwardly smash those installations and devices which are being used by 'the opposition' to destroy the planet. Of course, lest I be accused of incitement, all the contents of this manual are purely hypothetical, and any embellishments relating to my own activities is merely illustrative story telling.... Officer. But what we have to realise is that those who would destroy the world have huge sums of money, gained from centuries of plundering natural resources, and exploiting both humans and animals. We on the other hand are a disparate, but growing, bunch of (mainly) hippies, who have had all they can stand from the system.

Carrying out eco-sabotage

One important point - whatever you do you should always ensure that you never cause harm to other people, or to the Earth that you are trying to protect. There's not much point in nobbling an earth mover which is building a new road bridge if you cut the fuel lines and send 200 gallons of diesel down the river. Eco-sabotage should never be conducted in a rage or anger - that way lies plain destruction and vandalism. Eco-sabotage should be planned, calmly executed, and the extent should reflect the damage that the evil-doer is inflicting on the Earth.

This manual is oriented towards a UK audience - so if you are reading this in any other country via the Internet you'll just have to make the best you can of the content. It covers all aspects of eco-sabotage that I have used/considered in the past few years - the law, equipment, intelligence gathering and 'hit' planning. It is by no means a complete account, but if you think there are items missing or you find errors, by all means circulate your own changes.

The most important thing I have to say to you is - educate yourselves. It may seem extreme, but before you start professionally on this sort of work you should enrol in motor maintenance or engineering evening classes at you local college, take the radio-amateur's training course, or just buy lots of DIY books and study them. When presented with something new in the field, it is experience that is the most valuable thing, not just a bigger hammer.

Tooling is also important. You don't wreck earth-movers with a hammer and screwdriver - they're built to take impacts! It requires consideration, spanners, tungsten-carbide grinding powder, epoxy resins and slow, careful work. Mindless bashing about does little real damage, and will attract attention.

And finally...

No one person has written this handbook - it is the collected thoughts of a number of saboteurs (I am the editor and coordinator of the enterprise). For obvious reasons, I must decline to use my name. Unfortunately the UK authorities will not welcome this publication with the joyous praise of open government and freedom of speech. I can see 'The Sun' headlines now... "Hippies get DIY manual". Instead, I adopt a 'nom de plume' of Ozymandias, taken from the poems of Shelley - read the poem to see the irony.

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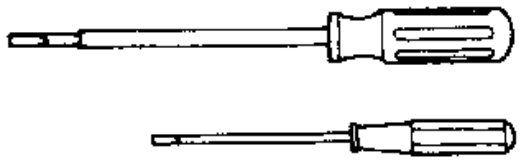
2. TOOLS OF THE TRADE

Eco-purists may prefer to wreak havoc using their bare hands and renewably produced wooden/stone tools. I take the view that to defeat a technologically advanced opposition, we ourselves must adopt these technological skills and use them to appropriate ends.



2.1 What do you need tools for?

A tool is a means to aid an outcome. If I want to insert a nail into wood I use a hammer, not my head. Likewise, if I want to spike a fuel tank to blow a JCB (less noisy than hammering off the locked fuel cap) I use a centre-punch. Only Babylon's infernal machines can bring Babylon down.

So what do you need?...

The first question you must ask is, 'what am I going to do?'. That will determine the tooling requirements:

- **For an easy evening's pleasure you can do an awful lot of damage with superglue, a hammer, a chisel, and an adjustable wrench. Alternatively, for more combustible targets, a simple box of matches may do. These days it is even possible to get pocket sized blow torches, running on lighter fuel, which will give you up to half an hour's recreational metalworking;**

- **For a major hit, you plan in advance, schedule the work within a strict timed period, and take exactly what tools you need to achieve the set tasks in the time available.**

There are also other considerations. You could easily spend £500 tooling up for some serious sabotage. On the other hand, at a moment's notice you might have to dump the lot into the nearest river. You must also expect losses, breakages and damage through wear and tear. Cost must therefore come into the plan. You could use second hand tools (so long as you obliterate all identifying marks), or you could buy cheap tools - but cheap tools, in my experience, often fail when you need them most (tip: never buy cheap bolt cutters!!).

You must also consider the amount of trouble you want to get into. When travelling to or from the hit you could get pulled in for 'going equipped'. For obvious reasons it is better to get pulled in with just a screwdriver and side-cutters rather than portable oxyacetylene equipment.

2.2 How to organise your tools

As stated above, tools must be:

- **Of a quality fit for the task;**

- **Unidentifiable in case of loss;**

- **Disposable in the event of discovery or the need to make a rapid exit from the scene;**

- **Surplus to requirements - never use your work tools or tools you keep at home.**

This last point is, I think, the most important. Modern forensic science can do wondrous things. They could

match the hydraulic fluid on your bolt cutters to that of a wrecked earth-mover. They could match the manganese/chromium content of your hardened steel Allen keys to the traces of metal on a removed bolt. More basically, they can match the imprint of your boots to footprints found on the scene of the crime.

NEVER - NEVER - NEVER take your used tools home again. You should find a safe hiding place, well out of the way of the public but with easy and unsuspicious access, and stash your equipment there. As well as your tools you should stash clothes, footwear and gloves. Anything which could connect you to the scene of the incident - excepting you own body which you must always scrub clean afterwards - should be stashed.

If possible, and if money permits, keep more than one stash of equipment. After using tools you should never go back to the stash site for one to three weeks - perhaps six if the hit caused a bit of a commotion. Being able to pick and choose your stash, perhaps having one stash for each area you operate in allows you to randomise hits/equipment use, and let the 'heat' die down between events.

Equipment can be stored in a number of ways:

- **Just buried in plastic bags;**
- **Kept in air/water-tight containers, buried or stashed above ground;**
- **Locked in old garages, derelict buildings or barns;**
- **Needle in a haystack - keep them where there are lots of tools already.**

You should ensure that they are kept dry, or in oiled rags/canvas to prevent rust. Chemicals need to be stored in leak proof containers which will not corrode. Clothes really need to be kept in air/water tight containers until you can wash them some weeks/months later. A good tip - never put your eggs in one basket. If possible have a number of stashes in a small area to minimise losses if any one stash is discovered.

The key thing when considering tools is to ensure that they are untraceable. If you must buy tools, always pay in cash. Never buy mail order tools. If possible, buy them fifty miles from where you live, using wholesale outlets where possible so that the volume of trading covers up your small purchases. Never buy in a pattern - if you buy three bags of fertiliser, a bag of icing sugar and a box of charcoal, and then a few days later a chemical fire destroys 6 JCBs, it's a bit obvious who did it! Spread your purchases by location, by product, and if possible by as wide a time gap as possible. And like tool storage, unless it is unavoidable, never take really incriminating evidence home ("*excuse me sir, what is an accountant doing with a pocket welding torch and a pair of heavy duty bolt cutters*").

2.3 The basic toolkit

If you just want to make a general nuisance of yourself then I would suggest:

1 x 4lb lump hammer	**3 varied size flat screwdrivers**
1 x cold chisel (about 1" width)	**3 varied size posidrive screwdrivers**
1 x adjustable wrench	**4kg of icing sugar**
1 x side cutters	**3 packs of superglue**
1 x crowbar	**Grinding powder (optional)**

(to aid you, there is a tooling checklist at the back of the handbook)

However, a more planned and directed outing may require specialised tools such as drills, hand held blow torches and solder, oil filter straps or thread taps. You can actually have a fun night on a pair of heavy-duty side cutters and centre-punch/screwdriver alone. As said at the beginning, knowledge of basic engineering/mechanical principles can make up for lack of tooling. If you don't have tungsten-carbide

powder to put in the sump of an engine, then sand will do just as well. And even if you only have a spark-plug spanner, taking out the plugs, dropping in two or three small bolts/ball bearings and then replacing the plugs will do more damage than cutting all the cables and fuel lines in sight.

If you build up your stash over time then there are basic items you need. A factor you must consider is how many of you will be doing the work. I primarily work alone and so tooling needs are minimal. Having to wait your turn for the bolt-cutters wastes time and increases the risk of detection. Where there is more than one person working multiples of basic tools are essential.

Here is a list to begin with. It is an ideal list - I don't take everything all the time, although 90% of the time I do take the basics like cutters, sugar and first-aid kits:

- **Clothes: If possible do not return home in the clothes you worked in. Take spare clothes and washing water/soap, strip off, wash off any oil, grease or dust, and then stash the used clothes. Forensic tests can pick out things like hydraulic fluid even when clothes have been washed;**
- **Gloves: Not rubber ones like in the films - heavy duty gloves which won't puncture. If you cut yourself and bleed over the machine the police can do tests to put your DNA profile on a national database, and at a later date you might be matched up with the crime;**
- **First aid kit: Plaster and bandages, distilled water and an eyeglass in case you get debris/oil in your eye, burn dressings and antiseptic wipes;**
- **Torch: A small torch is useful, but cover it in dark red acetate/plastic so that it doesn't attract attention or ruin your night vision;**
- **Whistle/two-way radio: Only necessary if there is more than one saboteur, or if there is one saboteur with a look out. The best laid plans can go awry, so plan a set of hoots/whistles/screams for when you need to communicate;**
- **Goggles: Protect your eyes when cutting fuel/hydraulic lines, hammering, drilling or sawing;**
- **Heavy-duty side cutters: Hardened steel cutters, with bolt-cutting action if possible, are best. These are general purpose and can be used for a number of wrecking operations involving pipes, cables or fences;**
- **Adjustable wrench: Carrying lots of spanners is difficult and noisy. Adjustable spanners/wrenches, Mole grips or utility pliers solve this problem. If possible, take equipment capable of fitting a one and a quarter inch nut (the size of many screw fittings on JCBs/dumper trucks). An additional item, if you will be dealing with petrol engines, is a plug spanner;**
- **Small hack-saw: Most cutting work will be done with side cutters, but when you encounter hardened steel rods or bars a small saw is necessary;**
- **Assorted screwdrivers: I take between four to six screwdrivers. The standard set is a small (3mm blade), medium (5mm blade) and large (10mm blade) set of posidrive and spade screwdrivers. The alternative is to buy a set of 'snap-on' tools, where you fit different sized bits into the screwdriver-body bit holder. These can also hold other tools too such as allen keys and socket sets. Unfortunately, in the dark, and with oily hands, changing bits can be problematic;**
- **Small hand drill: Most hydraulic lines on caterpillars/JCBs are reinforced with an armoured, flexible helical sheath. This makes them difficult to cut. However, a small metal/high speed steel drill bit, no more than one-sixteenth of an inch in diameter, can penetrate the sheath quite quickly - unfortunately you'll have to take a few bits because the drill blunts after five or six holes;**
- **A set of metric/imperial allen keys: Allen keys or hex-keys are widely used in engineering for screwing**

in high tensile/hardened steel bolts;

- **Sharp/blunt chisel: Chisels have varying uses, from splitting open hoses (sharp chisel) to puncturing the gauze filters in petrol and sump filler tubes (blunt chisel);**
- **4lb lump hammer: Well, any hammer will do, but a 4lb lump hammer is a trade off between weight and effective force. In practice, you don't hammer that much anyway because it makes too much noise;**
- **Crowbar: A crowbar is most useful. Apart from just levering things off or open, its long shaft makes an excellent 'long chisel' for doing damage in restricted spaces. Also, by holding it by it's pointed end and swinging the round end you get a good lightweight hammer;**
- **Superglue: On a small/medium sized building site it is quite easy to get through three or four 5 gram packs of 'super' (cyanoacrylate) glue. Superglue works best in small voids or between close fitting surfaces (e.g., locks, switches and levers). For larger void spaces (plug sockets, engine carburetters, etc.), get quick setting epoxy resin - the 'dual tube' sort is best as it dispenses the correct measures of resin and hardener into the void and then you use a nail or screw to mix it around;**
- **Sugar/syrup: About 5kg of icing sugar (icing sugar dissolves more easily than granulated sugar) stirred into the average machine diesel tank will carbonise a cylinder head in a few hours. Assume that 1 kg works on 10-15 gallons of fuel (this is a bare minimum figure - it works but it'll take longer). Golden syrup works best in situations where it's not possible to stir because it liquefies/dissolves faster, but it's a real pain to pour;**
- **Staple gun: Electric cables do not respond well to having ten or twenty metal staples shot into them. Heavy duty upholstery staple guns are best;**
- **Mastic/sealing resin: This is the stuff that comes in tubes for sealing around window/door frames. You can also shoot the foaming variety into alarms/sirens and let it set to ensure that no one hears if you set them off. Mastic also makes a mess of engine/compressor air intakes;**
- **Centre-punch: This is like a chisel, but it has a point. More effective for puncturing tanks, windows, instrumentation panels and electrical circuit boards;**
- **4-6 feet of plastic pipe: Sort of stuff beer/wine makers use - but you siphon fuel instead of wine. Alternatively, place a funnel in one end of the pipe and direct the end of the other pipe through narrow accesses/pipes to deliver flammable or corrosive substances to the target;**
- **Stanley knife: You'd be surprised at the number of things you need a sharp knife to cut;**
- **Grinding/polishing powder: You stick about half a pint in volume (200 grams by weight) into the oil sump of any mechanical engine. It's not cheap, and sand works as well (so long as you remove, spike and replace the oil filter), but grinding power does much more damage because of its hardness.**

Much of the above can be bought cheaply as sets through catalogue stores such as Index or Argos. I get my tools from Argos - this is because they have a lot of branches, so I don't have to buy them in my home town, and although the quality of the sets is not high the tools are good enough for the price you pay and are not so expensive that dumping them in the canal is not a major set-back.

Examples of the sort of deals Argos does are (look in the 'tools' section of the catalogue):

- **Hilka 10 piece plier and wrench and grip set: Comprises 6", 8" and 10" adjustable wrenches and 5", 7" and 10" locking grip wrenches. Plus 7" combination and diagonal cutting pliers, 8" long nose pliers and 10" water pump pliers. Complete with moulded storage case. Cost £14.99;**

- **Richmond 62 piece combination tool and socket set: Comprises 10 half-inch drive sockets (10-22 mm) with ratchet handle, extension bar and sliding Tbar, 9 quarter-inch drive sockets (5-13 mm) with coupler and Tbar, 11 quarter inch bits, 2 spark plug sockets (16 and 21 mm), pliers, crimping tool, multigrip wrench, 6 piece combination wrench set (8-15 mm), 6-12V tester, 2 spade/2 posidrive screwdrivers, spark plug gauge, hammer, 8 piece hex key set (1.56 mm) and bag of terminals. With a sturdy storage/carrying case. Cost £29.99.**
- **Two tonne trolley jack - only weighs 12 kilos! Cost £22.99;**
- **Cordless drills - cost £32 to £159;**
- **Bosch 36 piece drill set - cost £19.99;**
- **Staple guns - Cost £9.99;**
- **In the bicycles section - 'Riderz' high security shackle lock (it says it's for immobilising bikes but it works on other things too!). Cost £9.99;**
- **Hilka tool belt (perfect for carrying things around the site without the hassle of having to carry bags or off-load rucksacks). Cost £8.99.**

The first two items on this list form the major part of a tool stash for only £45. All you would have to buy in addition to these would be glue, sugar, grinding powder, bolt cutters, a couple of chisels and a lump hammer. In fact, even without the additional items, you could do a lot of damage with these tools.

The following section gives brief information on commonly available tools, and how to use them in different situations.

2.3.1 Cutters

There are a few basic types of cutter, working on two basic principles; shearing cutting edges like scissors, and lever action cutting edges, normally for cutting heavy duty items like wire or bolts. Quality and price vary enormously.

- **Side cutters**

Side cutters are the basic tool of any assault on electrical or mechanical equipment. Light weight cutters will part mains cable and plastic fuel/pneumatic lines. Heavy duty cutters - with bolt cutting action if possible - will take out steel cable, metal fuel/hydraulic lines, and you can snip away at lightweight steel/aluminium sheets. When all else fails, the pointed end on the cutters will smash the dials/covers on instrumentation panels too (but a chisel/centre-punch is better).

General cost depends upon quality. Lightweight, cheap cutters come in at £4 - £5. Average quality cutters suitable for electrics and thin steel are about £15. High quality, hardened heavy duty cutters cost £25 upwards.

Figures 3-4: Bolt cutting action side cutters and grip/cutter pliers

- **Bolt cutters**

Bolt cutters are like side cutters, but an arrangement of cams and pivots increases the leverage to increase the cutting pressure applied. The extra complexity also costs more.

Average side cutters will get through fences, but after forty or fifty snips your arms begin to ache. 12" bolt cutters (the length of the handle determines the strength of the cut) will snip through more easily, and they are easier to use because you use them with two hands. The big version, with 3ft long handles, will quite easily cut hardened steel bolts/rods a quarter inch thick.

The unfortunate problem is cost. Bolt action side cutters start around £35 - £40. Fully fledged 12" cutters cost around £60 - £80. Oversize bolt cutters which could tackle bolts and hydraulic lines come in at £100 plus.

- **Combined pliers and cutters**

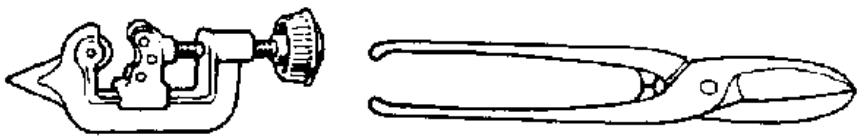
These are sold with nearly all toolkits. They are pliers with a small cutting edge near the hinge, and sometimes wire crops fitted on the hinge pivot. I don't normally use these because side cutters are better, and purpose made pliers are of more use for that task too.

- **Pipe cutters**

These are useful little tools which clamp around pipes. You then turn the tool around the pipe and a small hardened bit takes a bit out of the pipe, similar to how a lathe tool works. As it completes each small cut, you wind in the bit slightly to cut more metal. After a minute or less the pipe falls in half. Useful on electrical conduits, water and hydraulic pipes between one quarter and two inches in diameter.

Cost - basic plumbers' model (made for soft ductile copper pipes) is about £30. Industrial models used by pipe fitters cost £60 upwards.

Figures 5 and 6: Pipe cutter and tin snips



- **Tin snips**

Tin snips are really glorified scissors, used to cut metal sheet. They look like extra heavy-duty scissors. They are useful to cut open bonnets, rigid plastic sheeting, canvas, or the corrugated steel cladding on the outside of modern industrial buildings. You can also deface lightweight metal/plastic signs by cutting them in two or more pieces. Prices start around £15.

2.3.2 Spanners/wrenches and pliers

There are a wide variety of spanners on the market; open ended, ring, adjustable. There are also a wide variety of pliers and grips which are also useful for gripping and unscrewing nuts and bolts.

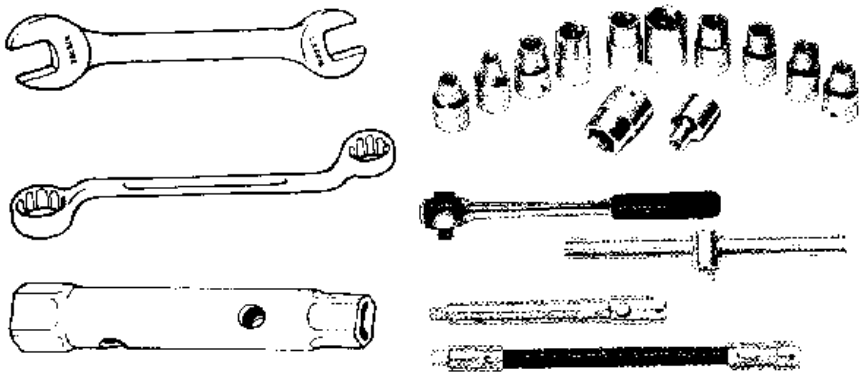
- **Spanners**

Spanners come in two measurements - metric and imperial. Most old/American made equipment uses imperial measurements, but new equipment or foreign made plant uses metric. The problem is not so much damaging the nut or bolt involved - it's more likely that you'll damage you spanner if you use the wrong size.

There are different types of spanner - open ended, ring, and sockets. Open ended are fairly straightforward to use, but ring spanners and sockets are generally better because you can put more force on the nut without stripping the corners off. Sockets are very useful because rather than have a set of large spanners, you have one ratchet or T-bar and a set of metric/imperial sockets to fit it. The problem is that in the dark, with oily hands, they're easy to drop. But you can also get extension bars and even flexible torque extensions for sockets - very good if you're doing engine 'maintenance' rather than engine destruction.

You can also get some hybrid types. Box spanners are half way between a socket and a normal spanner, and are indented for use on deeply sunk nuts. The most useful box spanner is the 'plug spanner' which fits spark plugs on petrol engines.

Figures 7, 8, 9 and 10: Open ended spanner, ring spanner, box spanner and sockets set (with ratched/T-bar and sockets)

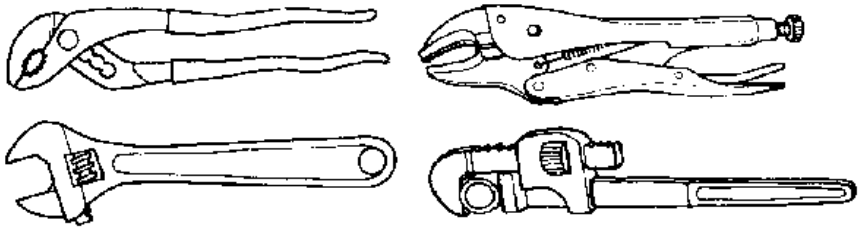


- **Wrenches**

Wrenches are basically adjustable spanners. Different types perform different tasks.

Adjustable pliers are more useful than normal pliers because you can adjust the size of the jaws to fit the job in hand - they are particularly useful for undoing the nut fittings on pipework. Cost - starts around £15.

Figures 11, 12, 13 and 14: Utility pliers, 'Mole' grips, adjustable spanner and 'Stilson' wrench



Adjustable spanners, which come in a range of sizes, are like open ended spanners, but a screw fitting allows you to adjust the open gap. Carrying two or three adjustables is more useful than a whole set of open ended spanners, and there's no duplication because they fit imperial and metric. The only problem is that you can't use as much force on the nut as you can with ring spanners and socket sets - the same problem as with normal open ended spanners. Cost - 7"

(they are sold by the length of the handle) start between £5 and £10. 12" and above cost more than £20.

'Mole' grips are a cross between both of the above, with the advantage that once the gap is set they can be 'locked' on the nut due to their spring action. The size of the gap is adjusted by a screw knob in the handle. These are very useful because you can set them up on a bolt on one side of a panel, and work on the other side of the panel, and as long the the handle of the grips is stopped by an obstruction or they are tied off, they will hold the bolt in place. Prices start around £15-£20, rising to £35 and above for larger and more expensive versions.

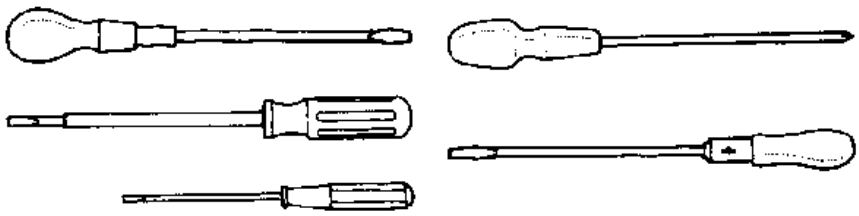
'Stilsons' are the ultimate in adjustable spanners, made especially for large pipe fitting (2" or 4" and above). They are horribly expensive, but if you have a 4 foot set of stilsons, you can move even the tightest nuts on pipework/manifold systems. Cost £100 plus.

Figure 15: 'Allen'/hex key

- **Allen keys**

'Allen' keys or hex-keys are hexagonal sections of metal bent into an 'L' shape. Hardened screws or bolts in motors/plant quite often have hexagonal sockets in their caps. Like spanners, Allen keys come in metric and imperial sizes. I also highly recommend Allen keys with a 'ball' end - these are much easier to use for unscrewing bolts. Cost of Allen keys varies enormously depending upon their quality. The best are made from high tensile hardened steel. Sets cost between £7.50 and £25.

Figures 16, 17, 2 and 18: Spade end, posidrive, electrical and ratchet screwdrivers



2.3.3 Screw drivers

There are two basic types of screwdriver - spade ended and 'posidrive' (cross) ended. They come in varying sizes from miniature (2mm wide) through to half an inch or so.

You can also get different designs. Electrical screwdrivers have plastic insulation running right down to the tip so that you can touch live wires with them and not electrocute yourself. Like socket sets you can also get 'ratchet' screwdrivers. These are quite useful when screwing at arms length because you don't have to let go - you just rotate your hand either way (the direction is controlled by a small switch). You can even get screw drivers with a box end to fit different sockets on - but the usual problem of changing bits in the dark applies.

Screwdrivers have four basic uses:

As a screwdriver, to screw/unscrew bolts/screws/threaded pins;

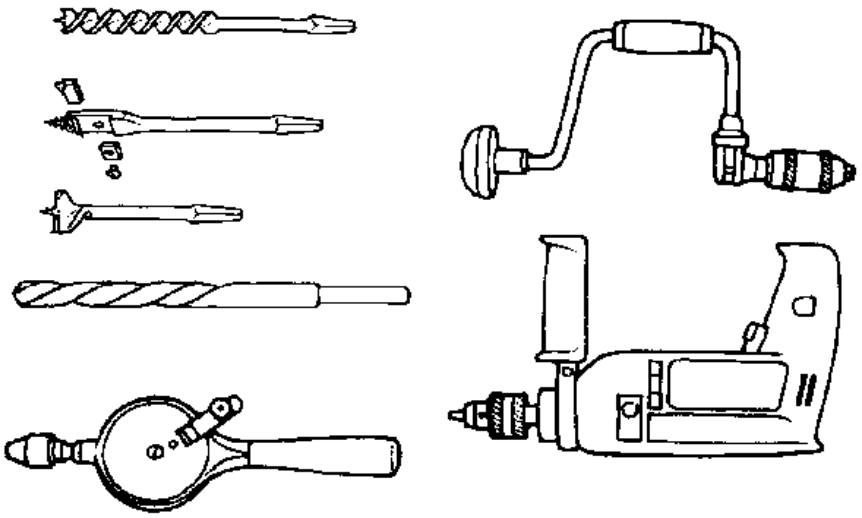
- **As a chisel (not really good for the screwdriver) to make holes/gouges in things (in fact the best way to do in an instrument panel is to push/hammer a long, thin posidrive screwdriver through each display gauge!);**
- **If you have a long screwdriver you can use it as a T-bar, either on a box spanner, or more usefully, you put the shaft of the screwdriver through a loom of wiring and start turning. As the wire twists and tightens it either rips the wires apart or rips them from their fixings;**
- **Most damaging to the screwdriver, as a lever. Jam the end under a fixing, some cables, or the lid of a box, and level upwards - but before long the screwdriver begins to resemble the shape of a banana.**

2.3.4 Drills

I'm not aware of drills being used that much in eco-sabotage, which is a pity, because you can cause tremendous damage with them.

Drills are either powered or manual. The advent of rechargeable drills means that you now have the luxury of using a power drill on locks, electronics, and other sensitive equipment. A power drill is a power drill - not much to say. The only problem with rechargeables is that you'll need to charge it before you go out, which means taking it somewhere to charge, and visiting your stash twice before the hit. Rechargeables are also expensive for the half hour or so of drilling they give you. A normal power drill costs £30 - £50. A 'cordless' drill will cost £100 - £150.

Figures 19, 20, 21, 22 and 23: Rotary hand drill, brace drill and power drill, with twist and brace drill bits



I prefer manual drills - they don't run out of juice and they are quieter. The power drill gives you the advantage of being able to drill big holes quickly. With a manual drill it's difficult to drill big holes quickly, but small ones (say, less than 4mm) are no problem. I normally use a standard 'rotary' drill. Another option is to use a 'brace and bit'. This tool is more aimed at drilling large holes in wood - not much good for making holes in engine blocks, but damn' good for weakening/toppling wooden telephone/power poles and fence posts. A standard tactic is to turn the base of the power pole into swiss cheese drilling a dozen or so holes in it with a brace and bit, and then burn what's left (it's not a good idea to be around when a live power cable hits the ground).

Hand drills start at around £15 - a good brace can cost £30 or more.

- **Drill bits**

Selecting the right drill bit is very important. Learning how to sharpen them is also important since, in order to work quickly, you may have to use more than five or six bits for each hour's drilling because the hardened metals of modern earth-moving machinery blunt them quickly.

Drill bits fall into five categories - wood, metal, high speed metal, masonry and brace bits. To many people the first three look very similar - but wood drills are given away by their deeply grooved thread. Masonry bits have two small hardened 'wings' at the end to penetrate the material. Brace bits - well, they are just big, and like wood drills they have a deep thread.

Using a hand drill on metal you have the option of using hardened or high-speed steel (HSS) bits. HSS bits last longer, but are more expensive - if you have the money get HSS. Masonry bits also come in hardened steel and diamond tipped. Brace bits come in varying sizes and types - a 1" bit is the best for boring holes in posts and poles.

2.3.5 Saws

- **Wood saws**

There are different saws for different jobs. In sabotage you are most likely to be cutting metals. However, if you are cutting wood then don't use a 'normal' wood saw. Use a 'bow' saw. Bow saws don't do as neat a job as carpentry saws, but then again, you are looking for speed of cut not a master carpenter's matching edges. Bow saws start around £15. I suggest the smaller non symmetrical (pointed towards one end) type normally used for pruning - they are smaller, lightweight, but do the job just the same.

- **Hack saws**

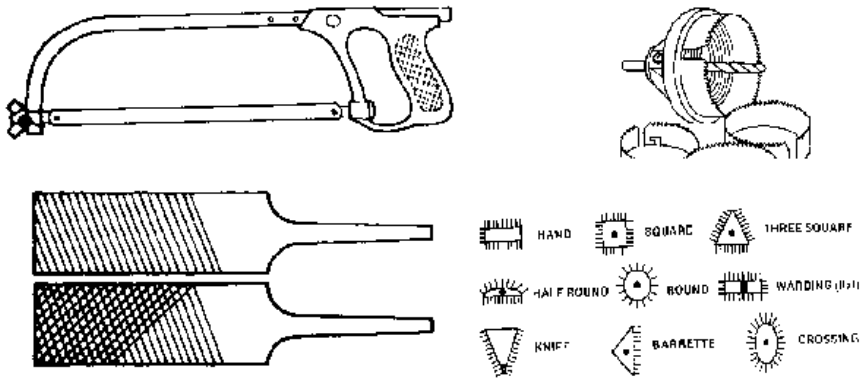
When cutting metals there are two considerations - thickness and hardness. Hardness is taken care of by using the appropriate blade. Thickness will determine the type of saw you use. Standard 'junior' hacksaws won't tackle anything beyond 4mm-6mm of mild steel. For this reason I always use a small hacksaw - although you may need to resort to a full size hacksaw for a larger job.

The key thing to remember is to buy five or ten blades. On hard steel the blades will blunt quickly, and the brittleness of the high-tensile steel blade means that they break easily.

- **Hole saws**

Hole saws are a hybrid between a drill bit and a saw. They fit in a power drill (I normally fit them to a brace - works just as well but a little slower). The drill bit enters the material to keep an accurate centre, then the circular blade cuts a neat circle through. They work easily on wood (good for making spy holes in fences) but metal requires a bit more care. Any sheet steel thicker than 3mm or aluminium thicker than 5mm - 6mm will begin to give you problems. But where you have the bonnet of an earth mover which is locked down and you can't get it off, hole drills provide an alternative means of access. Prices start at £5 - £10, and go up.

Figures 24, 25, 26 and 27: Hacksaw and hole saw, flat files, and cross section of needle files



- **Files**

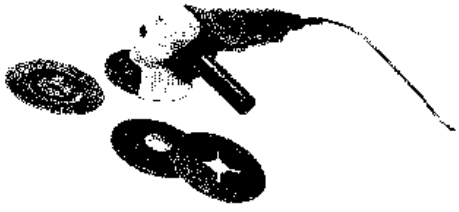
Files are very useful things, especially on precision engineered mechanisms. You will be aware of the standard 'flat' file an inch or so across, but 'needle' files are of much more use. A flat file can spoil most precision/polished metal objects, but needle files are more versatile. You can stick them in holes to make them bigger, or cut small notches to weaken high tensile steel. The best of all are round files because you can stick these in the chuck of a power/rotary drill and file away at high speed. The thickness of round/needle files varies between 2mm - 3mm up to about 10mm.

Normal flat files, for metalwork, cost a quid or two. Needle files vary between 50p and a pound - but if you put a needle file in a drill and bore into an engine block there tends to be not a lot left when you've finished.

- **Angle grinders**

A petrol driven or electric angle grinder, with a high speed metal cutting disk fitted, is the most fiendish weapon in the arsenal of any eco-saboteur. I haven't got one, but in my last engineering job I used them all the time, and I live in hope that one will fall into my lap. Unfortunately they're bloody noisy things - with petrol driven ones you don't need to worry about noise from the engine because as soon as the cutting disk hits the steel everyone will know you're there anyway. Electric ones make the same amount of racket too. The only way to prevent it is to damp the object using earth, rags or weights - but it'll still make some noise, mainly from the cutting disc itself.

Figure 28: Typical angle grinder



Angle grinders are also expensive (pleasure is never cheap!) - £200 for a petrol driven one, £80 - £100 for a good electric one. You can even get rechargeable 'cordless' ones but they're not much good. The disks are also expensive, perhaps £10 - £20 for the highest grade, diamond encrusted ceramic blade for cutting steel, but with one of these things you could cut through a 6" square, half-inch steel box girder in a few minutes - at least as fast as you could cut with an oxyacetylene torch. If you mean business - get an angle grinder.

- **Chainsaws**

Chainsaws are expensive, heavy, and difficult to use in stressed circumstances. However, if you want to do some mass fence post felling, it's really the only way to do it. One trick I saw a landscape gardener use was to bolt the exhaust from a garden mower onto the exhaust outlet - this reduced the noise output by 90%.

Even so, at a cost of £200-£300, it's not the sort of thing you want to throw away when escaping.

Chainsaws will also cut thin metals - car and van bodies for example (earth movers tend to be made from a heavier gauge steel so it would be rather dangerous to try it on these). This give some interesting ideas for anti car actions - and perhaps an alternative to just scratching the paint!

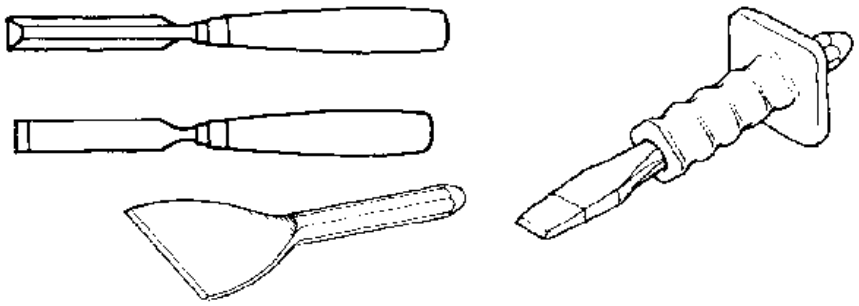
2.3.6 Chisels

Chisels are useful things - you can make holes in things, split things apart, shear things off, and if bored, you can carve letters into the bonnet of the nearest offensive sports car (bevelled chisels are best for carving).

Chisels come in varying sizes and types. Most standard chisels are wood use oriented, but their sharp edges make them useful for puncturing plastic pipes, hammering through circuit boards and instrument panels, or with care you can cut metal sheet in half if the edge is sharp enough. Wood chisels are either square (standard shape) or have bevelled edges for angled work. Sizes vary between a few millimetres and an inch or two. Costs vary between a few pounds to £15. You can even get 'U' shaped chisels - call gouges (mainly use for wood turning) - which are good for chopping lumps out of things.

'Cold' chisels are primarily for stone work, although their basic strength (as a short pointy iron bar) make them ideal for panel beating and other such work. The one illustrated below has a plastic handle so you don't bash your hand, but at times this can get in the way. Sizes vary between a quarter of an inch to one or two inches - prices between £2 and £10. Cold chisels are particularly good for punching dents into sheets of metal, smashing locks, catches, pipe fixings, glass, instrument panels, circuit boards, and any delicate equipment which doesn't react well to sudden shocks.

Figures 29, 30, 31 and 32: 'Bevelled' chisel, cold chisel (with plastic handle), standard chisel and bolster



Bolsters are wide chisels with long thin edges, primarily intended for stonemasonry, splitting bricks, etc. However, if you have six or seven of them, sledge-hammered into the base of a brick wall over the space of two or three metres, you can topple it. They're also good for prying spot welds apart, but it ruins the edge doing so. Costs vary between £5 and £15.

- **Splitting wedges**

Splitting wedges are wedge shaped lumps of steel, 3-6 inches wide, 6-8 inches long, and perhaps 1 - 2 inches thick at the widest part of the wedge. They are primarily intended for splitting logs and tree trunks by progressively hammering them into the wood with a sledgehammer; but they also work well on walls, masonry, locks, doors and hinges, and anything weakly bonded/stuck together that you would like to part.

- **Centre punches**

A centre punch is a small steel bar, flat at one end where you hit it, and pointed at the other where it does the damage. Centre punches are really useful ways of piercing metal sheets, fouling up locks, and punching

holes in die-cast aluminium/cast iron or plastic boxes such as gearboxes, cylinder heads, pump housings and electrical junction boxes. Costs and sizes vary - expect to pay between 50p and £5.

Figure 33: Steel centre punch

'Automatic' centre punches are slightly different. Within the body of the punch is a spring loaded spike. You push the end of the implement against the surface of something, and when the spring loaded bar is nearly all the way in a trigger releases and drives the metal spike into the surface - the pressure with which it does this is normally adjustable. These punches are normally used to mark things before drilling or engraving.

The best sab-use for centre punches is breaking unbreakable 'toughened' safety glass - but wear a mask and/or goggles to protect yourself against splinters. They can also be used on computer screens (this is actually rather dangerous), instrument panels and metal cans (if you puncture a petrol can or fuel line the small hole ensures a low leakage rate, and hence a time delay for initiating a fire).

For a good automatic punch expect to pay between £10 and £25.

- **Axes/pick-axes**

These implements can do a lot of damage in the right hands. Pick axes are good for making holes in walls and concrete. Axes are best used for making holes in fences, cutting cables and modifying sheet metalwork. I consider their use limited though because they make an awful lot of noise, and they weigh a lot.

If you have a problem with underground pipes, then pick-axes can solve them for you. Likewise, axes are a good way of finding buried cable in walls, or splitting wiring conduits.

2.3.7 Hammers/bars

Hammers can do a lot of damage - but in doing so you make a lot of noise, which is a bit of a problem when security is tight. There are ways around this - you can damp the noise of the hammer by wrapping it in canvas or rags, but the thing you are hitting, if it is remotely hollow, will still resonate uncontrollably.

There are different types of hammer, the main difference being the weight of the head - this affects the energy the hammer imparts to the object:

- **A claw hammer is the traditional view of a hammer, and is used widely in construction, but unless you are nailing things up it has little use. The head normally weighs between 1 and 2 pounds giving you very little oomph. You can pay between £10 and £30 for a good claw hammer - always go for the metal shaft in this line of business because wooden ones have a tendency to break, making the hammer end fly off and stove-in yours or someone else's head.**

- **The next step up is a lump hammer. These vary in weight - I find a 4lb hammer a good trade-off between carrying weight and effective oomph. Again, get a metal shaft if you can. Prices of lump hammers vary, but expect to pay between £15 and £40 depending upon the weight.**

- **Sledge hammers are large size versions of lump hammers, used over-arm rather than one handed. Weights vary between 8lb and 30lb, depending on how much damage you want to do. Expect to pay £15 - £50 for a good one.**

Finally, bars. There are three types of bar commonly used in construction.

- **The first is a steel bar, up to 6 feet in length, weighing 10lb to 20lb, looking like a giant sized cold chisel.**

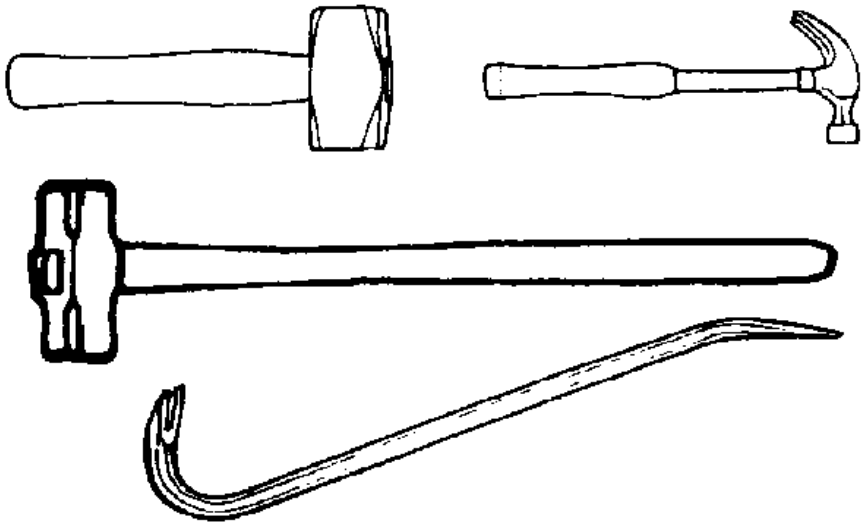
This is used for general destruction, making holes, and levering things up - they are widely used on the railway by track gangs (if you happen across a railway friend). They are difficult to buy, and can cost £60-£80 new.

- **The last two are related. The standard sized crowbar is about 3 feet long, bent into a half-circle at one end. Both ends are beaten into spades to allow levering of attached objects, and the circle end spade is forked to allow for pulling out nails/screws rather like a claw hammer. The smaller relative of the crowbar - the jemmy - is only about 10" to 1 foot long. It is used for more precise levering - they are very useful on electrical equipment or for working in small spaces.**

Both crowbars and jemmys are, in my toolkit, standard issue. With a little practice you can prize things open, a quick back hand using the rounded end as a hammer head dents or smashes most levers, switches and instrumentation, and by holding the rounded end and stabbing with the spade end you can punch holes in control panels, lightweight sheet steel, and using this method will easily dislodge bricks/coping stones.

A crowbar will set you back between £5 and £20. A jemmy normally goes at tool sales for £2 to £5.

Figures 34, 35, 36 and 37: Lump hammer, claw hammer, sledge hammer and crowbar



2.3.8 Specialised tools - jacks, taps, staple-guns etc.

There are a variety of 'non-standard' items which lend themselves to use in specific situations. These mostly involve the application of large amounts for force, or causing maximum hassle for the victim.

- **Staple guns**

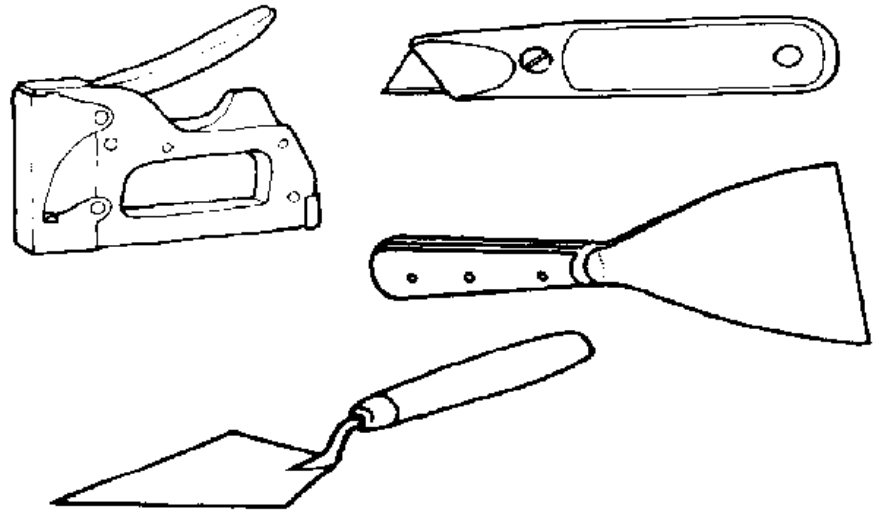
Staple guns are relatively cheap at £20-£30. The ammunition is even cheaper, 200-300 staples for £1-£2. An upholstery staple gun is what you really need rather than the office type - they are more sturdy, pack a bigger punch, and the heavy-duty staples you load into them give a higher penetration power.

The main use for a staple gun is firing metal into electrical cables. This can be a dangerous activity if the cables are live, so you should invest £5-£10 in a 'live wire detector' (available at most good DIY stores). You run the detector over the wires, and if the unit doesn't give out an alarm signal you should be okay. But beware - live wire detectors can have problems with DC current, their response being the variation in the magnetic field in an AC current.

My favourite use is on the coaxial cables used in radio transmitters and receivers. The voltage level is generally not high, and if you fire a few staples in every few metres up the antenna mast you'll be sure to

take out the system. Transmitters are probably the best target as the shorting effect can blow the expensive output transistors. An example of a target is the gross looking cellphone towers which are springing up all over the country.

Figures 38, 39, 40 and 41: Staple gun, 'Stanley'knife, filling knife and pointing trowel



- **Stanley knives**

The point here is, what can't you do with a Stanley knife. Because the blades are retractable they are the perfect in-the-pocket tool - the only problem being if you get stopped by the police who don't take kindly to concealed Stanley knives. Expect to pay between £5 and £10 for a good one with spare blades.

So what can you use them for?:

- **Improving paintwork;**
- **Printed circuit boards - sharp knives are excellent for sabotaging circuit boards, especially those with fine wire tracks such as computers. Carefully disassemble the object and gain access to the back of the circuit board where the tracks are. Gently make fine cuts on small tracks here and there, where they won't be noticed. Then reassemble, and let them figure out what's wrong;**
- **Rubber chopping - slashing tyres, or carefully removing panes of glass from locked earth movers by cutting the rubber seal surrounding the window pane to gain access to the controls (quieter than breaking the glass, but time consuming);**
- **Plastic/rubber hoses - with a little effort these are easily cut;**
- **Electric cables - it's not a good idea to cut right through because it damages the blade. However, if you bare some of the metal conductors (make sure the wires are not live) and tie them together with some more bare wire and hide your work, when the system is turned on you can blow out the wiring/fuses;**
- **Advertisement boards - if you cut reasonable sized triangles into the paper posters, and then get a filling knife or pointing trowel underneath the edges of the paper triangle, the paper, and the offensive advert, peels off really easily.**
- **Jacks/winches**

Sometimes, only large amounts of force will do - why graffiti a Portakabin when you can tip it over? Jacks

an winches perform this task.

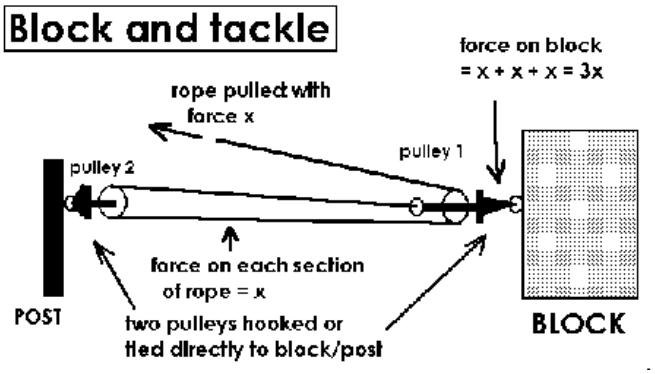
The average mechanical car jack can develop 2 - 3 tonnes of lifting force - enough to raise a variety of structures and small vehicles. By lifting then propping, building a higher platform for the jack, lifting then propping, a Portakabin could be toppled in five or six lifts, a car/van in two or three. If you have access to a hydraulic jack, they can develop 5-10 tonnes of force.

That is of course if you use the jack to just life objects. By baring off between two surfaces - for example between a concrete foundation and a generator or chiller machine - you can strip the object off its mounting studs, or break it into pieces trying.

Winches are also useful - you can move/drag heavy objects, or rip them from their fixings. By tying a cable to the bottom of a Portakabin and then winding/levering in the line, you could drag it from it's original position into a hole, over a quarry face or, by fixing to the far bottom side and pulling over the top of its roof, just turn it over. You could also lash up to an object - the jib of a crane for example, and pull it over.

The classic winching system is the standard 'block and tackle'. This is a device which uses pulleys to multiply the force applied to the rope. The rope is coiled around one or two pulleys, so each rope will be bearing the same force as the rope being pulled - but this force is multiplied by the number of strands threaded between the object and the fixing point or post. A rope coiled once over a pulley and fixed to a point will double the applied force. Three stands will triple it, etc. The illustration below shows how this is done.

Figure 42: Block and tackle

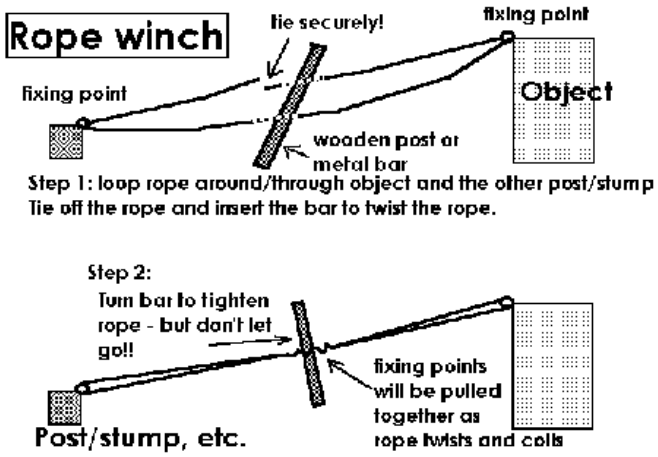


Small pulleys are available from any hardware store - cost between £2 and £10. The heavy duty type block has to be ordered specially and costs a lot of money. You can also buy mechanical winches which have a drum of wire, and a gearing mechanism to increase the power or the manual or engine drive. Finally, there are chain-winches which utilised a teethed ratchet mechanism to tighten chains. These are really useful, but expensive.

Mechanical car jacks are cheap, and normally are easy to come by from parts or scrap dealers. High power hydraulic jacks are likely to cost you £50-£60 from the same sources. Winches tend to be more of a problem. A basic block and tackle can be bought for under £50 - mechanical winches, especially the sort that use chains, are harder to come by (I know, I've tried).

The best advice I can give before undertaking such activities is to read a mechanics/physics book, and understand the vector components of tension/compression forces - that way things will work better for you.

Figure 43: Rope winch



Finally, if you don't have a winch to hand, don't worry. The alternative is to get a long piece of rope or cable. Sling the rope around the object you want to move, and the other end around a fixed point (a post, stump, or something heavier than the object you want to pull). Tie the ends together to form a tight loop of rope/cable between the two objects. Insert a bar or thick wooden post between the two lines of rope, roughly half way between the two objects, and start turning it around and around, twisting the ropes together. As you continue to turn, the ropes/cable will tighten, dragging the two objects together. But beware - if you let go of the bar or post it will start spinning and could injure you. Likewise, if the ropes or cables become so tightly wound that they are beyond the breaking strain of the ropes, the whole set-up up could snap and come hurtling towards you!

- **Taps & dies**

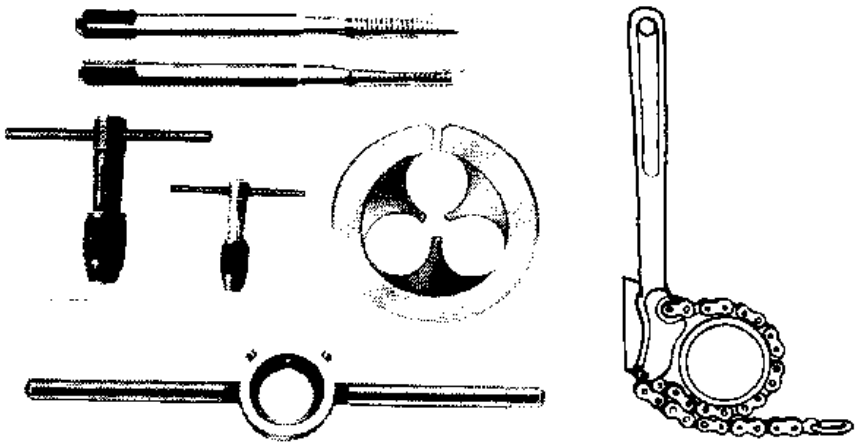
No - not the water sort. A tap is a small metal rod which scours a thread in a hole so that you can screw in a bolt. Mostly people think of how to break into things - well, what about making sure nobody gets in?

For example, take a door on an earth mover. Rather than trying to break it open, why not make sure no-one opens it? The door will shut up against the frame of the cab. If you drill holes of the right size through the door, into the cab frame, and then tap these holes to take a screw bolt, you can bolt the door shut. To make certain nobody unbolts it it's better to countersink the bolts, put superglue on the bolt before you screw it in, and always use an allen key bolt so that you can drill out the hex socket when you've finished.

It's best if you practice this sort of thing - the skill would be taught in any basic college evening course on metalwork. The diagram above shows two taps, and the T-bars which they fit into. A basic set of taps will set you back £15 - £40.

Another option is to thread a solid steel rod and screw it into something to provide an obstruction. This is done by fitting a die into the T-bar with the round hole, and then screwing it along the bar or pipe to make the thread. You then drill and tap a hole at the object, end, then screw the bar into it. A set of dies will set you back £15 - £40.

Figures 44 and 45: Tap/die set, and a chain wrench



- **Chain wrench**

Chain wrenches are useful for unscrewing large pipes. They are normally used by professional pipe fitters, and are expensive things to buy. You can actually lash up something similar using an iron bar and a bike chain.

Another thing you can use them for is removing the big oil filters from earth movers.

- **Glass cutter**

A very useful tool for use in neatly breaking windows. Glass cutting tools are commonly available for a few pounds. It is essentially a steel bar with diamond teeth (by scraping the diamond across a sheet of glass to create a weakness in the brittle surface). When stress is applied to the glass (e.g., your boot) the glass breaks along this line. Straight lines are best - it is very difficult to cut curves in glass.

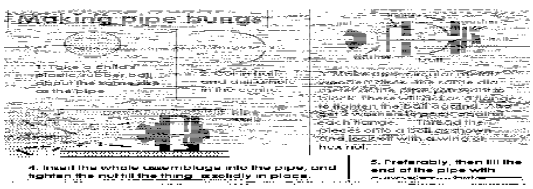
- **Pipe bungs**

When laying new pipes, contractors often fit little rubber bungs with a screw key. As the key is turned, the bung expands against the walls of the pipe and tightly blocks it. There is no reason why you couldn't do the same.

For example, go to the head office of McNasty plc and find their sewer outlet. Stick in the right size of bung, and for good measure, back fill the open end of the pipe and part of the man-hole cover with concrete. The illustration below shows how you can make bungs from commonly available parts.

Alternatively, find a supply pipe to a plant - water or gas for example - glue, solder or weld it shut, and then backfill the hole with concrete.

Figure 52: Home-made pipe bungs

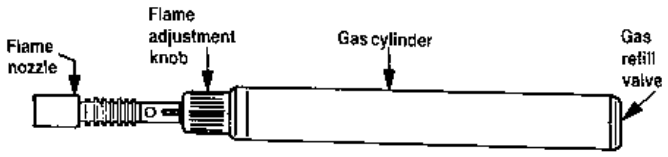


- **Blow torches & welding equipment**

Today there is a new range of miniature blow-torches available. If you want to do lots of damage then the traditional blow torch the size of a bucket is needed, but miniature blow torches work as well in certain instances. Also, a 'micro-gas torch', running on lighter fuel (butane) will only cost you about £7 - £12, burns

at approx. 1,300 degrees Celsius, and runs for 30 minutes on one tank full of gas.

Figure 46: Miniature blow torch



There are basically six things you can do with a miniature gas torch:

1. **Soldering: A nice way to gum up the workings of levers, valves or metals doors is to just solder them up using plumbers solder. You first must prepare the metal surface by getting rid of paint/rust using a wire brush and sandpaper, and then de-grease using a rag dampened with methylated spirits or some other solvent. Then you just solder up the joint - solder with its own flux cores works best.**

2. **Melting: If you have aluminium, lead or brass metal involved, if you concentrate the burner on one small area, assuming the object itself is not too large, you can melt and fuse the metal. You can also melt plastics, but with a burner as hot as this you are more likely to set fire to it.**

3. **Bending: Steel bars may not melt using the burner, but it you heat them at one point they may become soft enough to bend them.**

4. **Cutting: Thin aluminium sheet, rigid plastic sheet (e.g., perspex), ropes and electrical wiring can all be burnt and cut using a micro-torch.**

5. **Scorching: This is mainly for plastics and paintwork. You simply do graffiti using the burner on paintwork (e.g., the bonnet of a car), perspex/plastic sheet, or the plastic covering on metal building materials.**

6. **Destruction: This nearly always entails destroying your gas torch. Simply light the torch and place/tape it so that the burner heats up a small gas canister (it won't work on the large propane/butane bottles, but lighter fuel type cans are fine), a fuel tank or fuel line... and then run away.**

Fully fledged welding equipment can also prove useful, but it requires more skill to use, and its immense weight causes transport problems. Also, with arc welding equipment, you need a hefty power source. All in all, miniature blow torches perform better when considering the hassle you get in using the full sized equipment.

2.3.9 Glue/abrasives, paints and chemicals

When silence is of the greatest importance, or tools are not available, there are alternatives. Glues, glue sprays, paint and abrasive powders can cause as much hassle and destruction as any monkey wrench - and in the case of abrasive powders possibly much more.

The thing to be aware of is that certain types of glue are suited only to certain situations - such knowledge comes best through 'on the job' training.

There are various types of glue available. For sab work only the following are of any relevance...

- **Superglue/cyanoacrylate**

Standard equipment - comes in 5 gram tubes for about £2. Enough to do 10 or 20 locks if you are careful, but will completely snag up an engine carburettor if you pour the whole tube down the air intake.

The drawback with cyanoacrylate is that it will only fill small holes (e.g., Yale locks) effectively, and if you don't pump enough in then there are solvents available that will soften and dissolve the glue.

- **2-tube epoxy resin**

Terribly smelly stuff to use, but it is the most effective means to fill a large hole, pipe or gap. Epoxy resin normally comes in two tubes - the filler and the hardener. You must mix the correct proportions of these together, and then stuff it into the gap you want to fill. A chemical reaction then hardens the mixture - which has the practical benefit that if you loaded some into a syringe (without the needle in order to give you a large nozzle) you can use it as a mini-mastic gun and fill pipes/locks. Cost is around £2-£3 for 25g.

To fill a pipe you simply drill a small hole in the pipe (only works on pipes less than 1 inch diameter, which are empty or not under pressure) and fire in the epoxy. Epoxy, because it is a chemically set glue, has the benefit that it is less prone to attack by solvents than is cyanoacrylate.

- **Twin-tube epoxy resin**

A recent advance is the twin tube dispenser. What you get is essentially a double barrelled syringe. When you press the plunger the correct quantities of filler and hardener are dispensed. You then just mix them together. The twin-tube also has the benefit that you can fire the stuff into a large lock or padlock, and then mix in-situ using a small nail or screw (but it's better if they are mixed thoroughly before putting inside the lock). Cost is around £3 for 25g.

- **Anaerobic adhesives - 'Threadlock'/'Retainer'**

This is a type of glue which requires no air to set. The benefit is that you can unscrew nuts/bolts, cover them in threadlock, and them screw them back. They then will never be moved again.

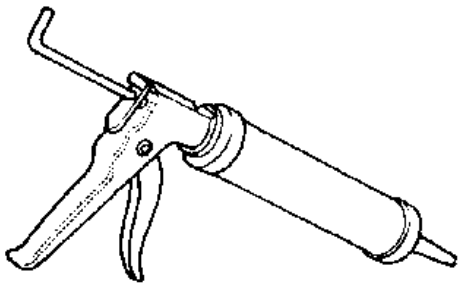
- **Potting compound**

This is normally sold by electrical hobbyist stores, prices ranging between £4 for 50g up to £8 for 500g. In effect it's like having a giant bag of epoxy, for less cost, but this material is designed specifically for filling large spaces such as enclosure boxes.

Examples of use would be modifying some delicate electrical equipment and then filling the box with potting compound. Another use would be pouring into electric motors, generators, or a confined space which encloses moving parts.

To use, get your bag, split the seal in the middle allowing the two halves of the bag to mix, then, when it begins to warm (an indication that it's setting) you cut a hole in the bag and pour into the receptacle.

Figure 47: Mastic gun



- **Mastic/mastic guns**

There are various types of mastic gun, and mastic syringe. The best sort are the adhesive sealants, or the

tar/bitumen based damp sealants. Mastic tends not to set very quickly, so its best use is really just to 'gum up' the works. However, it has the advantage that it comes in large tubes for very little cost (about £2-£5 per 250ml tube), and the gun fitting means you can pump large quantities very quickly though small holes using the nozzle attachment.

If you clean a tube afterwards (best to clean are bitumen tubes because this is more or less solvent in petrol) you can replace the original filling with grease, paint, shit, custard, etc., and use the tube again (how's that for recycling). Also, if you use lubricating grease, but you mix it thoroughly with sand or grinding powder before you fill the tube, it makes the perfect suspension medium for dispersing abrasive substances in precision engineered equipment - e.g., gearboxes.

Examples of use would be firing gunge into electric motors, gearboxes, locks, electrical equipment, carburettors, pipes and valves.

- **Abrasives**

Abrasive substances are primarily intended for damaging any precision engineered joint or gear - hence they are perfect for injecting into the sump of an engine, a gearbox, or the bearings of an electric motor or generator.

The main types of abrasive are 'tungsten-carbide' powder, or 'silicon-carbide', more commonly known as Carborundum powder. The powders come in different sizes, from lumpy 500 or 1000 grade (looks rather like sand), to the most insidious engine destroyer, 4000 grade (dust like). One cupful is enough to work away on a small engine (the size of an average family car) but on the giant sized earth movers you will need at least a pint (by volume, 200 grams by weight).

However, many larger engines are not instantly susceptible to grinding power. The oil filter will take out some of the powder before it has chance to take real effect. The oil filter then clogs, and the increase in oil pressure alerts the user that there is something wrong. Therefore, to be certain that you get your target, you should consider carefully removing the oil filter (if this is possible without losing the contents of the sump), poke holes in the filter paper using a screwdriver or sharpened spike, and then replace it. To do this you will need a special 'filter strap' available from any mechanics shop for £5-£10.

If you don't have grinding powder, or you run out halfway through a job, you may have to resort to what's around you. On building sites there is normally plenty of sand around - this makes an acceptable substitute, but will almost certainly clog the filter. Again, a few cups is sufficient. If you just want to hassle people, without the need to mess around with oil filters, then just fill the whole engine casing with sand until you can get no more in.

Getting grinding powder or sand into the sump of an engine, gearbox, or the bearing of an motor is not easy - generally you have to suspend it in another medium to form a slurry. You then inject or pour the slurry in. Almost certainly you will have to break or remove the filter gauze on the oil filler cap, but it you have a good enough injection system - for example a mastic gun with four feet of thin flexible tube on the end of the nozzle - you just remove the dip-stick, insert the tubing as far as possible, and pump away.

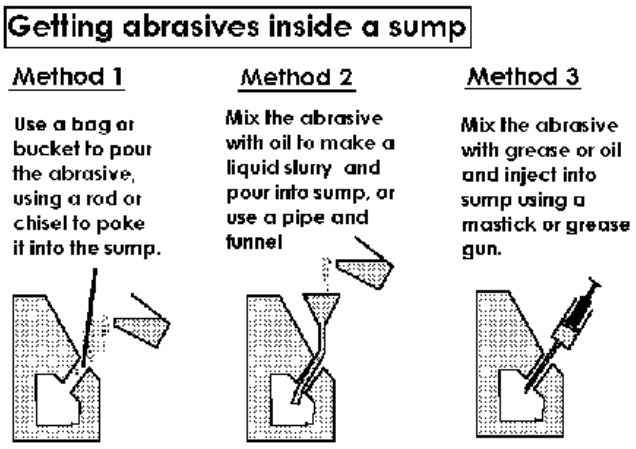
If you are just going to fill the oil sump with sand, just break the filter gauze on the filler spout with a blunt chisel or screwdriver, and then use a cut-off funnel or a cone made from a rolled up sheet of paper to fill. You will more than likely have to use the screwdriver or chisel as a ram-rod to get the stuff down.

Another option, that best lends itself to glass or perspex, is sandpaper. You simply get some sandpaper and a sanding block, and sand the glass - giving it a nice translucent frosting in the process.

Finally, even large lumps of metal can be employed not so much as abrasives, but in shot-blasting mode. This is best employed on the cylinder block of petrol engines - remove the spark plug using a plug spanner,

insert a couple of small steel ball-bearings (the sort kids play with), replace the plug and make it look as if no one had been there. When the engine is started up, within thirty seconds (if the spark plugs last that long!), the cylinder valves and piston are effectively pummelled into a new shape.

Figure 48: Getting abrasives into a sump



- **Paint**

Paint is traditionally used in graffiti - but it has other uses. For example, when poured into small holes/locks or precision moving parts, it makes a very good, if weak, glue, and at much less cost per unit volume.

There are also other uses. Get a polythene freezer bag, about 15cm - 20cm square. Fill the bag with paint. Close off the bag with a knot or wire tie. You now have an effective paint bomb to lob at your target.

Another option is to thin the paint (with water or thinners, as directed on the tin) and use a bicycle pump as a paint gun. With practice you can write quite legibly on billboards or buildings.

There are also other 'speciality' paints. The best example of this is 'electrically conductive' paint, normally silver based. This works to best effect on radio antennae which are plastic coated. If you paint the antenna in conductive paint, and then earth the paint to the nearest metal object using a piece of wire, the antenna will neither transmit nor receive (but in practice it's cheaper, but less subtle, just to snap the thing off anyway!).

Alternatively, conductive paint sprayed under pressure into delicate electrical equipment is a quick and effective way to write-off the item concerned.

- **Chemicals**

Fundamentally, I have a problem with using chemicals - they tend to be difficult to store and carry, and if not used with care could easily injure someone later.

In practice the only chemicals I use are acids. As with conductive paint, weak acid sprayed inside equipment can cause great damage - although I always mark the object afterward - "acid poured inside - take precaution against exposure".

It can be difficult getting hold of concentrated acids - although some art materials shops sell strong nitric acid for etching plates. I use ferric chloride, a weak acid, but one which is cheap and widely available from electrical hobbyist shops. You can buy a pint of acid, or the crystals to dissolve to make the acid, for about £5. Poured into any electrical equipment, electrical motors, etc., it causes large amounts of corrosion in a short period of time.

The other option for chemical use is paint stripper. You can do quite interesting graffiti using paint stripper on buildings. Paint stripper will also attack any lacquered or resinous board - printed circuit boards in electrical equipment for example. Again, you should always label items you have covered in paint stripper so that those discovering your work do not harm themselves.

Never forget that on any construction site there is a good supply of concentrated sulphuric acid - in the car/lorry batteries that are part of the engine. Removing these is not much of a problem - all you have to do then is unplug the cell caps and up end the battery over the nearest piece of delicate electrical equipment - the alternator on an engine or generator for example. But be careful - this stuff will burn you if you get it on your skin or clothes. It's also a good idea to leave a note that the item concerned has had acid poured all over it incase those discovering your work hurt themselves.

2.4 Ropes and ladders

There are two sides to using ropes and ladders - gaining access and doing damage. At some point in doing sabotage, you are going to need ropes and ladders. If you have climbing experience you can scale buildings, or abseil down into quarries. I tend not to do this as it restricts your avenues of escape.

The most likely use of ropes for the average sab will be scaling walls and fences. Presented with a perimeter fence I prefer to cut my way through rather than go over. If you are crossing a fence, especially one topped with barbed/razor wire, then you should take a piece of old carpet to put over the top to prevent getting caught up on the wire.

Ladders are a problem on sab outings - they're not exactly the sort of thing you can carry inconspicuously. The alternative is to take a rope ladder, like those used by cavers, as it rolls away into your rucksack.

Before using ropes to scale things you should get some experience first - through your local mountaineering club for example.

In terms of doing damage, ropes can be most effective - as described earlier in relation to the 'rope winch'. If you can get hold of a block and tackle - even better. Ropes are also useful for scaling scaffolding, and then pulling it over.

2.5 Preparing/storing your tools

- **Storage/purchase**

As stated earlier, unless it is unavoidable, you should never take your tools home - stash them elsewhere. If the police come calling and they find your tools, a quick forensic examination will trace you to your last little escapade.

This presents problems of how to store them. The best thing I can recommend are old ammunition cases, purchasable from your local army surplus shop. They are near waterproof, and strong enough (with lockable lids) to take the beatings when being buried, dug up, or slung over the nearest hedge when making a hasty escape.

If these are not available, you should use some form of watertight container - a plastic tub or biscuit tin, etc. Another option is to wrap your tools in oily rags, but they will still corrode over time.

When getting tools for sab work, never buy anything unique - it's more easily traceable. Buy average, mass produced equipment, not the local hardware stores' own brand. If using old tools, remove any identifying marks before using them. Most importantly, never get tools by mail order, and never pay for them by cheque or credit card - all 'easy to pay' types of money are traceable, cash isn't.

A good source of old tools are second hand shops, car boot sales and village shows. Buying tools here makes

them untraceable.

- **Preparation**

I rarely grab my tools and run for the hit site - a few days before I check them, do any repairs, oil/sharpen if necessary, and finally give them all a good clean to get rid of any accidental fingerprints - then next time I touch them I'll be wearing gloves.

Rather than take everything, your scoping of the hit as part of the planning process should tell you exactly what you will need. If possible, rather than taking two similar tools, take one - e.g., why take light and heavy duty cutters when heavy duty will do both.

An essential consideration is what you will carry your tools in. I have a tool belt, with small loops and flaps fixed by studs, which I insert everything in. It suits me as I work alone, but when working in groups you will need a bag. Also, where there is more than one person, elect one person to keep a check and the tool bag to ensure that nothing is left behind. With my tool belt, if there is a gap then I know something's missing. Things like containers, glue or sockets for socket sets go in coat pockets or rucksacks.

Glue, paint, powder etc. should be removed from any wrapping materials - never dispose of this material at home!! If the police raid they will go through your rubbish too! Where possible, remove any identifying marks from the containers. If this is not possible repack the material in containers that have no markings (this is generally not possible for glue, so I try to buy glue in plastic/glass containers with peel off/soak off paper labels.

You should always take containers away with you - apart from the precaution against accidental fingerprints, it's not wise to actually hand the police evidence. Again, never dispose of used containers in places where they might be associated with you.

As with everything else, your carrying bag/belt should be bought specifically - don't use any of your old rucksacks just in case you have to dump it. Fabric does not render up good fingerprints, so handling is less of a problem, but anything plastic coated or metal will - so beware.

2.6 Health and safety

One thing must be made clear - this work is dangerous. For example, if you were smoking and you accidentally cut a fuel line, you go up in flames (so no smoking on the job!). If you are standing under the jib of an earth mover and you cut the hydraulic line to the ram supporting the jib, it will collapse on top of you (you will either be trapped till you are freed, or squashed!). This illustrates just a few of the problems.

To ensure your safety you be aware of a few simple things....

A. Eyes:

Where possible, wear goggles. The main danger is getting hydraulic fluid or fuel in your eyes. Also, when drilling or hammering, it is quite easy to get things in your eyes. If you wear glasses it provides some protection - but not as much as a proper pair of safety goggles.

B. Hands:

Don't wear lightweight gloves - tough gardening gloves should be considered a minimum. You will be handling sharp objects which can cut or stab you. Small cuts may not seem serious, but from even the smallest cut they may be able to find traces of blood - and that means they'll potentially have a genetic fingerprint of you. Good gloves to wear are industrial gloves with tough woven materials, or motorcycle gloves.

C. Footwear:

Select as necessary. It's generally not a good idea to sab in sandals!. Boots should be considered a bare minimum. Toe capped boots are better. Wellingtons offer some protection, more especially if you have to wade through mud or water, but they can be easily pierced by sharp objects and they're difficult to run in. If possible, get Wellingtons which conform to safety-shoe regulations.

Additionally, if you have to wear your boots for any other purpose than sabbing, you should cover them with a big sock, or tie a sack around each foot - this prevents you leaving footprints behind. If the ground is so hard you won't leave footprints, or you keep your boots in your tool stash, this precaution won't be necessary.

If you are welding, burning or using a blow torch, you gloves need to be heat resistant, and must not melt (ie, no PVC or plastic).

D. Clothing:

If possible, nothing loose fitting. Loose fitting clothes will snag on objects, leaving fragments behind for the police to trace. It also means that you will be more likely to get caught up on barbed wire. I prefer jeans and a close fitting anorak. You should try to ensure that all parts of your body are covered - you risk cutting yourself if bits of your skin are exposed. If you are going to be setting fire to things, try and make sure that what you are wearing is as non-flammable as possible - cotton based textiles are better than nylon.

E. Head:

If you are going into a quarry, or if you are going to be toppling things/working inside buildings, wear a hard hat. It is always a good idea to wear something on your head anyway so that you don't leave traces of hair behind you. I prefer a wide brimmed bush hat. It hides my hippy locks, and its wide brim enables me to tilt my head and cover my face if someone is looking at me.

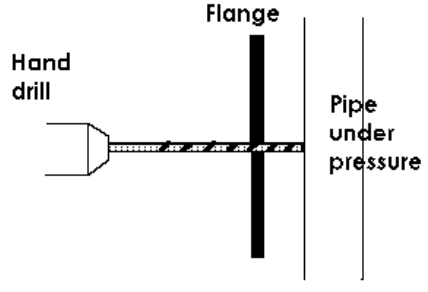
F. Cutting operations:

The main thing to beware of when cutting, especially wires under tension, is that the thing won't spring back in your face.

G. Drilling operations:

If you are drilling you should wear goggles. Precautions need to be taken when drilling pipes containing fluid under pressure. It's generally not a good idea to drill a pipe full of liquid using a power drill - when you penetrate the pipe you will spray its contents everywhere. Also, if the pipe contains fuel/gas the heat/sparks from the power drill could ignite it. When drilling pipes under pressure you should thread a wooden flange onto the drill bit first, and then drill the pipe. This way, if the pipe sprays, it won't spray over you - it hits the flange and drips down.

Figure 49: Drilling pipes under pressure



H. Cutting/drilling hydraulic lines and cables:

You must always ensure that any hydraulic lines you cut are not going to release the pressure which is holding what you or your associates are standing on or under. For example, on a JCB there are flexible pipes running from the body on to the digger arm. If the arm is suspended in mid air, and you cut the pipe, it will come crashing down. If you are uncertain either trace the pipe to see which hydraulic ram it connects to, or don't cut it.

Cables under tension also pose hazards. If you cut the cable on a crane, you could drop the jib. The other main hazard is that as you cut the cable, the end will fly back and hit the person standing a few feet away.

I. Fire/chemicals:

When using chemicals wear clothing and goggles to ensure that they don't splash on your skin. If you get some on you find some water and wash it off straight away. If you get some in your eyes get some clean water and wash it out immediately - then get off the site and seek medical help.

When setting fire to things - especially where fuel or gas is involved - take precautions to ensure that you are nowhere nearby when the thing goes up. Gas and petrol fumes can flow across the ground, so that even if you are not standing too close you can get a flash as the vapour ignites which will burn you. There are two simple ways to set fire to something; lob a petrol bomb at it or use a time delay incendiary device.

J. Electricity:

This potentially poses the most serious hazard. If you cut a live mains cable, it's 50:50 if it'll earth through you or not. If it does you are going to get hurt. At home the 240 volt supply can give you quite a kick. On industrial sites the voltages involved can be 415 volts or higher. If you start messing with electricity substations or power line poles you are talking a minimum of 11,000 volts - this will kill you.

On most mobile equipment such as earth movers the voltages involved are low - 12v to 50v. The problem is stationary equipment - if connected to the mains you could be in trouble. You should consider investing in a live wire detector, available from most DIY shops. This will signal if the wire you are about to cut is carrying an alternating main current (AC). However, the detectors have problems picking up direct current (DC) which you sometimes find on industrial premises. If you are unsure - don't cut.

K. Falls:

Never climb on anything which may give way on you, topple over, or which you do not have an easy standing position on. You should always have both hands free when working - never get into the situation of balancing, relying on one hand hold, or having to stretch to cut or drill - you may fall. Also beware of standing on the mobile parts of equipment - the arm or jib of an earth mover for example, when you are cutting pipes or cables - the whole thing may crash away below you.

L. Ignition sources:

An average machine has electrical cable and fuel lines in proximity to one another. If you cut live electric cables, and you have cut or are about to cut the fuel lines, and later the electric cables touch the body of the equipment or each other to create a spark, you might suddenly find that you are engulfed in flames. Unless you are certain that the electric is off or isolated (to isolate the electricity just remove the source by chopping through the mains or battery cables first) then don't cut both electrical and fuel cables in close proximity to one another.

Chemicals can also be flammable. Lead-acid batteries, if you remove the cell caps, briefly give off flammable vapour - if you are smoking when you do this the battery might blow up in your face. Likewise, the vapour from solvents, paints and fuel can all evaporate, move, and be ignited by sparks, bright lights or

matches/cigarettes.

You should always ensure that your work does not create a fire hazard (unless you are deliberately torching something) which will endanger you, those with you, or those who might discover your handy-work.

M. First aid kit:

You should always take some form of first aid kit - at least a few plasters and a bottle of clean water. If you don't use it on site then you should wash your hands with the water straight after leaving the site. A first aid kit is important - you should have plasters and antiseptic wipes to clean wounds. Remember, it you bleed everywhere, apart from the obvious health impact, they're going to have material to get a genetic finger print of you.

The most important thing to take with you in terms of health and safety is common sense - never do anything unless you've thought about the implications of that action first!

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3. PLANNING A HIT

3.1 Coordination vs. mindless vandalism

It is necessary to make the distinction between a eco-sabotage 'hit' and vandalism. A hit is aimed at a specific site, for a specific reason - sometimes you may only be hitting one part of a large site. Vandalism on the other hand is a frenzy of activity which gives no thought to the purpose for which it is being carried out.

The main factor in a 'hit' is the minimisation of risk to yourselves, and other human beings/animals involved on that site. The hit should not leave traps or damage which might cause someone to be harmed. It should not cause uncontrolled pollution of the environment. Note here the use of the word uncontrolled, since a hit may involve small amounts of pollution through the spilling of fuel, hydraulic fluid, and the generation of large quantities of waste equipment. You must be aware of this fact and plan to minimise pollution - for example, the uncontrolled release of oil or fuel may mean that fuel enters storm drains, or is washed by the rain, ultimately ending up as a huge slick in the local river.

A good hit does not happen out of the blue (or, at least, rarely). Planning is essential for three reasons...

- It means you know the site, know what is involved, and you can get in and out with as little trouble as possible;
- You know what equipment to take with you - an essential consideration since the lots of the wrong equipment will not get you very far, whereas a little of the right equipment can enable you to cause havoc;
- It stops you getting caught! As well as planning on site to avoid security/staff, you should plan your entry, getaway and alibis to ensure that you will never be associated with the incident.

3.2 Selecting a site

Primarily, you should always have a justifiable reason for what you are doing. In practice, an earth mover working to build a children's playground does not pose a problem, but an earth mover working on a road project that destroys the countryside does.

You must consider, add appropriate weight to the material considerations, and then ultimately justify any act you propose to carry out.

3.2.1 'Viable targets'

You must select the target, taking into account the threat it poses. The response should then be in proportion to this threat. If a farmer is deliberately destroying a wildlife site then the proportionate action would be to take out those pieces of equipment that the work is being done with - what would not be justifiable would be burning down the whole barn with the equipment in.

There is also the idea of 'escalation'. The harder you hit a site, the more action the operator is going to take to protect the equipment. This means that it is more difficult to do a properly directed hit and you may have to resort to indiscriminate means of action such as fire, taking out power supplies, etc. Always have a thought out plan for what will happen if you do not succeed in stopping the action first time - do not needlessly escalate the conflict.

Finally, the hit should be justifiable to the public at large - as ultimately they are the people who will pass judgement. It does not matter what the police or the site owner think - if somebody is doing something perceived by the public as 'bad', then your taking action will secure public support. Indiscriminate action that causes pollution, harm to people, animals or the wider countryside will not receive general acceptance.

3.2.2 Collective or individual operations

Next you must decide how you plan to hit the site. Can it be done by yourself alone (my preference - I don't like incriminating others), or will you need help?

If you decide that others will be involved this sets up certain problems. For example, who makes decisions? Who takes on what task? If one person is caught, what do the others do? All these matters need to be resolved before you hit the site.

3.2.3 One-off or attrition hits

Finally, you must decide what your hit is designed to achieve, and what will happen in the future. There are three key considerations...

l How many chances will you get to hit the site? If there is little security you will be able to take out equipment with few considerations about getting caught. However, you will probably not get the same chance again.

l Next, are you trying to close the place down, or just remove the offending problem? This will determine the weight of your response.

l Finally, is the objective best achieved by a one-off super destructive hit where you take out the entire site, or would nibbling away here and there over a period of time achieve a better result?

Having decided what the priority is, you should plan accordingly.

3.3 Reconnaissance

Reconnaissance is essential. It is what enables you to get into, move around, and get out of a site without getting lost, hurt or caught. It also enables you to assess the needs of the hit in terms of equipment.

3.3.1 Maps

Maps are important - mainly in getting on and off the site. As well as having one way in, it is a good idea to have more than one way out. For example, where a site is close to a river, a railway line and a main road, which is the safest means of access? These factors can be assessed from the map, and then tested/observed on the ground before the hit.

The maps I use most are the 1:25,000 scale 'Pathfinder' Ordnance Survey maps. These provide details of the land in the area, field boundaries, roads, footpaths, and any nearby buildings.

There are two ways to get a map of the site:

l Ordnance Survey, at a HMSO and specialist map shops around the country, print up to date digital maps at 1:10,000 or 1:1,000 scale, showing the most recent information on a site. These maps cost around £40. The 1:10,000 maps, and sometimes the 1:1,000 maps can also be found in many local libraries, but they tend to be a few years out of date.

l At some point someone must have applied for planning permission for the site. The planning permission, together with detailed site maps, building drawings and details of any plant on site are kept on 'public registers' with the local planning authority - normally the District council. However, care must be exercised or someone may connect a hippy inspecting the planning file one week, with the destruction of that site the next.

3.3.2 Photographs

If few details are available about the site from maps or planning permissions, the next best option is to get some photographs. One warning about this - never get the photographs developed by a postal service, and if you take them to a shop, never take them to a shop near the site you intend to hit.

Also, once you have planned the hit, get rid of the photos the day before you carry the hit out. Never dump the photos in the rubbish - either dispose of them elsewhere or keep them in your stash (if you keep them in the stash, wipe off any finger prints first).

3.3.3 Activity schedules

Where the site is part of a business, or someone lives there, you should watch the place for a week or two to get an idea of when people come and go. Even on a site which is continually occupied, there may be a window of opportunity when you can get in, carry out the hit, and get out again.

Also, if the hit is dependent upon the presence of particular equipment or goods, keeping a watch will allow you to plan the hit for when the target is there.

3.3.4 Security details

When carrying out reconnaissance, never barge up to the perimeter fence and start taking photos! Approach any site with caution. Check for the presence of alarm systems, closed circuit TV (CCTV) cameras, security patrols, guard dogs, or even infrared/microwave motion detectors mounted in the open ground or inside buildings. If you discover any security precautions, you will have to find a way to bypass these systems.

You should also be aware that there is increasing use of CCTV in towns across the UK. If you have to drive or walk through an area with CCTV to reach the target, then they only have to check the tapes to get your mugshot/car registration.

Also, because of the threat of sabotage, it is possible that equipment may be alarmed - equipment similar to car alarms is relatively simple to fit to earth movers, and fitting building security systems to a barn or equipment compound is not that difficult. As a general precaution the first thing I do when confronted with an earth mover is check for alarms. I disconnect any horns or sirens first before doing anything else. Even then, use caution when working. Things which have easy external access are unlikely to be alarmed - but lift the bonnet and all hell could break loose. Even when things have been alarmed there are ways around the problem - filling the alarm siren full of mastic for example.

3.4 Planning

If anything goes wrong - if security guards or the police turn up, if you set off all the alarm systems, or if you hurt yourself and need the quickest route out - it is planning the hit that will save you from ultimate imprisonment and the curtailing of your sabbing career. The planning process can be broken down into a number of simple topics or stages. In effect this section reproduces what goes through my mind when I plan any hit.

3.4.1 Access/escape

Selecting your means of access and exit is as important as the sabbing itself. You may need to get into somewhere avoiding security cameras or floodlighting. To get out you may need to chop through fences.

If possible I prefer to have different routes of access and exit - this is sensible because if your means of access is discovered, a hole in the fence for example, then it does not preclude your planned means of escape.

Don't just plan the access and exit to the site itself either - plan the whole route from the point where you leave your transport through to where you are picked up again. Sometimes it is better to walk three miles across country rather than have to drive a car down the road running to the site.

As well as your means of access and escape, if anything goes wrong you will need to ensure an alternative route. For example, one site I hit had a railway on one side and a river down the other, but only one road running to the site itself. Had the road been blocked it would have been easy to just run down the railway track, or even just jump in the river and float away.

If you can get someone to drop you off, it is always better if you can be picked up somewhere else so as not to attract attention. If you have to rely on yourself for transport you will need to ensure that your car/bike is not visible - it may even be worth investing in some camouflage netting from your local army surplus store if there is a lack of natural cover.

3.4.2 Staffing/security

If there are staff on site you will have problems. If the guards just sit in their hut, never walk around and do not have CCTV, you can get in, do the biz and get out fairly easily - you will just have to adapt your methods to be silent.

The problem normally arises when you are not aware that people are there, until you are confronted by them. You should have picked up the likelihood of staff being on site when you carried out your initial reconnaissance - but sometimes things happen as you expect them to.

If confronted by someone - just leg it. Don't provoke a confrontation. Any sensible person would not chase someone who was carrying a hammer or crowbar. If you are cornered, just give up - resistance will count against you in court.

It is possible to plan alternatives where staff are on site. You can arrange a distraction - though this will not give you very long to work. Alternately you could use the 'cry wolf' approach. You keep cutting holes in the fence and setting off alarms for a few weeks, but not actually entering the site. Over this time the staff will become tired of the incidents, and will not treat it seriously. Then, one night, you actually do do something.

If all else fails, and you are sure that you must carry out the hit, you can passively 'neutralise' the staff. This approach only really works with portakabins. While the staff are inside, block the doors and cut the phone/electricity cables. Then, while confusion reigns in the cabin and they haven't sussed that breaking the windows is the only way out, do the hit. If you block someone inside where there is no possible means of escape, always phone the police straight away to release them when you've got out.

3.4.3 Equipment

As part of your reconnaissance you should get as much detail as possible of the equipment on site, and its design and construction, in order to assess your tooling needs. You could turn up with the standard kit, outlined earlier, but if you can tailor your tooling resources to the equipment concerned, you will get a better result.

3.4.4 Entry

Getting into the site is very important - particularly if there are people around. You may need to devise a way of getting in which does not attract attention - particularly if you want to use the same route out again.

When scoping a site for entry I have a few basic tactics:

- **Fences:**
  Go through them, not over them - if you have bolt cutters it won't take any longer, and there is less risk of being spotted. (Tip - with chain link fences, just cut the same thread of wire in the fence top, bottom, and three or four places in between, then pull out the wire with your pliers. The fence will then just fall into two.)
- **Roads:** Try and keep off them. If there are hedges or walls, travel behind them until you get to the site.
- **Walls:**
  Not much option but to go over - in which case you may need extra equipment. I would not rely on exiting over a wall, just in case someone takes your ladder away.
- **Ditches/rivers:**
  These can provide good cover, so long as they have a dry bank. If you can, cross the water coming in - it's always better to work dry. If you have to you can always splash through on your way out.
- **Gates:**
  If the gate is not locked - fine. If it is, you'll need bolt cutters to get the padlock off. If possible try and get a padlock which looks the same so that you can remove it on your way out without problems. Never leave a cut padlock in view - it's a sure sign to a passing policeman that someone's inside.
- **Doors:**
  Doors are problematic. They are very easy things to alarm, either with mechanical micro-switches or magnetic reed switches. If in doubt, you may always try going through the door itself, but the cutting operations will be noisy.
- **Open concrete yards/grass:**
  I avoid any open area, especially around factories/offices. Open areas are perfect for using CCTV to pick people up. Another example of open areas to avoid are power stations. Most power stations have clear paths cut through the undergrowth around them. This is because specialised microwave beams run down the avenues, and will sound an alarm when broken by anything more than 2 feet tall.

You will have to consider the options for your own site and work accordingly.

3.4.5 Workplan and timing

I always stick to a work plan. I calculate how long it will take to travel to the point of access; enter the site; travel within the site; sabotage each piece of equipment; exit the site; and travel back to my transport. I also work an order in which to hit each thing, taking into account problems such as being seen, setting off alarms, accommodating staff movements. This may seem unduly rigid, but it is a very effective way of disciplining yourself to do what you came to do, and get out. Also, where considerations such as police patrols, staff change-overs, or covering yourself with an alibi are concerned, timing is essential.

After some practice you will be able to look at the equipment you want to take out and for each one estimate the time to complete the work. Alternatively, if all the equipment is the same (e.g., all the hits are on earth movers), think of a reasonable time and multiply it by the number of hits. Work out the whole programme of events in your mind, and rehearse it in your head for a few days before the event. Then, when you get inside, you won't have to waste time thinking about what to do.

A key consideration in the workplan, if not working alone, is when you are due to be picked up by your transport. When

working with others, if I give a precise time to be picked up, and I will ensure that, to the second, I am there. If, for example, travelling into the site takes longer than you anticipate, you should assume your trip out takes long too, and deduct time from your work allocation. Never let your transport sit around, or endlessly circle past waiting for you - it attracts attention. If possible, always arrange a place where you can wait for your transport without being seen, then you will not have to worry if you arrive early.

3.4.6 Special considerations

"*The best laid plans of mice and men....*" - there is always something you didn't think of. You have to take this into account. Give thought to what happens if you lose a screwdriver, or what happens if the thing you want to hit is not there.

In terms of planning, the biggest consideration must be how you use the time - and how the availability of it affects your use of tools. If you were planting incendiary devices, you want them all to go off at the same time. Likewise, if you are relying on staff using the equipment as normal in the morning to give your work, e.g. abrasives in the sump, time to work, then you will need to cover your work. This all takes extra time.

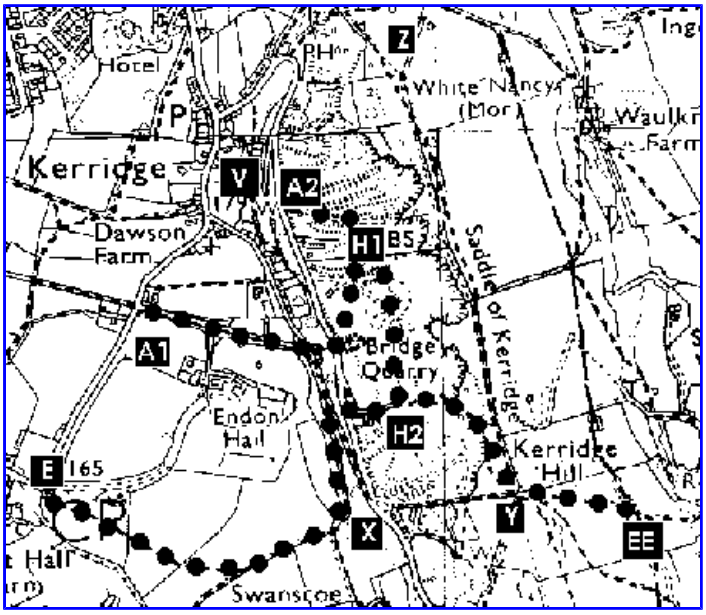
Consider also situations which may assist/prevent the hit. For example noise may be a prime consideration, but if you hit in the middle of a heavy rain storm, the noise of the wind and falling rain may cover the noise you make. Likewise, the hit may require travelling long distances cross-country to reach the site, which is best done under a full moon. But if it is cloudy that night, you may have to abort - perhaps until the next full moon. The best way to take problems and setbacks into consideration is to allocate extra time in your workplan.

3.5 Execution - an example

The plan on the following page shows an area of quarries near the Peak District. Let's assume for the moment that the site needs to be hit because of the damage that it causes to a nearby wildlife site. How do we go about making a detailed workplan of how to carry out the hit?

The following sections take you through the process of planning, in essence, "*the perfect crime*". It may sound an elaborate, or excessive procedure to follow but unless you consider all the options, at some time, you are more likely to get caught.

Figure 50: Example of target



3.5.1 Conceptualisation

Conceptualisation is all about visualising the task in your head, and finding ways to solve it. The best place to start is to actually visit the site, or check it out on a map, and then check your solutions later when you recon. the site.

The previous page gives a map of the site to be hit. It presents a number of problems and opportunities...

1. Access is not easy because all roads to the site pass the village (marked 'V');
2. There is, because of the quarry faces, restricted access to the inside of the quarry;
3. The best drop-off and pick-up points are half a mile away, with a cross-country route in between;
4. Reconnaissance will be easy because of the presence of many rights of way, the best of which runs from point 'X' to point 'Y' and 'Z', giving views over the quarry;
5. In an emergency, assuming that the police or public are alerted, it may not be possible to get back to the pick-up point;
6. The quarry equipment is based at two areas within the quarry (marked H1 and H2).

In considering the problem, we must 'characterise' all these key features of the hit, and produce appropriate responses to each.

3.5.2 Feasibility study

In considering if the hit is feasible, I would consider matters such as 'will the hit achieve the required result?', as well as the more conventional 'can I do it?' questions.

If you can justify the action, and if, when considering the key problems/opportunities the site presents you can come up with realistic solutions to the problem, then you can carry on to the next stage.

3.5.3 Reconnaissance

Having considered the problems, and thought up solutions, reconnaissance will tell you if your solutions will work. It will also give you essential information as to the layout of the facilities you want to hit, what tooling will be required, and an idea of the timings involved for the workplan.

For me, a proper recon. consists of the following things...

- **Checking access/exit routes:**
  You must check that what you planned on the map can be achieved on the ground. The best way to do this is to walk the route - if this can be done without arousing suspicion. It will also enable you to familiarise yourself with the route if you have to do it in the dark. On the plan, the proposed access/exit routes from A1/A2, and to E and EE, should be checked. You can then select the best way in, and the options to get out.
- **Mapping the site:**
  You must familiarise yourself with the layout of the site. Sketch plans, take photos, and memorise a picture of the site in your head. There are also other sources of information you can access. 1:10,000 scale maps will give you detail about the position of buildings, and the planning permission or waste licenses held by your local authority will contain plans detailing not only the location of buildings, but also the layout of rooms inside the building, the location of drainage pipes, services, and perhaps even an identification of what each building is for. Use of council documents is especially useful when you have no way of directly scoping the site. Considering the plan, you should identify the locations, H1 and H2, and the ways to travel between these points and the access/entry.
- **Target identification:**
  List all the equipment on the site relevant to the issue you are disagreeing with. Note its position, what it is, any key features such as the position of power supplies, generators, motors, engines, cooling water supplies, fuel tanks, etc. Mobile equipment such as earth movers are more simple to deal with than fixed plant because they are generally built to similar standards. Considering the plan, the easiest thing would be to take photos of the equipment at H1 and H2 for close study later.
- **Identification of routes around the site:**
  Having identified access, exit, and position of the hit(s), find easy routes between these points within the site, avoiding any problems such as holes, floodlights, CCTV poles, etc.
- **Identification of potential hazards:**
  In practice, this means identifying the things that will get you caught. You will need to confirm the hours of operation so that no one will be there when you turn up. If there are people there, you will need to observe their movements to find out if there is the opportunity to carry out the hit. Finally, you will have to consider other human related problems such as the view from nearby properties, the presence of police patrols, and the likelihood of meeting someone on your way to or from the site. You should also conduct a thorough check for CCTV systems, security systems, and any indication that the equipment you want to hit is alarmed. Considering the plan, you should check the ease of access/exit, particularly on the route to EE. You would also need to assess the problems posed by the proximity to the village, V, and nearby residences.
- **Commitment/abort procedure:**
  What are you going to do if you can't carry out the hit? You will need to plan a route to the pick-up point, and you may have to find somewhere to hide while you are waiting. Considering the plan, the simplest thing would be to give up at the

boundary of the site, follow the road to point X, and then head for E to wait for pick-up, or to EE via Y to the alternate pick-up.

Bringing all this data together will give you your working plan.

3.5.4 Mapping out your workplan

When you have the results of your recon, start mapping out your workplan. First, work out how much time you need to do the hit on each piece of equipment, and what tooling you will need. Then, taking into account travel times, work out how long you will be inside the site. Finally, work out how long it will take to get to and from your transport. This will give you the total time the hit will take, and you will be able to plan schedules with your associates and your alibis accordingly.

Just in case of incident, you should also plan an alternative route out. Always assume when planning this route that someone is after you, or that you have injured yourself. If you are relying on someone else for transport, you will also need to arrange another pick-up point, and a time to be there. Realistically the pick up will need to be some distance from the site, or you will have to consider finding your own way home cross-country.

3.5.5 Getting there

As noted above, you must access the site in a way which does not attract attention - especially if you intend to exit the same way.

If you are using your own transport, it will need to be stored while you are away. This relies on two principles - camouflage, or putting it where no one will think it out of place. For example, a single car in a lay-by on the side of the road attracts attention. A car in a pub car park, where there are many others parked, does not.

If you are being dropped off, don't waste time, Have all your plans clear before you get there, arrive, gloves on, and quickly exit the vehicle with your tools.

On the plan, there is a pub in the village. If you were sure of getting back to the pub before closing time you could leave you transport at the pub, and access via A2 - although you might arouse interest if you returned covered in grease and hydraulic fluid. Alternatively, you could be dropped off at A1, getting there without travelling through the village, and return to E (my preference).

3.5.6 Commitment point

Do not proceed with the hit if it is obvious that it cannot be achieved - this is usually when someone is present on the site when you didn't expect it, or the conditions on the site have changed, for example the weather, meaning that the hit cannot take place. In these situations it is essential that you have a way of travelling to the pick-up point, and that you can wait there for your transport. Going back to the plan, you will actually have more than one commitment point. There will be the point at the site boundary, travelling from A1. If problems arose, you simply go down the road to point 'X' and head for point 'E' or 'EE'. However, because there are two hit points, 'H1' and 'H2', separated by a great distance, you should assess each one independently and act accordingly.

3.5.7 Working

The benefit of having a plan of work is that you don't waste time on site. You know where to go, you know what to hit and what tools you have to do the job. If there is more than one of you, you should also work out specific responsibilities for working. If you must abandon the workplan, then by necessity, this should entail aborting the whole hit.

3.5.8 When things go wrong

If your planning work was conducted well, things should not go wrong. Things only go wrong because you did not consider them during the planning stage, or they were not anticipated. If things go wrong, don't hang around, make for the exit. If necessary, because the exit route is not available, use your alternative. If you are injured, there are various options. If alone, you should try and make it out straight away, but if this is not possible, accept defeat, and raise the alarm/find help. If there is more than one of you then there is always the possibility of help. If you are cornered, or caught, give in - they probably have a reasonable identification for you by then anyway.

3.5.9 Leaving

Leave as planned. If you have to use another route out, use your alternative. If you abandon your plan you risk getting lost, trapped, or seen by people/guards/police/CCTV. The only time to abandon your exit route is when there is no alternative because you are being pursued. Under normal circumstances, return to your transport. If you have planned accordingly, you should turn up a few minutes early and have somewhere to wait out of view. It is also a good idea to have some soap and water so that you can wash off any identifying dirt and grease. It is also a good idea to change your footwear before getting your pick-up, or if there is no time, put some plastic carrier bags around your feet to prevent incriminating dirt/soil getting inside the vehicle.

3.5.10 Afterwards

If possible, do not go home immediately. Go to your stash and dump your tools. You should also consider changing clothes and footwear and leaving it there too. You should also wash off if you haven't done so already. If you have any containers or rubbish, try and get rid of them, or leave them in your stash - don't take anything home. Then, go home, relax, or better still, party!

3.6 Alibis

The prime motive in planning a hit is to avoid detection and capture, and having done that, hiding all the incriminating evidence which may associate you with the incident. This will often be enough since if the hit was small, the site operator may not report it (in fact, it may be in their interest not to regularly report things because it gives them adverse publicity, and may increase their insurance premiums).

However, in cases where you can expect lots of trouble afterward, you should consider arranging an alibi. There are a number of options...

- Get a friend to stay in your home and make a long phone call (so that it is logged on your billing record) to another friend - the other friend then states that the call was from you, and the BT record of calls kept at the exchange confirms the date and time of the call;
- If you have an account with a computer bulletin board system, get a friend to stay in your house, give them your password, and let them use it for a couple of hours. Then you will have a log with BT and the BBS system of your line usage, and because the password is private, it is a good excuse that no one else used it;
- Arrange a party with your friends - all of whom must agree to state you were at the party the whole time;
- Record the evening's TV on video, or radio on a tape - then memorise it all the instant you get home. When questioned about what you did on your evening in you can quote your evening TV/radio usage accurately.

NB: It is also not a good idea to keep this book in your house for a few weeks after a hit - in itself it could be incriminating!!

3.7 Return visits

From experience, you will have an irresistible urge to go back and view your damage the next day when it has been discovered - try and avoid doing this. Unless you hit on a main road or the side of a railway line (so you can view as you travel by), or within view of a well used public building which you have legitimate business being in, going back to the site will only draw attention to yourself.

The same goes for a 'return hit'. Let the heat die down - for a week at least. Unless it is absolutely necessary I would not return to hit the site again until one or two months later, or I had evidence from other sources, unconnected with the original hit, that things had calmed down.

Even then, be cautious. You should also recon. the site before hitting again to be certain that no new security systems have been established, and that work patterns have not changed.

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4. Precautions

4.1 Identification

Identification of the perpetrators of eco-sabotage should be a matter of accident. It will happen when you unwittingly stroll into the view of a CCTV camera, or when an uninvited policeman joins you when you least expect.

Identification is calculable risk - and like any other risk it can be reduce or eliminated by proper planning.

When considering the feasibility of your hit, unless you wish to be a martyr and get caught, you should always consider the risk of identification. This risk is involves mainly...

- The risk of being seen by somebody on adjacent premises (see 'eyewitnesses');
- The risk of being seen/caught by someone on site;
- The risk of being recorded on a security camera;
- The risk of being caught by police/security patrols.

By carrying out proper reconnaissance, and noting the position of security systems, nearby premises and the hours of occupation on the site you should be able to minimise the risk. In practice it is never possible to eliminate the risk because of the unexpected - mainly the fact that your work will attract the attention of the police or security personnel.

When carrying out the hit you should consider means of avoiding visual detection. Camouflage is a good way to avoid distant detection, but this must be selected carefully. Think about the situation you are working under...

- Even in the dead of night, especially in/near urban areas, it is rarely truly black, so black clothing is not appropriate. Dark shades of blue and grey are better - even in dim light black will always stand out against a light coloured background;
- In day time it may be better to dress to mislead, ie, dress as if you belong to avoid being spotted as something 'abnormal' - for example dressing up as an average workman in jeans, check-shirt and yellow hard hat;
- If working in countryside areas, or building sites on the edge of the countryside, khaki and camouflage jackets give the best protection. If working in the dusk/dark you should also consider wearing a balaclava, or blacking out your face - you would be surprised how well white faces stand out in torchlight!
- Sometimes the backdrop is important. If you are working under floodlights against a pale or white background (the yellow cabs of construction equipment for example), by wearing black you will stand out. It may be necessary to take some sort of cape or cloak made of different coloured material to avoid detection. This may seem extreme, but many CCTV cameras have a specific focus field - if you remain some distance away, and present little colour contrast to the background (especially with black and white cameras) you may be able to sneak past without the camera getting any clear image of you.

An alternative, if identification is likely, is to disguise. As noted above, by dressing as if you 'belong' to the scenario - e.g. by dressing as a workman carrying out 'routine maintenance' to the earth moving equipment detection can be avoided. You can also change your appearance using wigs, by padding your coat to make you look bigger, or by masking your features using a hat or hood.

4.2 Paper trails

Modern electrical systems and banking systems make life very easy. You can travel anywhere in the world using your credit card, pay for products by cheque, or use your cards/personal documents (e.g., passport/driving licence) as a means of identification to join clubs. In practice, this leaves a trail of 'paper' - little pieces of information that show you have been there.

Credit card transactions are logged on computer - as are some cheque payments. By cross-referencing purchases of certain equipment with card numbers, certain individuals who, for example bought bolt-cutters in London during May 1995, can be traced. Then, taking these numbers, cross-references can be made to your other purchases.

Likewise, whenever you take money from a bank machine, the time, date and location are stored on a the bank's computer. If you are suspected of a crime, the police may apply to obtain this information to prove your whereabouts.

When purchasing equipment you should always use cash - used bank notes if possible. Using cheques or credit cards generates paper trails. Also, never use a cheque or credit/debit card when you are 'in transit' to or from the hit - it will generate a paper

trail locating you to a time and place, and will conflict with any alibi you invent.

4.3 Eyewitnesses

Sometime, somewhere, you are going to be seen. With careful planning this risk can be minimised on the site of the hit. The problem is often getting to or from the site without being 'noticed'. Being seen is one thing - getting 'noticed' as something out of the ordinary is the problem.

If possible, access the site using a route not directly associated with the site. Given the choice of a country lane leading to the site, or a five mile cross-country hike, I would choose the five mile hike. On the other hand there is safety in numbers - if you can work your way in and out of a crowd the weight of numbers prevents people or CCTV cameras from clearly identifying one individual.

Another problem is disguising your transport. Lone cars in country lay-bys get noticed. Police cars passing unoccupied vehicles will quite often log the registration to check if the car is stolen - this registration will then stay in the policeman's note book for future reference.

As a general rule you must always plan to avoid looking out of place, strange, or unexpected. As far as is possible, try to look normal. If you cannot look normal, disguise yourself by hiding your features, especially hair, beards, colour of eyes, scars or birthmarks, and most certainly your voice or accent.

4.4 Fingerprints

Fingerprints, in any classic crime film, are the primary means of identifying the suspect without doubt. It is because of the accuracy of fingerprint identification, and the use of modern computing techniques to identify a single print from thousands of records, that you must always guard against touching any object without some form of hand covering.

All your tools must be cleaned before the hit to remove any accidental fingerprints that might be on them from their last use. Then, even when you put them back in your stash, you must never handle them without gloves.

When on the site, for whatever reason, never take your gloves off. For obvious reasons this means that your gloves must be comfortable so that you can wear them for a long period of time.

I tend to put my gloves on when entering the site, and take them off when leaving. Gloves in public, unless it is very cold weather, look suspicious.

Finally, before going to the hit, remove all identifying objects such as coins, wallets, keys, jewellery, etc., from your body, and stash them. In fact, unless you will need money on the journey, it is not a good idea to take any object on the hit with you. Not only do such objects carry fingerprints, but if you drop them they will also identify you.

4.5 Biological tracing

Once fingerprints were the only problem. Even blood would only identify a blood group - which unless it was rare could only indicate one of a few hundred suspects when correlated with other evidence.

Today, 'genetic fingerprinting' can identify you as an individual with a probability of mis-identification of about one in one million. Also, rather than just blood, it is possible to take genetic fingerprints from all bodily tissues such as skin and hair. For this reason you must be extra careful when working.

If you scratch yourself you should carry plasters to stop the blood flow immediately. You should also try and clean the implement which injured you because it will have traces of blood or skin on it. If you seriously cut yourself you should stop the bleeding as best as possible and leave the site immediately. If you have long hair - that is anything more than a skin head - you should also wear a hat or balaclava to stop it falling out, or getting caught on fences or machinery.

Your clothing, even in everyday wear, will pick up minute quantities of skin and hair which will identify you if it is found. As advised earlier, it is a good idea to keep your tool stash and your other equipment/clothing stash separate. At least then if your clothing is found, there will be no incriminating tools with it to tie you to any one particular site.

4.6 Forensics

Forensic science is truly awe-inspiring. For example, when you cut something traces of the metal which the implement was

made of will be left on the object. From these small traces the 'quality' of the tool can be determined, so narrowing down the possibilities if tools are found. Likewise, if tools pick up hydraulic fluid, fuel or lubricating oil whilst being used, the additives and contaminants in these products can then identify the tool as being used at a particular site.

'Soft' objects, such as clothes, also pick up contaminants from their surroundings. This works in two ways. The clothes worn on the site can pick up traces or dirt and other material that will remain in the weave of the fabric, sometimes even after you wash them. This can tie you to the site. Also, if you expose the clothes to pollutants before you get there - such as the dust or grime in your home workshop, then any torn fragments of cloth left behind will identify the places it had been before it was ripped from the person's body. A good example of forensics are blown safes. Many safes have a jacket of sawdust to insulate them in fires. If a criminal blows the safe the sawdust is spread all over their body. The ratio of different wood types and the grain size can then match the criminal's clothes to the blown safe.

Another possibility is that you may have prepared some equipment at home - for example transferring grinding powder from the containers in which they were purchased to plastic bags. If forensics hoover your house - and believe me if you are a strong suspect they will - then they will find traces of the grinding power. Analysis of the powder and its grain size will then tie that found in your home to that found in the sump of the destroyed earth-mover. Yet another good reason to, as much as possible, work at your stash and not in your home.

You should be aware that it is impossible to eliminate the risk of detection by forensics, but by using common sense precautions you can reduce the risk.

4.7 Records/information

As well as indirectly generating paper trails by paying for things, keeping receipts or invoices will also provide evidence against you. When you buy things dispose of the receipt immediately. Also, never dispose of receipts/invoices in your rubbish at home - a quick sort through by someone will reveal them.

Another problem is getting information on equipment or a site. Never borrow a library book relating to a specific site or piece of machinery you wish to hit - a record of the loan may be kept.

If you regularly use public documents to get information on the site you want to hit, such as planning permissions, avoid giving your name to the staff at the office concerned. If possible, get someone unrelated to the hit to get the information.

If you must get something and there is no alternative, never use a false or assumed identity. At some point you can be assured that you will be found out. You will just have to use your own name, and then try and invent a plausible excuse for you being there and buying or looking at the information concerned.

Finally, never phone the premises you want to hit from home - the call may be logged by the organisations tapping your phone, and the call will be logged on your billing account.

4.8 Tip-offs and cold-calls

As 'deep-throat' said in the X-Files, "*trust no one*". If you are told one evening that 'X is about to move a crate of veal calves for export', unless the person is well known to you take precautions - it may be a set up.

Agent provocateurs have been used for centuries as a way of setting up groups or individuals for capture. Suspect anyone whom you know little about, even if they seem to be a keen sabber. There are plenty of anti-fascists who have taken part in racial attacks in order to get the information on the fascist organisations. Eco-saboteur groups, in terms of the approach taken by the security services, pose not dissimilar problems.

Another problem is people calling you up out of the blue and asking you questions over the phone. Normally they say they are some journalist or TV producer, and they want information on 'X'. Never tell them anything that is not already common public knowledge. Better still, if you can reasonably get away with it, plead ignorance. If someone cold-calls, always try and get a name, address and phone number from them. I usually say that, "I don't know, but I know a man who does - what's your address?". Also, when they ring off, immediately dial 1471 to see if their number is left in the system. Later you can phone back - perhaps at lunchtime when someone else may answer the phone - and see if they are who they said they were.

Never reveal any information about your activities to anyone who questions you directly. However, at some point, you will want to talk to someone about it - it's human nature. If you work with others this presents little problem. If you work alone, you must find someone to confide in. It is important that you get all your thoughts, fears and excitations about eco-sabbing off your chest. If someone cold-calls you then any residual fear or boast may accidentally fall out.

4.9 Hit planning and modus operandi

By using a computer to check the usage of words in this report, the range of the vocabulary, and any particular 'mannerisms' in the way I write, the security services could make a pretty good 'psychological profile' about me. What is worse, if they had other items of my work on file they could cross-check and discover my identity. Such distinguishing features are very difficult to obscure.

Likewise, the way you plan a hit and carry it out - your 'modus operandi' - will give you away. For this reason it is important to vary your working methods. It won't stop you getting caught, but it might prevent them from pinning so many cases on you.

Always try and vary the subject of you target. Don't just hit sites with nature conservation implications for example - go for factories as well. Never use the same techniques from one hit to the next - for example use a drill on the hydraulic lines of a digger on one hit, and a saw the next.

By varying your ways of working on the subject of the hit, and your means of access and exit, you confuse the opposition. By confusing them you will evade detection and capture for longer, and more importantly, they may not be able to pin every job you've ever done on you.

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5. INTELLIGENCE

Intelligence - sounds a funny occupation for a bunch of hippies? But to be really effective it's not just enough to hit sites and get away with it. You must also be aware of what's going on around you, and what those around you (mainly the police and government anti-terrorist bunch) are doing about you.

Intelligence is primarily about three issues...

- Collecting data on the sites you want to hit;
- Finding out what the 'opposition' are doing in general;
- Preventing the opposition getting to you.

Also, this type of work does not provide instant answers - you must assemble different pieces of the puzzle to produce the answer. So, in the normal course of events you would find out about something, take steps to discover more, and if you are lucky, come up with an answer which pre-empts the opposition.

In relation to what other 'intelligence' operatives are doing about you, it's also a matter of developing ways of living and working which give as little information away as possible on your secretive hobby.

For your information, following completion of this tome I might write a document specifically for techno-freaks who want to do some proper intelligence and encryption work of their own. Keep your eyes open!

5.1 Anti-surveillance measures

If you are the type who stirs things in your community, political things, peace, environment or civil rights type things, chances are you will be on somebody's list. There are various bodies who 'monitor' the community...

- **Government departments:**
  If you pester any department enough, for example the Department of Transport, you will go on a list. After a certain amount of time you may even be privileged to be the subject of study for government funded private investigators.
- **The Security Services:**
  MI5 is the internal security service for the UK. MI6 deals with external matters, but if you have lots of associates outside the UK you may attract their interest too. They keep records on everyone from politicians and trade unionists to key local authority employees and leading environmentalists. They control all anti-terrorist work, and have access to the full range of surveillance tactics - bugs, phone taps and post intercepts;
- **Special Branch:**
  A division of the police force, but in practice they do the everyday legwork for MI5. They are like any other uniformed or plain-clothes police officer, except they tend to be more interested in your activities!;
- **Government Communications Headquarters (GCHQ):** Based in Cheltenham, GCHQ runs all government communications interception and decryption work. If you use encrypted computer files, or you use encrypted email a lot, your work will end up here;
- **Police:**
  The police have powers to get telephone taps and other observation resources, but in general, if they become interested in you, you are more likely to find them knocking at your door with a search warrant;
- **National Security Agency (NSA):**
  The NSA is a branch of the American government which conducts work similar to GCHQ, and which is allowed to freely operate in the UK, spying on UK citizens, as part of Britain's contribution to the defence of the "free world" (rather a contradiction in terms). From their communication bases at Menwith Hill, Chicksands and Croughton, they keep watch on the citizens of Western Europe. If your work involves American air bases, communication facilities, or you have associates making trouble in the USA, you may come under their watchful eye;
- **Economic League:**
  The Economic League is a bunch of right-wing industrialists who keep information on hundreds of individuals for either their political, union or campaign affiliations. They then make this information available to large industrial corporations who are monitoring new employees, or campaigners taking action against them;
- **Private Investigators:**
  If you really annoy somebody, to the point where you are losing someone a lot of money, it is possible that they might employ private investigators to find out more about you, and keeps tabs on your movements. The main problem with PIs is that the UK does not have any sort of regulation or licensing system, so they can pretty much do anything they want to;

- **Other citizens:**
  There are many examples of groups who keep tabs on other groups or citizens - anti-Nazi organisations for example. Don't be surprised if someone else is watching you.

In the UK, the warrants granted to intercept post, or tap phones, are granted on an 'organisational wide' basis. Thus, when granting a warrant against CND for example, it would not only cover the CND head office, but also any person who worked or was an active member of the organisation. This is why Home Office figures are so misleading - they refer to the number of groups of people covered, not the actual number of intercepts.

So, potentially all these people are watching you. What can you do about it?

5.1.1 Your phone

Phone taps, especially for people who use phones a lot, are a good way to pick up information. As well as taping your voice conversations, with the appropriate equipment, private investigators as well as the 'official' government departments can monitor fax and computer/modem transmissions too.

There is no way to prevent, or detect, any official (Government) telephone tap. Today, with digital telephone switching technology, government agencies do not even have to physically visit your exchange to set a tap on your phone - they just instruct their computer to tell BT's or Mercury's computers to redirect a copy of your phone conversations to their computer systems.

Unofficial taps are another matter. Generally unofficial taps are physically connected to your phone line, either taking power from the line (in which case, the line will be cut and the device connected into the circuit) or picking up the phone signals by inductance (in which case the device will have a coil of wire around the phone line - with no physical connection - and it will have to have its own power supply). Those with direct connection will reduce the voltage on the telephone line, but voltages can vary so much anyway they are still difficult to detect unless you have very expensive equipment.

The traditional image of official phone taps is a large tape machine which records when you pick your phone up. These machines produced hours of tape, which all had to be listened to costing lots of staff time and money. This meant tapping was only used where the results were guaranteed, or it was an absolute necessity to have continuous monitoring.

Today, with computer technology, this is no longer the case. The phone tap plays into a computer. The computer is programmed with snippets of your voice speaking 'keywords' - for example "hit", "nuclear", "explosive", "bomb", etc. - gathered from previous phone recordings. When the conversation has been recorded, the computer digitally examines the playback looking for these words. If it finds a match then it keeps the recording for later use. This has made tapping easier, and thus more widespread.

There is absolutely no way to defend yourself against phone tapping - you just have to work around the problem. Rather than organising things on the phone you have to do it in person, or invent a variable and confusing set of codewords to fool the listeners. If you have a computer things get easier - it is possible to send encrypted (scrambled) messages via a modem, or just on a floppy disk through the post. Even so, the growing power of computers means that unless you have a very good encryption program the code may be broken eventually.

Mobile phones are another option - but make sure it is the 'digital' type which encrypts the call. Even then, this does not stop the Government eavesdropping on you because, via the phone company, they will have access to your code.

Another practice used by various tappers, and widely used by the police and security services, is number logging. The authorities only have to have a warrant to actually 'listen' to the call - they can make a note of the numbers dialled from the premises without any control whatsoever. Also, now that exchanges are fully digital, they can also find out the number of people calling you. From this information it is possible to draw up a 'web' of your contacts and associates.

Another tip - if someone suspicious phones you up, if you are on a digital exchange, dialling 1471 immediately after you finish the call will give you their number. If the voice tells you that, 'there is no number stored', this means that the number was withheld deliberately, that the person was ex-directory, that they were phoning from a non-digital exchange (pretty difficult thing to do these days) or that they were calling from a mobile phone.

If for any reason you wish to withhold your number when dialling someone, simply dial 141 before you dial the number and the switching computer will not release your number to them.

5.1.2 Your mail

Unless you leave your post in a box at the end of the drive (common in country areas) it is difficult for unofficial bodies to intercept your post. The government, the police or the security services can get a warrant to do so at any time.

Not all your post will be searched. Those plastic packages marked 'sealed under licence' will not be searched - there is no need as no one apart from the sender can put stuff inside. Likewise identifiable communications from companies (normally identifiable by the franking machine mark) or the DHSS may not be searched. Hand-written envelopes, and anything which is not immediately identifiable will be.

The techniques used to open your post are very good - it is often difficult to tell that it has been tampered with. I suspect that my post is intercepted (I wonder why - could it be the things I write?) and the only indication that there is something wrong is that packages sent at the same time from the same place take a day or so longer to get to me than it does to others in the same area as me.

There is little you can do to prevent your post being read. The only easy solution is to write your letters on computer, encrypt them, and then send them on floppy disk through the post or if the recipient has an Internet connection email it to them.

5.1.3 Your home

There are various ways to extract information from your home. Bugs are the simple and much hyped way, although there are others...

- **Rubbish:**
  A good way to pick up information is to sort through someone's rubbish. For this reason you should beware of what you throw away. Pieces of paper, bank statements, till receipts, invoices - all can be removed from your rubbish bin and assembled to depict a record of your life. Never throw anything away - not in your general household rubbish anyway - relating to your eco-sabotage activities.
- **Impersonation:**
  Door to door sales-people, meter readers and market researchers can also come to your home. They may not get anything in particular, but by coming inside they can map the layout of your house, look for signs of security systems, and locate computers, filing cabinets and possible bug locations for a return visit. I have my house arranged so that it must be deliberately searched to find the really useful information. I also have two computers - the main one hidden away somewhere else in the house, and the 'decoy' in full view in the study.
- **Burglary:**
  Next, there is the straightforward burglary. Increasingly people are getting burgled - but what if the offenders only open the filing cabinets, or take the computer and floppy disks, leaving all the expensive video and hi-fi equipment behind? Also, with members of the security services being highly skilled in lock picking, it is possible that people may enter your home with no apparent evidence of them doing so - except that things may have moved around the house.
- **Bugs:**
  It is possible to place miniaturised transmitters inside your house. The main problem here is access. Experts in lock picking and security systems have little problem in gaining access to your home. The problem will be placing the device where it is undetectable, and getting electrical power to the device to keep it working. The latter is normally the key factor which causes the problem.
- It is normally assumed that bugs get the information out of the house by radio waves - this may not be the case. It you fix a bug to the main wiring, the bug can transmit a high frequency signal back along the mains wire, to be picked up outside your house. Likewise, a bug in the phone can be powered from the phone line, and will send its signal back down the line too. The other option is to have some sort of voice activated tape recorder placed into a room - if they can get into your home to place a device, they are more than likely to return to remove it rather than let it be discovered.
- For those bugs that do emit radio waves, there are detectors available that can pick up the carrier wave. You then 'sweep' your house, and if the detector registers nothing, you could assume you are clear. However, the micro-miniaturisation of electrical components means that even small bugs can contain complex circuitry, enabling them to switch frequency, or scramble the transmission, making detection harder. Like bugs, sweepers are also advertised in hobbyist magazines, but with these designs you are not likely to pick up the really professional devices - they are made not to be detected. If you do pick up a device, it is more likely to be the amateur or mass produced type used by small organisations or private investigators.
- It is also possible to pick up mains bugs and bugs that transmit down the phone - but this equipment is not commonly available, although a reasonably competent amateur electrician could cook something up (as a tip, it's basically a high pass filter that screens out the 50Hz mains frequency, then rectifies and amplifies any remaining AF or RF frequencies).
- **Personal information:**
  Anyone outside the security services, with money and the right and contacts, can find out pretty much all there is to know about your public life. If they know the general area you live, they either look you up in the phone book or the electoral role - then they have your address.

Once they have an address they can use the measures outlined above to stake out your home and your phone. If you have a car they can illicitly get information on you via the DVLC, and increasingly information from the police national computer is finding its way into private hands.

By sorting your rubbish they can find out where your bank account is. Having done that they can pose as, or pay, a loans company to get details about your credit worthiness. Again, by bribery and corruption, it is also possible to get your benefits details.

Finally, by tracing your movements, logging incoming and outgoing call numbers, or watching your house, they can build up a comprehensive picture of your friends and associates.

Of course, all the above relates primarily to private investigators or determined snoops - official authorities can do much more than this!

5.1.4 Your information

Any information you keep at your home is vulnerable. Some associates of mine have been 'burgled', and all the people were interested in was the information in their filing cabinets or on their floppy disks. You must be aware that if you keep any significant amount of data at home, especially where that data is an essential part of any campaigning activities, you are giving an open initiation to the 'opposition' to burgle or burn you home.

A journalist friend working on defence related investigation a number of years ago gave me four basic principles for keeping information at home...

- Always copy important/useful information to someone else - that way it it gets stolen or incinerated then you can reconstruct you paper filing system from the copies held by your associates;
- If you work extensively on computer, regularly back-up data onto floppy disks (this is actually a basic safety practice for anyone using a computer) rather than leaving it on your hard disk. You should then make copies of your back-ups and give them to friends so that you do not lose data by theft or fire;
- Never keep incriminating data on the premises - don't even try to hide it. The police and security services can get warrant which allow them to rip your house to pieces, dig up the garden, and search the premises of your employer, so basically there is no way of keeping it safe on your premises;
- If you must keep sensitive or incriminating data at your home or workplace, keep it on computer disk and encrypt it using a military grade encryption system.

The most important of these rules must be that you copy any useful information to your associates. This is good for two reasons. Firstly it keeps the data safe. Secondly, it encourages the sharing of data and resources which makes life a lot simpler for everyone involved.

5.2 Basic surveillance equipment

The information above outlines what others can do to you to invade your privacy. If circumstances warrant, there may be times when you will want to invade the privacy of others. The following information should help. However, I would advise you to always consider how you do anything like this. Unless, if the situation were reversed, you could not justify taking the same actions - don't do it.

5.2.1 Bugs

It is possible to see working bugs or kits advertised in many electrical hobbyists magazines. But realistically using these devices is another matter.

Most bugs you see advertised work in or near the VHF broadcast band - 88MHz (megahertz) to 108MHz. This presents an obvious difficulty if your target tunes through the radio band one day and hears a conversation in the room next door! To be secure it is necessary to tune outside of the normal broadcast band - this means having the technical know-how to do this yourself, or paying £75 to £1000 for a radio which will pick up just about any frequency. Even then, if the target sweeps their home for bugs, or if they are a radio freak who has multiband receivers in their home/office, then they might find out anyway.

Having got your bug, your receiver, utilising frequencies outside everyday broadcast bands, the next problem is locating the device. As noted above, your greatest problem will be finding a power source. Unless you can wire the thing into the mains, you will have to rely upon a finite amount of battery power. You will therefore have to select the most appropriate time to plant the device to get the best effect. It will also be necessary to gain access to the room you want to bug - potentially the flaw in the whole scheme. If you are bugging a site office such as a portakabin this can be easier - you can sneak up to the office overnight, drill a small hole in the wall or ceiling where it will not be seen, and poke the microphone through the hole. In more substantial premises, you are either going to have to break in (a bit obvious to your target) or get proficient in lock picking.

There is another option - if the persons concerned are themselves using radio equipment to communicate, you could drop in on

their communications using the appropriate type of receiver.

When planting the device, unless you want to create an enormous fuss when it is eventually found, you have to consider how you will retrieve it. For example, it would be quite easy to bug a secret council meeting since the council chamber is open for most of the time - but what if the cleaner finds the device the next day?

The next thing you have to consider is how you will monitor the device. The range of the average bug is about half a kilometre, if you're lucky. The presence of buildings, structures, and especially metal such as reinforced concrete will limit the range. You will have to find somewhere to sit and listen at the appropriate time where you will not be disturbed, or noticed. The other option is to plug the earphone/recording output from the receiver into some sort of dictaphone which will give you a couple of hours of recording time on one tape, or a device that has some sort of detection level system so that it only switches on when it picks up a noise.

All in all, I think you have to be pretty desperate to use any sort of bug, mainly because of all the hassle involved in getting what may turn out to be completely useless information.

5.2.2 Phone taps

Interfering with people's phones is problematic. The slightest mistake and the line might develop a fault - in which case BT will be out and will track down your device in a matter of hours.

There are basically two sorts of phone tap which are within the technical capability of the average electrical hobbyist - direct connection devices and induction taps.

Direct connection devices are wired into the phone line, and draw power from it so removing the need for batteries. However, the half-kilometre range factor still applies and so you'll still have to find somewhere nearby to receive the signal. Again, kits can be illicitly bought through hobby magazines.

Induction devices require that you wind a couple of hundred coils of wire around the phone line - and then amplify and transmit the signal. You can have higher powered transmitters because the device is not solely reliant on power from the phone line, but you have the problem of actually supplying the power to the device, much in the same way as a conventional bug.

The problem about transmission frequency still applies - most of these devices are tuned to the 88-108MHz broadcast band. However, because the device can be connected anywhere along the phone line from the house to the exchange, they are easier to place and monitor, and will not be picked up when sweeping the house. However, there is (expensive) equipment available that can pick up directly connected devices.

5.2.3 Audio/recording devices

My preferred way of working is a concealed dictaphone. You have the same problems about batteries and actually placing the thing, but you tend to get better results. Most modern models will also have 'voice activation' features so that it will only record when there is actually a noise to record. The only problem is that the price of a dictaphone is about five or seven times that of a bug (£50-£70, as opposed to £10 for a simple bug).

Another option, rather than planting the dictaphone inside a building, is to fix a 'contact' microphone to a window, and plug the mike into a dictaphone. The contact mike picks up the vibration cause by noises in the room and sends them to the dictaphone. The only problem is that the mike also picks up bangs and bumps in the building, and an awful lot of wind noise.

Finally, you could just drill a small hole through the wall of a building and then insert a micro-miniature microphone. The microphone has an amplifier mounted just behind it so that the signal can be sent many metres down a cable to a recorder - the device also receives its power back along the same cable. A similar design of a device is also very good for 'wiring up' a building using the mains trunking as the transmission system, with the microphones placed in the junction boxes/wall sockets.

5.2.4 Video/photographs

There are two requirements for good photographic observation - a high powered lens and a direct, clear view.

A video camera is not the sort of thing that is normally use for unofficial eavesdropping because of the expense - although a concealed camera, activated by motion switches or pressure pads, is a good way to keep watch on your home for uninvited intruders while you are away.

5.3 Rubbish sorting

A disgusting job, but one which produces a surprisingly large amount of useful information. Having identified your target you next find out where their dustbin is, and what day they put their rubbish out. Then, when no one is around, you remove it to sort for any interesting information, then return it later.

Domestic targets can produce some - very messy - information, but commercial targets provide possibly the best source. This is because much of what they put out is paper, normally dealing with the business that is happening there and then. From experience, paperwork from people's homes tends to be sporadically put out, perhaps during the odd spring clean of a person's filing cabinet.

5.4 Phone/fax/mail

Phones present an interesting avenue for information gathering. You simply find out the phone number of a person or corporate/government department, and then phone up posing as someone (preferably someone not too familiar to the person concerned). In fact, it has been found that the majority of computer hacking incidents not related to company employees get the necessary computer access codes in this way (see below for further details).

There is little the individual can do about postal intercepts - so there's not much mileage there.

Faxes, in a similar way to phones, can also be useful for getting information, but this tends to be best suited to the forgery of faxes rather than intercepting faxes.

5.5 Social engineering

'Social engineering' is the term used to describe the practice of getting information, or creating a response, by making the target consider that something is what it is not. History has shown that such methods are a very effective way of causing trouble.

5.5.1 Impersonation

Phones are lovely impersonal things - you actually have no way of knowing that the person on the other end is who they say they are. You can check the number by dialling 1471 after receiving a call, but dialling 141 before you call prevents this. It is also possible for the person to try and phone you back - but as long as you are careful not to give out a number there is no problem. Results are gained by dominating the conversation by manner, familiarity or the structure of questions, so that the person receiving the call is continually answering your questions rather than putting their own themselves.

The simplest way of engineering a phone call is to identify your target, and get to know some detail about their lives, activities and friends. Then you call up their secretary, wife, etc., posing as one of their associates who has forgotten the date and place of a meeting, or the location of a development, or how much money they had to give to the local chief planning officer. With luck, and a lot of verbal bullshit, you can get what you want.

Impersonating people in person is very difficult - particularly since most of my friends are hippies and the people we are getting at wear suits. However, with total strangers there are possibilities. Impersonating a police officer is difficult - there are a whole set of mannerisms and structures of vocabulary to master apart from the costume. But little finishing touches like a small scanning receiver in your pocket to give you the traditional chattering police radio talk in your pocket, may help.

In practice it is safer to impersonate someone unknown and lowly, but who might hold some sort of power. For example, if you wanted to start a fuss about quarrying, dress as the average shabby construction labourer, and just walk around a village with a theodolite, and get your friend to play along holding a measure. When someone asks what you are doing say that you have come along to measure up for a new opencast coal pit. You could even say that you are conducting a feasibility study for a new six lane bypass next to some posh residences. Impersonating someone lowly can therefore have as much effect as someone who is important.

5.5.2 Forgery

Forging letters is very difficult these days, mainly because letters are printed on elaborate coloured paper, with watermarks, etc. However, faxes are monochrome, and have no distinguishing marks. Also fax machines, by the way they scan and transmit the page, destroy much of the quality and effectively mask any slight error in a forger's reproduction. Hence, faxes present the best avenue for forgery.

To forge a really good fax you need a computer, an image scanner, a fax machine, and a sample of the standard letter or fax release that your target puts out. You scan all the identifying features of the letter such as letterheads, logos and signatures, and then set

these up as images on a page of a desk-top-publisher or wordprocessor. Then, using a typeface of similar style and point size to the real thing, you write your own message.

What you do then is up to you. You could just copy the fax using your fax machine, and then stick it up on a noticeboard somewhere. Better still, to make it look as if the fax has been 'leaked' by an employee, reprogram the fax machine with the fax number of the company, make sure you dial 141 to prevent reception of your number, and then fax it to all the local newspapers.

5.5.3 Harassment

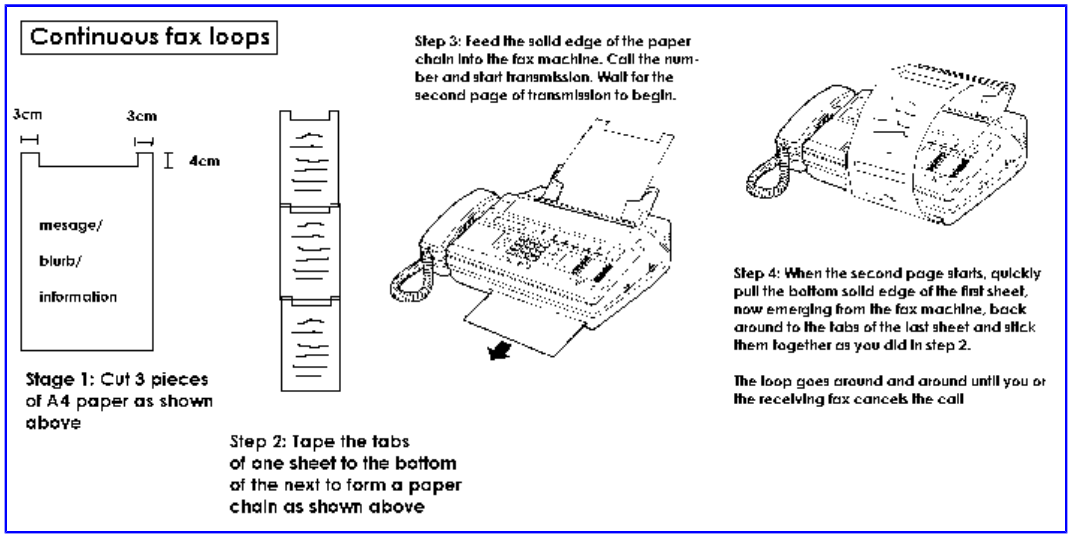
Some people consider harassment an acceptable way to campaign - I don't. This is because you can never be sure about only getting the person you are after. For example, many of the animal rights protesters have picketed people's houses - but what about the neighbours who are unconnected with the issue concerned?

The only form of harassment I indulge in is swamping businesses with phone call or faxes. This is justifiable because you are attacking a business as an organisation rather than one person in particular, and you can be sure that the action only hits the intended target.

There are various ways to do this. If you are just calling by voice you will need to have many tens of people doing it at the same time or BT will intervene for phone harassment.

The other option is to send a very long fax. If you have a fax modem this is easy because you create a 60-100 page document on your wordprocessor, and then send it electronically to the fax machine at the other end until you run it out of paper. To do this manually with a normal fax machine is more difficult.

Figure 51: Fax loops



Many modern fax machines are made to disconnect if a page longer than 60cm is sent. Thus, if you made a simple paper loop, the other end would disconnect. The way around this (illustrated below) is to chop chunks out of the end of three sheets of paper, connect them together, and while you are transmitting the first two connect the first sheet to the last. The reason this works is because the paper detector is normally in the centre of the sheet feeder. The gaps in the paper loop are therefore interpreted as a break between pages. However, this system does not work for all fax machines - so you will have to experiment a little with this standard idea.

The other option, if you have a fax modem and a lot of numbers, is to get your fax modem to systematically call all the voice numbers and try to send them a fax, over and over again. If there is any comeback from BT there is a simple response... how were you to know there were no fax machines connected to these numbers!

5.6 Computers

Computers, and how to use, abuse and destroy them is a topic in itself. There are many constructive ways to uses computers, there are many destructive ways to use computers, and there are many ways to foul up or damage computers - (generally an axe through the motherboard and hard drive works best).

Rather than give an in-depth analysis of how to constructively use or foul up computers, it is easier for the purposes of this handbook to describe what to do if presented with one. This really only applies to desktop or laptop computers.

If I got close enough to a desktop computer to do damage to it - I wouldn't. I'd remove it from the site, take it home, after holding it in quarantine at the stash for a few weeks, and extract all the data I could from its hard disk. Computers are generally protected by a password which prevents unauthorised access when you first turn it on. The password is held in an electrical memory, supplied with electricity from a small battery - disconnecting the battery clears the password and allows access. If you take the computer apart, the battery is normally mounted somewhere inaccessible such as under the hard disk. Alternatively, find the CMOS ROM and short the power pins together - this also clears the memory.

However, when you've finished with the computer, get rid of it! Sell it on to someone unconnected with sabbing - for cash - or just dump it. Computers and the chips inside them are very valuable, and for this reason they all contain identifying serial numbers. If you get raided and they check the computer, you will be caught.

But - how do you do serious harm to a computerised system?... Be aware that not all computers are the friendly looking beasts you see on office desktops in the reception of your local authority. A computer controls the switching of traffic lights; it controls the machinery on many complex industrial processes; it controls the management of the telephone network; it controls the electronics and engine timings in nearly all modern cars.

Computers fall into three broad categories:

- **Mini's/mainframes:**
  These are large systems used by corporations or institutions. They generally consist of one or more large cabinets full of circuit boards with the name 'Sun', 'IBM', 'Digital' etc. written all over them. They will also have a number of printers, large hard disk drive, and a large amount of cabling associated with them. Chances are that if you are confronted by one of these systems, then you are about to be caught as you've activated every security device in the building!

There's not a lot you can do with these systems - straightforward smashing, hammering and cutting is the best options. If you don't have a lot of time, just remove some of the larger circuit boards, place them between two blocks lean them against the wall, and stamp in the middle to snap it in two.

- **Desktops/laptops:**
  These are the machines you see in offices, or you might have at home. They are generally used for 'human' related work. If you are unable to get the computer off the site there are a number of options...
  1. Throw it out of an upstairs window;
  2. Hammer a screwdriver into the floppy disk drives;
  3. Remove the cover of the main unit to gain access to the inside, then using a blunt screwdriver, hammer holes in the hard drives/CD-ROM drives (usually large metal boxes about 3"-6" square and 2" deep), and the CPU (small black 'chips' on the circuit board, about 3cm-4cm square).
  4. If you have access to the floppy disks, take them, but you may not get anything off. Some systems encrypt data on disks making them unusable. Alternatively, just bend the disks in half.
- **Programmable logic controllers (PLCs)/Hardwired logic controllers:** These machines, varying in size from a small shoe box to a bedside cabinet, control complex mechanical or electrical systems such as security alarms, traffic lights and 'command and control' (CnC) machines.

PLC's are identifiable because they normally have small keypads and LCD/LED dot matrix displays. Hardwired units are essentially small circuit-board based computers that control specific small scale tasks, and are not programmable. A good example are automatic washing machines, or a video recorder. In terms of extracting information these systems are worthless, but there are a number of alternative options...

1. Hammer a blunt screwdriver or chisel through the control panel;
2. Make a hole in the casing of the device and pour acid inside - ferric chloride is usually sufficient;
3. If the thing is removable, take it away (PLCs are portable things sometimes) and just dump it.

6. CONCLUSIONS ON VOL 1.

When setting out to write this guide I wanted to produce a kind of 'K-Tel', all-inclusive guide to nobbling those organisations and their hardware who are destroying the planet. After a few days of outlining topics and deciding on information requirements, I gave up. I have the information to hand in one form or another, and the background knowledge to put it together - but it's just too big. On my original estimate such a document would easily exceed 250 pages. It's just not practical to continually copy off such a document.

Therefore, I took an alternative route - produce an occasional guide on different subjects. This one covers the 'basics' - tools, tactics and skills. I have planned a more technical guide, certainly in the electronics and computer department, covering issues such as computer viruses, home-made telephone taps and bugs. With the help of others it will also be possible to put guides together on primitive incendiary devices, legal information, and information on tool stockists/suppliers. Certainly the next document, if I can get hold of the manuals, will be a detailed look (with comprehensive illustrations) at how different pieces of equipment work - and thus what is the best way to disable them.

I hope this guide has informed you about the opportunities for 'eco-sabotage' available to the average 'person in the street'. If this concept has worked, you should have all the information you need about planning a hit, what tools to select and how to use them, a little on health and safety, and finally how to avoid getting caught by being aware of what the opposition will try and do to you, to get out and start yourself.

Finally, I must re-emphasise the point made at the very beginning. Eco-sabotage is not a matter of mindless vandalism - it is vandalism for a purpose. Primarily, it is about making those in the 'establishment' who build roads to destroy the countryside pay the 'real' costs of what they do; it is about making things expensive by writing off a JCB every time they damage a SSSI, or burning a Caterpillar each time they build a road.

Don't do sabotage out of anger - you will lose you head, hurt yourself or others, and eventually you will make an impulsive mistake and get caught. Instead, understand what it is you are doing, why you are doing it, and be certain of the issues involved when you start, and the set of outcomes you wish to arrive at.

Most of all, work in a way which harms neither yourself, others, or the environment you are trying to protect.

If you do it well, and do it right - eco-sabotage can be a very fulfilling hobby. I hope this guide helps you practice this hobby better!

Tooling checklist

The purpose of this list is two-fold; it is for use as a shopping list, and for keeping check on the tools in your stash. The items marked in **bold**
should be considered 'essential' - the rest are optional depending upon the target. The numbers in brackets represent the ideal number to have when more than one person is involved)

[.] Clothes (set per saboteur)
[.] First aid kit (1 of)
[.] Rope
[.] Twoway radio
[.] Gloves (set per saboteur)
[.] Torch (for night-time work)
[.] Whistle
[.] Goggles (1 set per saboteur)
[.] Heavyduty side cutters (1 per saboteur)
[.] Pipe cutter
[.] Spanners set/socket set
[.] Stanley knife (1 per every 2 saboteurs)
[.] Sugar/syrup (quantity depends on target)
[.] Blow torch
[.] Ferric chloride/strong acid
[.] Sharp standard/bevelled chisel
[.] Hand/cordless drill
[.] Set of metric/imperial allen keys
[.] Crowbar/jemmy (1 per every 2 saboteurs)
[.] Superglue (>5 grams per saboteur)
[.] Anaerobic glue/threadlock
[.] Mastic/sealing resin Bitumen sealant
[.] Potting compound
[.] Bolt cutters
[.] Adjustable wrench/pliers (1 per 2 saboteurs)
[.] Hacksaw

Spade Scredrivers:
[ ] Small - [ ] Medium - [ ] Large

Posidrive Screwdrivers:
[ ] Small [ ] - Medium - [ ] Large

Drill bits (HSS):
[ ] 2mm - [ ] 5mm - [ ] 10mm

Flat files:
[ ] 10mm - [ ] 25mm - [ ] Three sq.

Needle file
[ ] Round - [ ] Square

[.] 4 to 6 feet of plastic pipe
[.] Abrasive powder (depends on target)
[.] Automatic centre punch
[.] Paint/brushes or waterproof marker pens
[.] Cold chisel
[.] Brace and 1" bit
[.] 4lb lump/claw hammer
[.] Centrepunch
[.] Filling knife
[.] Staple gun
[.] Quick set sealant
[.] Epoxy resin

And don't forget your common sense!

Cafe Underground presents:

The Ozimandias Collective's Direct Action & Sabotage Handbook

Volume 2

1. INTRODUCTION

Volume I of this series introduced basic information on tools, what they are, how to use them, and methods to organise your work to prevent you collar being felt by the authorities. Volume I was written in simple terms to allow anyone to 'log on' to the issues involve - a similar approach has been taken with this volume, but there is one additional problem. To really understand you are going to have to get out there and do some of this work.

Let's now recap where we are in association with Volume I...

This guide is not really about 'noble' sabotage - for example people clamping themselves to diggers on road projects. It's about taking action against the everyday destruction of the environment - it's about afforestation, polluting industries, and the ceaseless growth of urban areas while inner cities are left derelict. Specifically, it's about sabotaging machinery, and getting away with it. In short - 'economic sabotage'.

One important point - whatever you do you should always ensure that you never cause harm to other people, or to the Earth that you are trying to protect. Eco-sabotage should never be conducted in a rage or anger - that way lies plain destruction and vandalism. Eco-sabotage should be planned, calmly executed, and the extent should reflect the damage that the evil-doer is inflicting on the Earth.

Terrorism is only a valid concept when it seeks to alarm or coerce the public into following someone's political viewpoint. I do not see that as an issue here since we should always strive to hit specific targets, affecting only that target and causing no 'collateral damage', and never, ever, harming human life or the environment. Unfortunately, as many people in organisations such as the Animal Liberation Front have found out, the tag of terrorist is easy abused by the authorities and the judicial system, with the consequence that offenders are given exceptionally harsh treatment.

Anyhow - back to this Volume.

In the first Volume the idea of developing toolkits was developed, and in particular the idea that the activist should set up a 'stash' of equipment so that incriminating evidence was never kept at their home or workplace. Also, the idea of what tools are, and how to use them, was introduced. Finally, there was general background on how to manage your 'hobby' in such a way as to avoid detection.

This volume now develops these themes further - primarily there is more detail on the types of equipment you may be confronted with and how to 'handle' the situation in a way which creates the highest level of economic damage. This is, of course, if that is what your tactic is. Remember from Volume I that the level of response must be proportionate to the level of 'insult'. You do not demolish someone's home for pouring oil down a drain, and conversely supergluing the locks at the offices of a multi-national company has little effect. It is really up to you set the level of response, but at the same time you must be prepared to accept the consequence of that action. Also, it is always important to run a series of hits, where there is scope for a 'repeat visit' to the site, in such a way that you can escalate the impact each time if your warnings are not taken notice of.

Finally - "Let's be careful out there". Volume I introduced fairly low-key methods of sabotage. If you start messing around with high-voltage cables, or pipelines, or just pneumatic/hydraulic pipes that are under pressure, you are going to hurt

yourself if you do not take the appropriate steps to mitigate the risk. Read the health and safety sections of both Volume I and this volume - and use them. Dead eco-saboteurs do not help the cause as good as live ones.

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2. BASIC MECHANICAL SYSTEMS

2.1 The basic elements of mechanical systems

The front cover of this volume shows a Bedford van, not as a simple metal box, but as a collection of complex interconnected parts. To do real damage to any system this is how you must look at the target of the hit - a collection of vulnerable parts.

An earth mover, for example, is not a simple machine. It is a complex system comprising...

- Mechanical systems with moving parts, hinges, cables and bearings;
- Engines, using petrol or diesel as a fuel, which provide power to the whole system;
- Electric motors which convert electrical energy into mechanical motion, or turn compressors or pumps to move fluids;
- Hydraulic and pneumatic systems which develop the large forces necessary to drive the machines excavators;
- Electric systems which run lights, valves and the control instrumentation;
- 'Static' devices, not directly involved in the main system, such as locks, radios/communications equipment, and security systems.

All these elements come together to 'create' that which we call an 'earth mover'. Therefore, to effectively disable, or preferable write-off the subject of the hit, you need to have a working knowledge of each of the individual systems. The alternative would be to learn about the system itself - a standard JCB for example, But learning about the principles of how these machines work in general is preferable because the knowledge is more easily applied to any situation you may encounter.

In terms on machines in general, when you conduct your scoping exercise while planning the hit, or while you assess the 'problem' when you are first presented with the system you wish to disable, you should ask yourself a simple series of questions...

1. Where does the power come from [the source]? (e.g., electrical, engines, electric motors, etc.);
2. How is the power moved around [the conduit]? (e.g., electrical cables, mechanical rods/shafts, hydraulic or pneumatic systems);
3. Where is power expended [the sink]? (e.g., hydraulic rams, electric motors, mechanical arms or electrical components);
4. How is the movement or conversion of power regulated [control systems]? (e.g., valves, control panels, switches or automated computer controllers)
5. Does the operation of these parts involve lubricating or cooling of devices? (e.g., engine oil sump, pipes delivering lubricating fluid, chillers/refrigerators, air cooling or water cooling)

By systematically taking these five criteria, and applying them to your system (with practice it will become second nature) you will be able to identify the key parts of the system, and hence the key weaknesses. You can then plan the appropriate steps and requisition the appropriate tools with which to carry out the hit.

For example, in an earth mover, the major mechanical parts are built of extremely tough materials because they must survive in a harsh environment, under extreme load conditions. For this reason taking on the arms of the machine, or cutting its hydraulic system, causes little real damage. On the other hand, the fact that the entire system relies on the provision of power from one diesel engine means that by taking out that engine, using grinding powder in the sump or ball bearings in the cylinders, you deny power to the system. On the other hand a complex manufacturing plan may rely on computerised control systems, in which case damaging these is more effective than removing the power supply, or damaging individual parts of the machines.

2.2 Power sources

All mechanisms need energy to function. This energy can be derived from a number of sources...

- Electrical energy: Electricity supplied in cables, or in more complex systems, which may be generated from other energy sources within the system;
- Electrical potential energy: This is really a category used to differentiate *supplied* electrical energy from electrical energy *stored*
  electrical energy. There are many systems, from computers to industrial plants and road vehicles, that rely on the storage of energy within some form of battery to help them operate. Batteries contain 'potential' energy because it does not actually exist as electrical current, but rather as charges on the atoms of chemical compound which are release as part of

chemical reactions;
- Chemical energy: Fuels which contain energy, such as petrol, diesel, and methane or propane gas, can be utilised within machines as a heat source, or within engines as a source of kinetic energy;
- Kinetic energy: Kinetic basically means movement - that is the turning of drive shafts or the push/pull of connecting roads. Many pulled units, farm machinery is the main example, are powered by kinetic energy supplied by a drive shaft which plugs into the tractor's engine (this is called a Power Take-Off [PTO]).

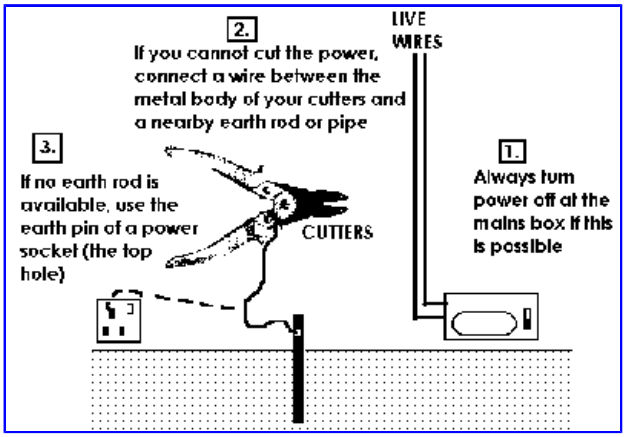
Denying the source of energy to any system is the most effective way of shutting it down - but sometimes this is only a temporary setback for the operator...

- Destroying or removing the battery from a system is only temporary because batteries are easily replaced;
- Removing the electrical supply by cutting cables is very temporary as cables can be replaced in a day. Even a mains trunk cable can be repaired in just one or two days;
- Removing fuel from the system is very temporary - you only have to fill up the machine again, or new supplied can be ordered or bought the same day.

It is therefore obvious that cutting energy sources is only effective when it includes other forms of damage. For example, rather then just spiking or removing the fuel from a generator, it is always advisable to do serious damage to the generator itself.

However, removing power supplies really comes into its own when speed of action is necessary. For example, all petrol stations have a little box on the wall marked, "*petrol pumps switch off here*". This enables the fire brigade to turn off power to the pumps in the event of a fire or spillage. It also means that smashing this box, or cutting the cables, disables all equipment on the station forecourt - this is much faster and easier than trying to damage each pump or cut every pipe.

Safety when cutting power cables (figure 2)



The only precaution must be to ensure your safety. Any source of energy is capable of imparting energy to you when you damage it - that can be fatal. To solve this problem there are simple steps you can take.

Electrical supplies:

Electrical cables should be isolated at the fuse box before cutting. If this is not possible, use tools with a long insulated handle - such as an

axe. If in doubt you need to connect a thick copper wire - preferable coated in plastic - to the tool you are using, and then connect the other end to a large metal object embedded in the ground (such as a fence post) or the 'earth' plug of a wall socket (see diagram above). This will make the electricity earth to ground via the wire rather than you. As a precaution, you should also wear thick rubber gloves - for example the type you use for washing up.

Where voltages higher than 415 volts are involved, no amount of earthing will ensure your safety - splashes of molten metal from the arc generated when the cables are cut can also injure you. For this reason you should consider other measure such as burning through the cable with an incendiary compound (see 'combustion' section).

Batteries:

The batteries on conventional cars or lorries are relatively safe. The main danger comes from the acid they contain. The risk

with these batteries is when they are on charge because they give off highly explosive hydrogen gas. Cutting one cable at a time, and then removing the battery is quite a straightforward process, but a spark near an open cell could initiate a fire.

Large battery arrays, such as those found on electric milk-floats and other electric vehicles, present a danger because of the sheer amount of electrical current they are able to generate. If you short the cables you will get a small explosion as the current melts and fuses the metal in the cables. In extreme circumstances, it may also cause other parts of the electrical installation to short out - perhaps explosively if electrical 'capacitors' are involved - and catch fire. Again, the basic instruction is disconnect one terminal or cut only one stand of the cable at a time. If the cable is 'multi-core' - that is there is more than one stand of wire within it, strip off some of the electrical insulation with a Stanley knife and cut one strand of wire at a time.

Again, where large battery arrays are involved with voltages greater than 24 volts, it is a good idea to earth the tool you are using if the only option is to cut rather than disconnect cables.

Fuels:

Most fuels are volatile - that is they burn readily with only minor ignition sources such as bright lights, heat or sparks. Petrol, gases and some solvents (such as acetone) fall in this category. Other fuels such as paraffin or diesel are more difficult to ignite.

There are three tactics with fuels - spiking, disconnection or removal:

- Spiking involves the addition of substances to make the fuel burn under extreme conditions. Adding sugar or syrup to fuel produced large amounts of carbon which block the cylinders and valves of engines. On the other hand adding a litre or two of acetone to the fuel tank of a car, if it doesn't dissolve the pipes or the carburettor float first, causes the cylinder temperatures to rise to the point where pistons or cylinder vales melt and fuse;
- Disconnection - basically means that you cut the fuel line. This in itself can cause great problems because by cutting the line the fuel escapes to cause pollution, or it covers you. There are a number of alternatives. You could close off valves in the fuel lines and then superglue them shut (it's generally not a good idea to solder or weld a fuel line!). The other option, which applies to metal fuel lines, is to crimp them shut using pliers. It is possible to use a hammer (sometimes the blunt end of a chisel or screwdriver proves an effective tool to use) to flatten the fuel line at two points, but this may cause the contents to ignite. If you crimp the fuel line in two places, and then cut the line in between the two, the fuel should not escape.
- Removal - quite simply, just take the stuff away.

Drive shafts/PTOs:

By the very fact that they carry large amounts of energy (the technical term is 'torque'), drive shafts and PTOs are constructed of very hard and tough materials. This makes them very difficult things to cut, bend, or generally damage. However, almost all drive shafts rely on bearings and rotating joints to keep them turning efficiently. You should therefore attack the joints and bearings rather than the shaft itself.

The simplest way to damage a baring is to inject grinding powder, suspended in lubricating oil or grease, into the bearing. Over the course of a few hours this reworks the running surfaces and makes everything a little more 'loose'. With universal joints, if you can bang out one of the spindles on which the joint pivots then you can disconnect the drive shaft.

The other option is to unbalance the drive shaft. As the shaft rotates very quickly, and the shaft is very heavy, it must be in perfect balance along the axis of rotation. Any deviation causes the drive shaft to vibrate. If you add weight to just one side of the drive shaft - by strapping a weight around one side of it - the vibration could damage the bearings and joints before the operator notices. On larger shafts there are actually small weights which screw in and out of the shaft to vary the balance. Screwing the weights fully in on one side, and fully out on the other, will perform the same function as strapping a weight to the shaft. It also helps if you superglue the bolts too.

Alternatively - and this works very well with the propeller shafts of boats - just connect a length of steel cable to the shaft, and wrap it around the shaft. With luck, especially in enclosed spaces, the cable will snarl up and unbalance the shaft. However, you should always make sure that the rotating cable will not injure someone - a cable rotating at speed can be lethal.

Finally, with the PTOs of tractors or construction plant, if the drive shaft is not connected, just try and jam up the connection socket. The best way to do this is to melt solder onto the surfaces of the socket using a blowtorch - but don't forget to clean the metal surfaces of grease and rust using petrol or solvent, and then burning the residue off with the blowtorch, before you start, or the solder won't stick.

2.3 Power conduits

After power has been produced from the source, it must be moved around to where the work needs doing. There are a number of ways this can happen...

- Electrical power is moved along cables, through a series of switches, fuses and control instrumentation;
- Where pressurised fluids or gases are used, pipes and vales regulate the flow of fluid to its destination;
- Where kinetic energy is involved, gear, shafts and tension cables (steel cables, rubber/canvas drive belts or rope) transmit the energy;
- Especially where telecommunications equipment is concerned, the 'information' can be carries as light within fibre optic cables, or as a radio wave within coaxial cables.

Essentially, what we are trying to do here is severe the flow of energy along the conduit. With electrical, communications or fluid cables this is simple - just cut it. But you should beware when cutting fluid cables in case the fluid or gas in the pipe is still under pressure. Again with electrical cables, as outlined above in relation to electrical sources, you should make sure that the cable is not live before you cut it, or take appropriate steps to protect yourself when cutting.

Thew problem here is that cables and pipe are relatively easy things to replace, relatively quickly. They are also relatively cheap. What we must do, in order to create the greatest expense and delay, is to damage or remove those parts of the system which control the flow of energy through the conduit:

- With electrical cables, switches, fuses, instrumentation and electromechanical relays all act to channel the flow of energy. By damaging these items you can disable a piece of equipment while repairs are made. With very specialised equipment, spares will not be readily available either. The key items to hit are relays, switches, and most importantly gauges, computers or programmable logic controllers (PLCs) and instrument panels;
- With hydraulic systems, the pipes are nearly always reinforced with hardened steel, making them very difficult to cut without very large and expensive bolt-cutters. The simple method is to drill the pipe, or even better, smash the valves which control the flow of the fluid. On basic mechanically controlled systems the valves are controlled by levers, so you should just rip off the levers, and perhaps smash the valve housing. On electromechanical systems electrically powered relays operate the vales. These are quite easy to disable because you can rip out the electrical cables, but more importantly, you should try and remove the 'solenoid' (the electrical coil and magnet) mounted on the top of the valve (easily identified as the electrical cable is plugged/connected into it);
- With pneumatic systems, the pipes are not normally reinforced, but the system is controlled by the same type of valves as hydraulic systems, so the same rules apply;
- With telecommunications systems, just cut the coaxial or fibre-optic cables, but you should try to access the transmitter units and smash them, or rip off any visible transmitter antennae. Alternatively, with coaxial cables, just fire a few dozen staples into the cable. The short circuit may damage the output transistors of the transmitter;
- Kinetic/mechanical systems are more difficult. Drive shafts, as explained above, are difficult to damage, but they are susceptible if they have exposed bearings or rotating joints. The best place to damage any mechanical system is at the gearbox - just fill it with sand, or better still, grinding powder. If the gearbox does not contain an kind of lubricating fluid, fill it with epoxy 'potting compound', effectively sealing the moving the parts in a block of hard plastic. Drive belts can be a problem. Smaller ones are easily cut as they are generally rubber with a canvas reinforcement. Larger ones, and things like conveyor belts, have steel reinforcement and so tin snips, side cutters or bolt-cutters will be required. Hacksaws will work, but it can be slow going. With drive cables, such as those on cranes, the cable is normally made of tensile steel which is difficult to cut without heavy duty side cutters or bolt cutters. Hacksawing can take a long time.

It must be stressed that the simplest and most direct method is to damage the control systems. Even on hydraulic systems, where the system relies on a pump, it is still more effective to take out the control systems because the pumps are so solidly made.

2.4 Power sinks

When the power has been moved to where the work takes place, it can be used. Energy can be expended in many ways - from the hook at the end of the winch cable that lifts the load, to the computer at the end of the mains cable. For this reason, there is no general approach to damaging the appliance to which power is supplied. In general it is possible to say this...

- All electrical equipment should be damaged by hammering chisels/ screwdrivers into it, or if this is difficult pour acid or salted water inside it;
- All mechanical equipment should be 'fouled up' using wire, dismantled using tools, filled with sand or grinding powder, or just filled up with quick setting epoxy 'potting compound';
- All hydraulic/pneumatic appliances should have holes drilled in the cylinders.

But when considering the above options, you should consider the time factors involved. Sometimes effectively taking out the power conduit or source will be as effective, but more importantly quicker, than trying to damage every part of the system that utilises the energy supplied to the system.

2.5 Regulation

The regulation of energy was noted above in relation to energy conduits. Without control systems, machines will not function. For example, why spend half an hour trying to get into the locked engine compartment of a earth mover when you can just smash through or remove the window of the cab, and smash, damage or remove all of the controls levers, switches and instrumentation?

When taking on control and instrumentation panels there are a few general tips:

- Any accessible electrical cables should be cut or ripped out. If you have a number of cables bound together or fixed in a 'loom', the simplest thing is to loop the mass of cables around a screwdriver or crowbar, and then twist around and around. As the cables twist and tighten on the bar, the tension will snap or rip them from their fixings;
- Any gauges, displays or meters should be smashed. The best way to do this is to take a long, thin (about 3-4mm diameter), blunt screwdriver, and hammer it through the face of the dial. If it goes through easily, try again - unless you encounter resistance as you hammer it through you are not doing any damage;
- Computers and PLCs should, if possible, be removed and disposed of in the nearest canal or ditch. If this is not possible you should take the same approach as that outlined for gauges and meters. If the construction does not allow you to hammer in the screwdriver, then use the wedge end of a crowbar and hammer it through using a lump hammer (if available);
- Any key locks or key switches should be superglued;
- Conventional switches or levers should have the arms broken off. You can do this with a hammer. Sometimes the levers and knobs are fixed in place by small screws in the handle - if this is the case just loosen the screw, pull of the handle, and get rid of it off the site. This then leaves the spindle which the knob or lever was fixed too - this is best broken off using a hammer and chisel. For push buttons there is only one simple solution - either hammer then button through the face of the control panel, or superglue it in place.

However, sometimes there is just not time to do all of the above. In these cases the only (and ultimate) solution is to douse the control panel in petrol or diesel and torch it. This unfortunately attracts a lot of attention, and so you may with to use some sort of time-delay incendiary device to do this.

2.6 Lubrication

Finally, many mechanical systems require careful lubrication to keep friction and wear to a minimum. Many gearboxes, engines and drive shafts contain spindles, cogs and bearings which must be lubricated to keep friction to a minimum, and remove excess heat. There are two basic methods for working on lubricating systems:

- Drain it: Drain the lubricating oil into a container (unless you are certain the oil will not cause pollution). Of course the operator will notice this, or the machine will indicate a low oil pressure, so this can only really work on a machine which is already running (in which case beware because the oil will be hot and under pressure), or a machine which you are sure you will be able to start up. If you cannot find or are unable to remove the plug in the oil sump, the simplest alternative is to drill a small hole through the sump using a hand or power drill.
- Spike it: If you have access to the sump filler on the engine, gearbox, or the lubricating nipple on the baring, you can inject a mixture of oil and grinding powder into the machine. Grinding powder expensive, but especially on bearings, it is the only option because only a very fine power can be injected into the necessary space. However, on engines and gearboxes a cheaper option is sand.

3. ENGINE BASED SYSTEMS

3.1 The internal combustion engine

The internal combustion engine is the main source of electrical and mechanical power for most mobile equipment, and for a large proportion of all construction plant. An understanding of how engines work, and how to disable them, is therefore a key part of good sabbing technique.

By and large engines are either run on diesel or petrol - other fuels such as gas or methanol are available, but these tend to be used rarely, and so you are unlikely to come across them in great numbers.

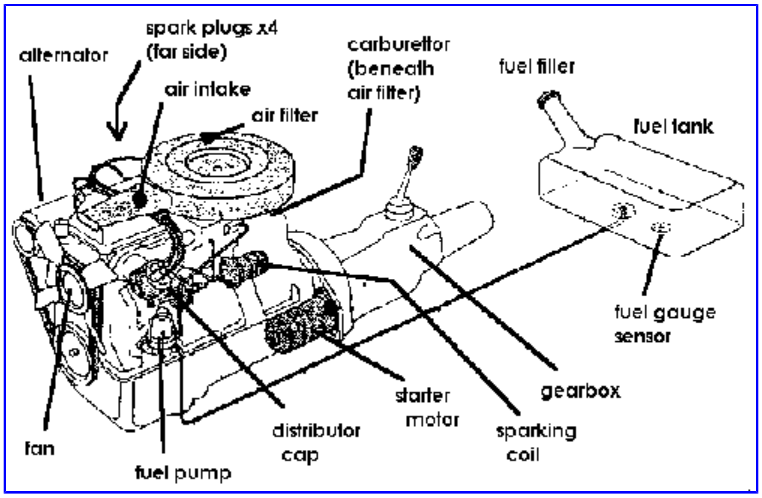
3.2 Petrol engines

The engines shown on the following page are rather old (modern car engines have rather moved on) but they more easily indicate different functions in the auto engine. Today, many cars have separate electrically powered fans. Also the distributor and coil system, which controls the firing of the engine, is being slowly replaced by computer controlled units.

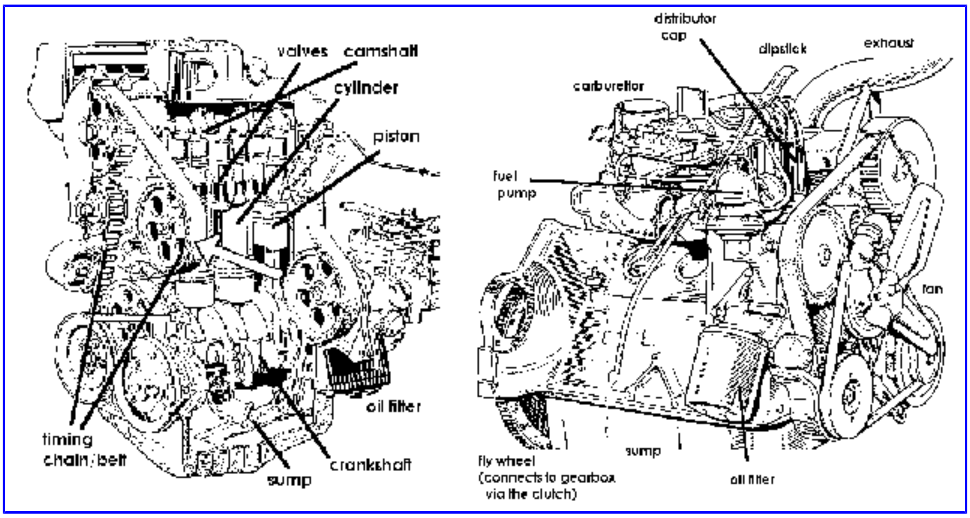
At its simplest the engine works as follows:

- To start the engine, power from the battery turns over the starter motor - this automatically engages with the flywheel. When the engine starts, the motor disengages;
- Fuel from the fuel tank is pumped to the carburettor. Here a nozzle produces a fine mist of petrol to allow it to mix thoroughly with air drawn in through the air filter;
- Taking just one cylinder - as the cylinder moves down a valve in the cylinder head opens and the air/fuel mixture is drawn in. At the bottom of the stroke the valve closes;
- As the piston returns back up the cylinder the air/fuel mixture is compressed. At the point of maximum compression when the piston is at the top of its stroke the spark plug sparks and the air/fuel mixture explodes. The pressure increase caused by the hot gases forces the piston back down the cylinder;
- When the piston reaches the bottom of the cylinder, another valve opens and the exhaust gases are forced out of the cylinder when the piston travels back up the cylinder again - the cycle is then repeated all over again;
- The four cylinders (or more - large earth movers can have 16-24 cylinders) and pistons are arrange so that they all fire at regular intervals. The power produced is then transferred by the camshaft to rotate the flywheel and drive the clutch/gearbox and drive shaft;
- Electrical power is generated by the alternator, which is turned by the rotation of the engine (it is directly coupled by a drive belt to the crankshaft);
- The valves are controlled by a camshaft which activates the valves at specific moments. The camshaft is kept in synchronisation by 'timing chains' or teethed belts which are connected to the camshaft;
- The engine is kept cool by water which is circulated around channels within the engine/cylinder block. The water is forced around the system by a pump connected directly to the crankshaft;
- The moving parts of the crankshaft/piston system are kept cooled and lubricated by oil which is stored in the sump. The oil is also pumped around the engine/cylinder block by a pump.

Typical auto-engine system (figure 3)



Internal view of the engine (fig. 4) and External view of the engine (fig. 5)



3.3 Diesel engines

The main difference with diesel engine is that they have no sparking system on diesel engines. Injectors force the fuel/air mixture into the cylinder. The higher levels of compression used in cylinder then force the mixture to explode - it is the use of higher compression which makes the combustion process more efficient in diesel engines. Apart from this there is little difference between the two engine types.

Another key difference is the use of fuel pumps on petrol engines, and the suction of fuel by the injectors in diesels. This means that if a diesel engine runs out of fuel, the fuel system must be 'bled' to remove the air before it will properly function again (this is not necessary on a petrol engine).

3.4 Gas engines

Gas engines are becoming increasingly popular as a more efficient and less polluting alternative to the use of petrol and diesel. They run on either butane/propane, or liquified petroleum gas (LPG).

Gas engines are broadly similar to diesels in that they directly inject fuel and air rather than mixing them in a carburettor - but unlike diesel they still use spark ignition.

Gas engines are present the same general problems in terms of sabbing, but the main thing to be aware of is that the fuel system uses highly flammable gases under pressure - therefore it is not a good idea to cut any fuel lines or damage the injection system - unless you want to do this deliberately in order to torch the machine. Any spark following a release of gas, especially if you are still near the machine, could be fatal. Likewise, trying to make holes in a gas or LPG tank can have fatal consequences too.

3.5 Basic sabotage of engine systems

When considering how best to damage an engine, most public libraries provide you with ample help. The numerous range of DIY car maintenance manuals, on everything from scooters to small vans, give you graphic descriptions of what certain parts look like, and how to conduct 'maintenance' on them. I advice you to study this resource closely. You might also find it useful to enrol on a car maintenance workshop/evening class at your local technical college.

Coming back to our earlier principles, there are four basic features of the engine to consider when deciding how best to disable it....

Energy source	-->	Fuel system
Energy conduit/regulator	-->	Fuel injection/ignition system
Energy conduit/lubrication	-->	Clutch/gear system
Energy source/sink	-->	Electrical system

Fuel system:

As noted earlier, cutting the fuel lines to a engine is quick and easy, but can also be easily repaired. It is also a potential source of pollution of the environment if the fuel contaminates soil, or enters storm drains. It can also spill all over you.

There are a few simple ways to disable the fuel system of an engine...

- Cut the fuel line at the tank (but this is easily fixed);
- Fill the tank with an foreign material to block the system - soil or sand are the most usual substances to hand. Basically you keep loading the stuff into the tank until it's full. This is actually quite problematic because the tank must be removed and cleaned;
- Put substances into the tank to affect the performance of the fuel - basically sugar or syrup cause an overload of carbon which clogs the motor, and high energy hydrocarbon based liquids such as acetone or hydrazine make the fuel burn so hot it damages the engine. Both these options can be expensive to fix;
- Smash the fuel pump (petrol engines, and diesels with pumps only) - relatively simple to fix in a day or too, and cost a little more than just cutting the fuel line.

Injection/ignition system:

This option is less messy in terms of fuel spilling everywhere, but holds the risk of starting a fires, especially if the engine is hot.

On a petrol engine, remove the air filter (if there is one) to gain access to the carburettor. Then, using a cold chisel, hammer the carburettor. Carburettors are normally made of cast aluminium, and so it won't stand up to this treatment. To be on the safe side, it is better if you cut the fuel line first, and douse the whole engine/carburettor with water the prevent any sparks igniting the fuel.

On diesels, again take your hammer and chisel, and break off the injector, then stove in the ends of the injectors where they enter the cylinder block. Injectors are expensive to replace, but stoving in the thread makes things even harder.

The other option for petrol systems is to rip out the distributor cap and leads. Also, after removing the cap, hammer the rotor arm and contacts to create the maximum possible damage.

On newer petrol engines, where ignition and fuel injection is computer controlled, trace the wires from the spark plugs back to the box or unit containing the timing system. Then use the standard approach for electrical appliances - hammer a blunt screwdriver through the unit once or twice. This is an expensive thing to repair.

Finally, on petrol systems and diesel systems (although its harder on diesels because the injectors have to be replaced with a torque wrench to the right tension), take out the spark plug or injector, and drop one or two ball bearings into one cylinder only - the engine won't fire properly if you put it in more than one cylinder. Replace the plug/injector, and make everything as if no one had ever been there. Then, when the engine is switched on, in just a few minutes the piston and cylinder head are ruined - this is expensive to cure.

Clutch/gear/differential:

The power train - that is the crankshaft, clutch, gear and differential system which transfers power from the pistons to the wheels - is vulnerable only in two respects.

Firstly, the engine sump, the gearbox and the differential (if the vehicle has one) are all vulnerable to abrasives in their lubricating oil. Further details on how abrasives can be used are given in Volume I. There is little problem getting abrasives into the sump - the oil filler provides a direct route. Getting abrasives into the gearbox is tricky because of getting access to the filler nozzle. You also have the same problem with the differential (the differential is the bevel on the back axle of most heavy lorries/construction plant which transfers the motion of the drive shaft through 90o to turn the wheels).

The clutch has exactly the opposite problem - it should be kept dry. If you can release the clutch housing, and spray in a mixture of grease and sand, it does immense damage to the clutch plates.

The electrical system:

The electrical system essentially consists of the battery, the alternator, the starter motor, the injector heaters (diesel only), the distributor cap and sparking coil (petrol only). Some petrol engines, especially older stationary engines, do not have alternators - instead they have magnetos (like the dynamos on bicycles) which are directly connected to the crankshaft.

When considering the electrical system you have three prime targets...

- The battery;
- The alternator;
- The starter motor;
- Cables and fuses.

The battery can be easily removed - that is a straightforward task of removing each terminal connector and then loosening the retaining straps/bolts.

The alternator and the starter motor present different problems - mainly how to damage a well constructed and enclosed electrical device. If possible try and find an opening in the alternator/starter motor housing. What you are looking for are bundles of copper wire wound on metal formers. The simplest way to damage the wires is to use a sharp chisel or screwdriver to hammer and cut/split individual wires. If this is difficult, just try and drill your way through the casing into the coils.

Another other option is to open up a hole in the casing, perhaps with a drill, insert some sort of small funnel, and then pour acid in to fill up the casing - the battery is a good source of concentrated sulphuric acid, but ferric chloride will do just as well.

Finally, for good measure, always cut or rip out any electrical cables. This can be easily fixed, at much less cost than replacing the alternator and starter motor, but it's good for annoyance value. Also, if there is not time to sort out the electrics properly, ripping out the wiring is very quick. Also keep an eye out for any fuse boxes - a quick swipe with a hammer or the round end of a crowbar will smash the fuses and more importantly the fuse holders.

4. MOTOR BASED SYSTEMS

4.1 Types of electric motor

Most electrically powered mechanical equipment contains some sort of electric motor. By damaging the electric motor, you disable the whole machine. In practice this can be easy to do since electric motors (with the exception of those designed to be used in extreme conditions) are delicate objects which must be kept cool, dry, lubricated, and free from dust.

There are a wide range of electric motors, in different shapes, sizes and constructions. You should also be aware that most generator systems use devices almost identical to electric motors 'in reverse' - by turning the motor manually you create electricity. Therefore this section could be equally applied to generator systems.

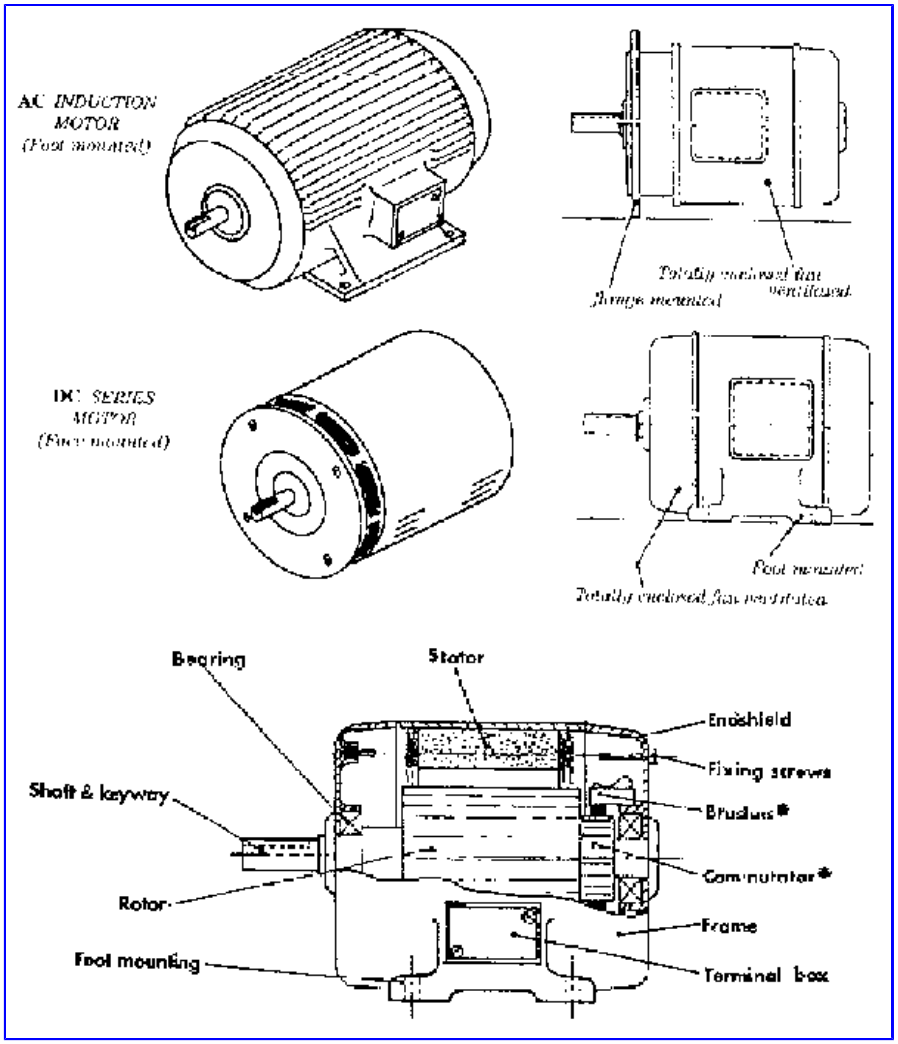
4.2 DC, AC and 3-phase motors

Motors come in different physical sizes, but they also run on different electrical supplies. Some run on single phase *alternating current*
(AC) supplies like you have in your home. Others have 'three phase' supplies, equivalent to three domestic supplies with the alternating currents out of phase, to give the motor more power (these are generally used in industrial plants). Finally, some motors use *direct current*
supplies - this is mainly when the motor draws its power from batteries, solar cells, or generators which power 'through' a bank of batteries (most vehicles use this system).

All motors work on electromagnetism, that is, the action of the electricity creates a magnetic force within the motor which turns the shaft. AC and DC systems operate this system rather differently, but the principle is essentially the same.

The diagrams on the previous page show the essential parts of electric motors. Note also that although the workings are similar, they come in different constructions - some are flange mounted (a good example of flange mounted motors are pumps, such as hydraulic pumps), and some are foot mounted (most mechanical systems use foot mounted motors).

The design of electric motors (figures 6-8)



4.3 Generators

As noted above, a similar device to a motor used in reverse can create electricity. The energy expended by turning the shaft creates electrical energy which flows out of the device.

When sabotaging generators the considerations are essentially the same, but you must always consider the practicality of your actions (as noted earlier in this volume). By sabotaging a generator you deny equipment electrical power - but a generator is easily replaced. On a work/cost/benefit analysis it may be a better option to actually sabotage the equipment that the generator powers rather then just doing the generator itself. However, in certain situations (such as building sites) taking out a generator can be much faster than doing every piece of machinery.

4.4 Basic sabotage of electric motors

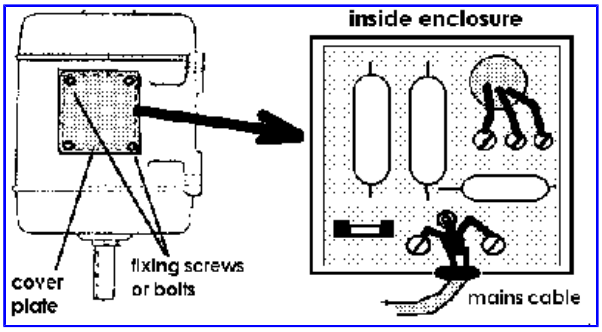
There are various options for disabling electric motors. Essentially it is a matter of cutting the supply of energy to the system, damaging the moving parts of the system, damaging the electrical circuits or attacking the bearings/workings using abrasives or glue.

Electrical supply:

Cutting the supply to an electric motor can be done in a few seconds - taking all the normal precautions when cutting high voltage cables. The only problem here is that the cables can be very quickly reconnected by even amateur electricians. In practice when disconnecting the supply you have to do a little more.

Many electrical motors do not simply have the power cable entering the motor - often it is necessary to have additional electrical components to modify the electrical current, or proven the emission of electrical noise into the power system. On larger electrical motors the electrical components needed to do this are large, and are often mounted within a metal enclosure on the side of the motor housing. Smaller motors may actually have the components just wired onto the outside.

Motor power control (figure 9)



The diagram above shows a typical layout for the enclosure. The cover plate is held in place by screws or bolts - these can either be removed, or if they are fixed (or riveted) drilled out. Beneath the plate you will find a few electrical components (normally cylindrical or disc like, perhaps some fuses, and a number of terminal where the wires from the mains cable and the motor are connected.

You now have three options...

- Forget removing the cover, just smash the entire enclosure off the side of the motor - effective but noisy;
- Cut the wires inside the box, and if possible remove the electrical components and dispose of elsewhere;
- More infuriating to your target, carefully remove the cover plate, remove the components/cut wires, then replace the cover plate and fix with superglue and/or threadlock on the screws.

Taking this approach creates more difficulty. It is highly likely that the operator will have to employ professional motor servicing people to fix the damage - which might take a day or two.

Moving parts:

The power from an electric motor is used for something - the simplest option if easy access to the coupling between the shaft and the drive mechanism is exposed it to damage or disconnect it. Drive shafts are hard things to break, so this will normally entail unscrewing things or taking bolts out.

Alternatively, you could weld or solder up the shaft where it leaves the motor. If there is no surge protection or fuses in the system (possible on old equipment) this will burn out the motor when it is turned on.

Another option is to damage the air cooling fan. Electrical motors produce large quantities of heat as they run. On large motors this heat cannot be dissipated quickly enough through the metal body of the motor, and so air is blow through the motor housing by a fan connected to the shaft.

There are two simple options to make the motor overheat:

- Remove the fan - but replace the motor housing so no one notices. Eventually the motor *may* overheat and burn out, but this is dependent upon the load put on it;
- The best option for a motor that is actually running is to pour fine dry sand, or some sort of powder, into the fan, or the air inlet (depending on where the air enters the housing). This will be sucked through the motor and will either gunge up, melt or abrade the internal workings of the motor until it either burns out, falls apart, or catches fire.

Electrical circuits:

The flaw in any motor is the integrity of the hundreds of feet of copper cable that are wound in coils within the motor. If you can break or cut some of these cables the whole motor will have to be replaced - which could take some time.

There are four main ways of doing this:

- If the cables are exposed enough, cut them with side cutters or a small hacksaw blade (copper is soft and cuts easily using a hacksaw blade on its own - not actually set in its frame holder);
- If it is difficult to get at the cables, or they are some distance in, use a screwdriver or chisel to part the coils;
- Pour acid over the coils or inside the motor housing - do not do this when the motor is running or you'll splash acid everywhere!;
- Tip some form of home-made incendiary compound into the motor housing and set it off (this makes the biggest mess of all).

There is another option for breaking the electrical circuits. On some motors power must be transferred to the coils of wire which rotate on the shaft. To do this there are a set of electrical contacts (called brushes) and a metal contact surface called the commutator. You should be able to remove the brushes fairly easily (often they just screw in on the end of springs) and get rid of them. Better still, if you can see the commutator (perhaps after removing the brushes) pour acid over it. The corrosion this causes can only be fixed by taking the motor apart.

Bearings:

Small motors do not have bearings - big ones have various types depending upon the amount of energy they put out. The easiest way to damage bearings is to pour abrasives such as sand or grinding powder into them. Sometime the abrasive has to be suspended in grease to get it into the bearing.

Glue:

There are two options for gluing up the workings of a motor:

- On small motors, you can put epoxy on/around the shaft to stop it turning;
- Most effectively on large motors, pour epoxy potting compound into the motor housing and let it set.

Glue tends to be an expensive option for damaging motors, but it can be used to best effect where you want to damage something very specifically - the motor mechanism controlling part of a larger machine for example.

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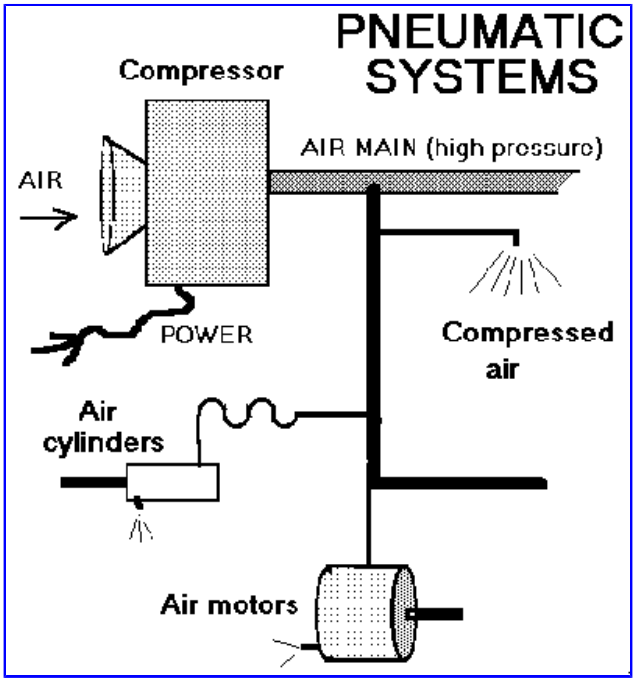
5. PNEUMATICS

5.1 Pneumatic systems

Pneumatic systems use pressurised air to make things move (for example, pistons), to hold things up (for example, car tyres), or to move things (for example, air lines inside hopper feeder tubes).

(figure 10)



Dealing with pneumatic systems poses some dangers: if you puncture the balloon tyres on an earth mover they may rip open and injure you. If you puncture a high pressure air line, small particles of flying dust or metal may damage your eyes.

Pneumatic systems are used mainly in the following situations:

- Mechanical systems in industry, mainly using piston/cylinders to move rods or levers;
- On automotive equipment air brakes are widely used where large amounts of energy need to be used quickly (e.g. braking systems for lorries and trains);
- Many hoppers and material storage systems use streams of air to move dust or small particles.

Again taking our earlier analysis, in pneumatic systems there are sources of energy, methods for transporting that energy, and then methods for expending that energy. Compressors take atmospheric air and squash it - creating air at high pressure. Strong pipes then carry this high pressure air to where it is needed. This air can then be used in a number of ways.

5.2 Compressors

A compressor is basically a large pump, operating at high speed. It takes air of volume X, and reduces this volume by factor Y, so increasing the pressure proportionately. This process expends a lot of energy, and also creates a lot of heat (you may have found when pumping up a bike tyre that the end of the pump gets hot).

In fixed locations compressors are normally electrically powered. On mobile equipment they are engine driven. This provides 'two bites of the cherry' in terms of sabotage. You either take on the energy source - be it the engine or the electric motor, or you take on the compressor itself.

The first obvious flaw in the compressors design is the air intake - this is normally covered with some form of fabric filter or

gauze. By removing this cover you can pour fine power or small abrasive particles into the air intake. On smaller compressors, pouring resin/glue into the intake will have a similarly damaging effect. But beware, the effect, especially on a large compressor, may be rapid and severe. If possible rig up some system to remotely pour in the material, or throw it in from a safe distance.

Next, there are the control systems of the compressor itself. Compressors working from engines are normally very simple affairs, but large industrial compressors are very complicated machines, with complex control mechanisms. If time is short, damaging the control mechanisms is the easiest option. This is best done with the compressor not working - most large compressors are fitted with 'emergency stop' buttons, and simply hitting this will shut down the system. You then can work on the control boards, BUT BEWARE, stopping the compressor does not isolate power from the electrical systems!

Another important part of large compressors is lubrication - in some situations this may also act as a coolant. Where there is no other option, draining the lubricant or coolant will normally cause the shutdown of the compressor - either because it seizes up or because the control systems detect the change and cause automatic shutdown.

Finally, you may be tempted to damage the main airline leaving the compressor. If the compressor is operation this could be lethal. If you do this with the compressor off, it may injure someone when the system starts. The pressures involved make it too risky. The safer option is to take the air lines further down the system on the smaller bore pipes (the smaller the pipe... the less the capacity for air flow... the safer it is to cut).

One last thing - do not get a compressor confused with a chiller. They can look similar, but the main way to tell them apart is that the main movement of air is into a compressor, but out of a chiller. Also, the air leaving a chiller is warm, and there is normally a lot of water swilling around.

5.3 Air lines

Air lines are very simple things. They are pipes that carry air under pressure from the compressor to where it is needed. But air lines are very dangerous. If you cut a long flexible (plastic or rubber) tube, it will begin whipping around, and could injure anyone stood nearby. Likewise, any metal air line with a diameter of more than 10mm could contain a lot of energy - cutting it might cause shrapnel to hit you, and the hiss of air from the split will act like a steam whistle, which could damage your hearing.

In general, if an air line is made of steel, it is because it is meant to carry a lot of pressure - so you might consider not cutting it. Flexible or plastic lines carry lower pressures, and are easier to cut.

A safe way to damage larger air lines, in a way which is difficult to find, is to hand drill then with a small - 1 or 2 mm - drill. If you do this in enough places, the air leakage will not be dangerous, but the leakage will be significant enough to affect the system.

5.4 Cylinders and motors

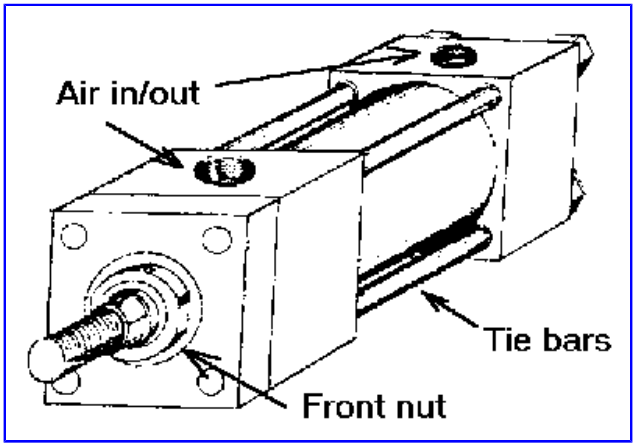
One of the main uses for compressed air in industry is to make things move - from printing machines to advanced robotic assembly systems. The main component in these systems is the pneumatic cylinder.

Cylinders work 'in reverse' to an average bike pump. Air is inject at one end or the other. This moves the piston inside the cylinder, and the rod connected to it. The power with which this takes place is proportional to the diameter of the piston - the greater the more power.

Unlike hydraulic systems, where fluid is conserved, in pneumatic systems the compress air is always released. Whereas a hydraulic ram needs to be pushed in both directions, the pressure in the 'live' side of the cylinder pushes against atmospheric pressure (which is much lower), and the piston moves. To make the piston go back and forth it is therefore necessary to have two-way valves which allow the air to flow out of the cylinder, but switch to allow high pressure air in when the piston needs to go back. A simple way to disable the cylinder is to damage or remove this valve. In cylinders where fast movement is needed the valve will be located on the cylinder, but otherwise you will have to trace the pipes back to where the valve is located. Sometimes the two-way valve is incorporated into the mechanical or electromechanical switch which controls the cylinder - in which case you can do even more damage.

There is a very simple way to disable cylinders - cut the pipes leading to them. This of course is easily fixed. If you have more time there are three other options:

Typical pneumatic cylinder (fig. 11)



- On many cylinders there is a large nut on the front of the cylinder which the rod emerges through. If you undo this nut, the seal and bush which supports the rod come apart;
- If time permits, there are four or more tie-bars which hold the two ends of the cylinder together. If you undo the nuts/screws on one end the cylinder falls apart;
- A good, quick, and fairly expensive option is to drill through the wall of the cylinder - but make sure there's no air in the cylinder first!

Air motors look similar to small electric motors - except they run on compressed air. They are very well built, and so are difficult to damage. The simplest way to deal with them is to inject mastic or resin into the air input. If you really want to make a mess, inject as much glue as possible, then reconnect the air line and turn it on for a few seconds.

5.5 Tyres and balloons

Another example of systems are inflated vehicle tyres. These fall into two types:

- Tyres are fitted to mainly road going vehicles, and either have inner-tubes which hold the air, or are designs to hold the air in on their own (tube-less tyres). The rubber tyres is also strengthened by steel belts;
- Balloon tyres are used primarily on off-road vehicles and construction plant. They have a large surface area to spread the load across the ground - this means that heavy construction vehicles can move across soft unmade ground. Most balloon tyres do not have inner-tubes. Balloon tyres are problematic to deal with - mainly because of the thickness of the rubber/belting and the volume of air they contain.

The most straightforward way to damage balloons is to use a small drill and drill through the wall (but beware because the vehicle will tip as the tyre deflates). There are two options with normal tyres. You can drill through the tyres, but it is often simpler and quicker to cut off the valve of the inner tube with side cutters - but put a rag or something soft over the top of the valve before you cut in case it flies off as the air comes out.

5.6 Basic sabotage of pneumatic systems

How you tackle pneumatic systems will depend upon the accessibility of the parts of the system, and how much time you have.

If you have access to the compressor, the simplest option would be to stop the system using any emergency shutdown systems, and then disable the compressor. The only thing to beware of is that on electrical powered systems the power will still be live - although this can be solved by finding the junction box/isolator for the compressor and switching it off.

If the compressor is not accessible, then you have two options:

- You can damage the air distribution system. This involves either cutting the air lines (plastic lines are easily cut with side-cutters, metal ones can be sawn) or damaging the control vales. The obvious precaution here is do not cut large pipes while the system is active - drill them instead.
- You can damage the air cylinders/motors to stop the system working. Methods for doing this were given earlier.

Where no part of the system is accessible except the air intake - this is normally in factories - then you will have to load oil, or some form of powder, into the air intake. This will just clog the filter - so if you can puncture any accessible filters that will help enormously.

The quickest method to disable to entire system will be to take the power source away - either disable the engine driving the compressor (this is the setup of mobile systems) or isolate the electrical supply and burn the cables/control systems (this works on fixed systems).

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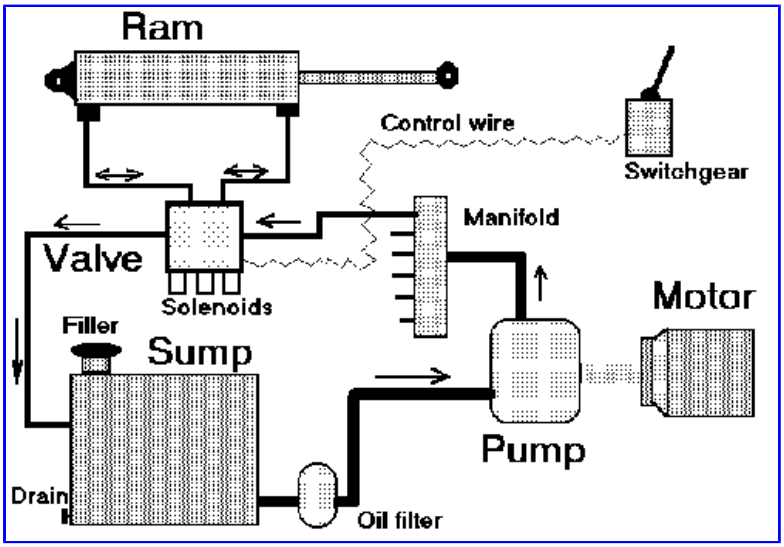
6. HYDRAULICS

6.1 Hydraulic systems

Hydraulic systems work in a similar way to pneumatic systems, but they are different in three respects:

(figure 12)



- The use of an non-compressible fluid as opposed to a compressible gas means that much higher pressure can be produced within the system. The increased pressure also means that the equipment is more robust and difficult to damage;
- Instead of working against atmospheric pressure, hydraulic fluid is conserved, and so hydraulic cylinders must be pumped in both directions. This means that the control valves are more complicated;
- The use of a more viscose and more dense fluid as opposed to a gas means that hydraulic systems move slower than pneumatics.

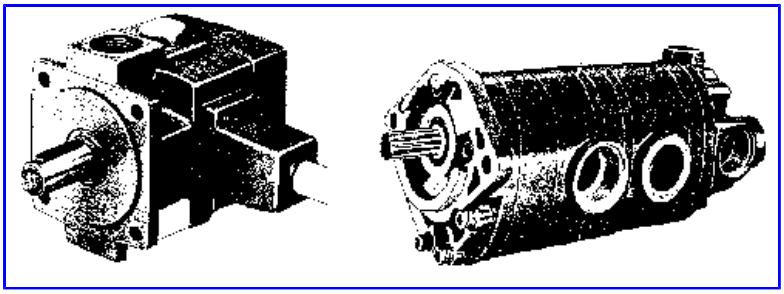
6.2 Hydraulic pumps

The source of power in a hydraulics system is the pump. This takes hydraulic fluid from the sump/tank and raises it to a higher pressure. The fluid then circulates through the system, much in the same way as pneumatic systems.

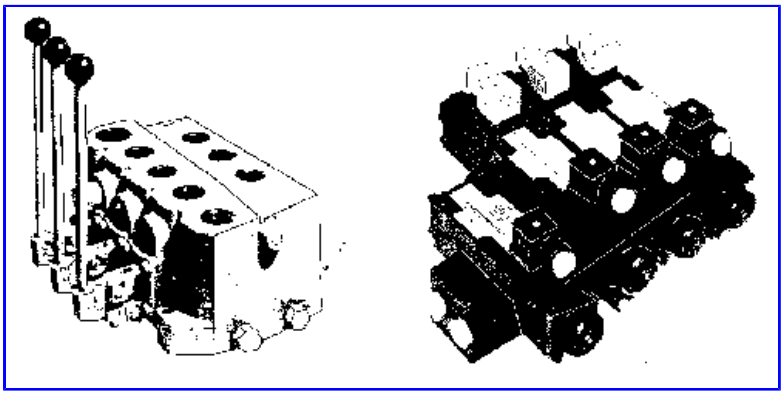
Like any other pump the hydraulic pump has an inlet pipe - this sucks hydraulic fluid in. The pistons or impellers in the pump then raise the pressure of this fluid, and it emerges at the fluid outlet (this is often the smaller of the pipes connected to the pump, and it is easily identifiable as the hottest if the pump is running). Caution must be exercised if you tamper with an operational pump - as with pneumatic systems if tampered with the high-pressure output from the pump could spray hot fluid over you, or burst/fail explosively. It is often easier, if the source of fluid is not accessible, to deal with the hydraulic control systems rather than take on the pump itself.

As noted above, because of the higher pressures used in hydraulic systems, the components of that system tend to be incredibly well built. This is especially so for the pump. To disable a hydraulic pump is quite difficult - you must either remove its energy source (either an electric motor, electrical connection, or an engine), or you must try and take it apart. The latter can be very difficult. A third option would be to spike the fluid with abrasive, but this might not have a very quick effect.

Typical hydraulic pumps (fig. 13/14)



Manual valve and manifold (figure 15) and Electrical valve and manifold (figure 16)



6.3 Valves and switches

Different types of hydraulic system have different types of control mechanism. At its simplest a system might comprise a sump, a pump, a ram (piston), and a 'changeover' switch which pumps fluid alternately to each end of the ram to move it back and forth. More complex systems may have one or more pumps, serving a large number of rams or hydraulic motors (similar to air motors).

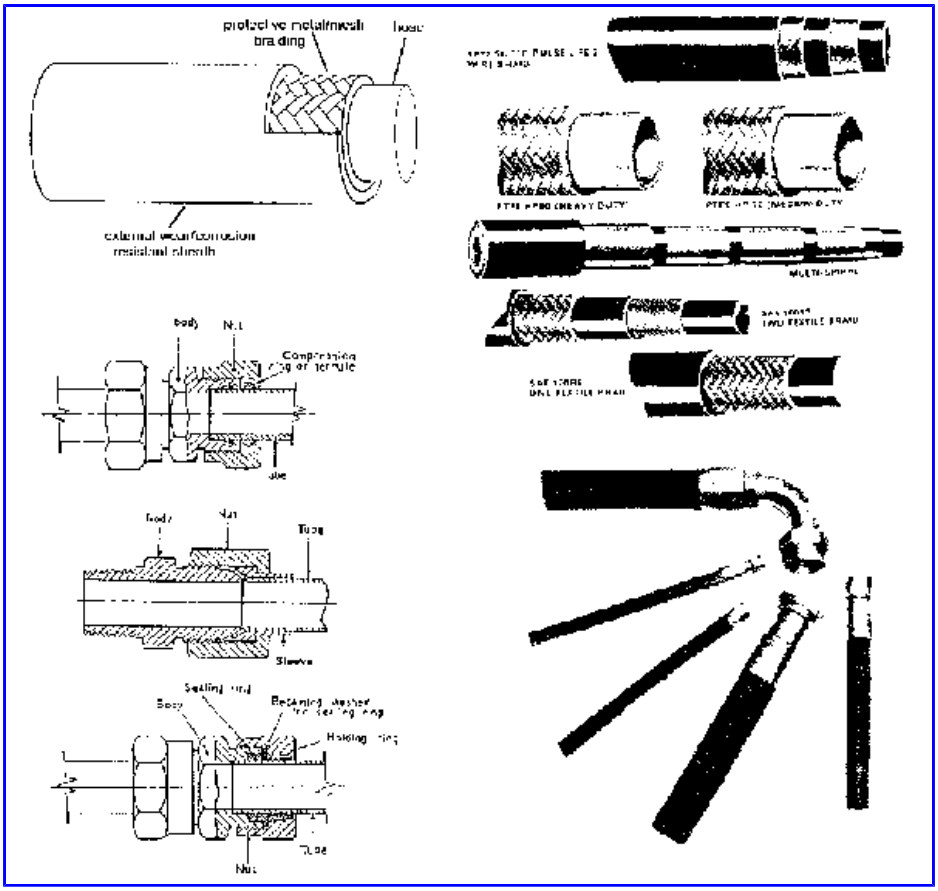
How the control systems are actuated can also differ; some are mechanical - you pull a lever to activate the valve; some are electrical - you press a button to activate the valve; and some are electromechanical - that is an electrical system might activate a road or cable which then pulls a lever which activates the valve.

How you tackle these different control systems will depend upon the target. Mechanical systems can be dismantled. Breaking them is very difficult because they are normally made from cast metal bolted together with high-tensile steel bolts. Electrical systems are simpler - the electrical connections are vulnerable, and the control panel itself may be easily modified. Normally the electrical part of the valve is in a separate housing on the top or side of the valve, and is often less sturdily built - in these cases more direct action against the valve is possible.

Electromechanical systems are difficult to explain, because they differ so widely. Tackling them is really a combination of the two approaches outlined above - you tackle both the electrical sections of the system and the mechanical parts.

Whatever the switching system, all valves will be connected to some sort of 'manifold', where oil under pressure is distributed to different parts of the hydraulic system. Often the manifold is part of/located beneath the main switches. Damaging the manifold, or removing the valves from it, is therefore a sure way of disabling the whole system.

Construction and designs of hydraulic hoses and hydraulic connectors (figures 17-20)



6.4 Pipes

One of the needs in the hydraulic system is to move energy - the oil under pressure - to where it is needed. This is done using two types of pipe:

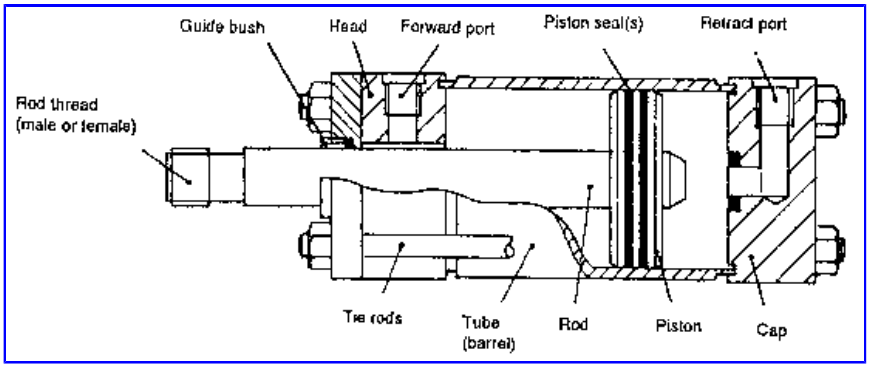
- Rigid Pipes: These are generally made of metal, with a diameter and thickness representative of the quantities and pressures of oil they carry;
- Flexible pipes (hoses): These are made of rubber composite materials - and can be armoured inside to make then puncture of tear resistant.

There are two basic options for sabotage - you either cut or drill. Cutting can be difficult, particularly with large heavy metal pipes. Likewise drilling can be also difficult on reinforced/armoured hoses.

With hoses there is another option though - you can unscrew them. Generally hoses have metal screw connectors on each end - most of these can be easily unscrewed if you have a spanner big enough for the job. Of course just removing a hose does not cause a lot of damage, so often the most effective method is to remove the hose (carefully plugging the holes to stop too much fluid leaking out), fill the hose with an abrasive such as sand, iron filings or small steel screws, and then replace the hose.

Cutting larger pipes and hoses can be time consuming - although small hoses may cut easily with bolt cutters, or good side cutters. In these instances you might consider drilling the pipe/hose with the small (2mm) drill - the end result is that the owner of the equipment will have to replace the part, which saves you the job of removing it yourself. Be aware that metal pipes can be welded up, so if you do drill metal pipes make a few holes, or better still, drill the hole right on the side of a screw fitting or joint of some kind (this makes welding more difficult as it affects the use of the screw fitting).

Typical hydraulic ram (figure 21)



6.5 Rams

Hydraulic rams do the actual 'work' in hydraulic systems - thus because they must withstand great stress they tend to be extremely well built, much more so than air cylinders.

In general I would say that it's not worth taking on a hydraulic ram if you are short or time - it's much quicker to just go for the pump, sump or pipes. However, it you do have time you could try drilling through the ram casing/tube, or trying to damage/remove the end bush. Another option is to remove the flexible hoses and swap them around, or remove the pipe/hose, inject abrasive materials into the ram, and then replace the pipe.

Don't forget also Newton's Third Law of Motion - '*for every action there is an equal and opposite reaction*'. The hydraulic ram must be fixed to something in order to anchor it. If you can undo these fixings so that the ram is not anchored to anything, it doesn't do its job.

6.6 Sump and fluid

Perhaps the greatest flaw of the hydraulic system is its need for oil - but unfortunately oil is relatively cheap so depriving the system of oil has no great long term effect. Also, removing oil can have serious environmental consequences. So we have to work in ways which eliminate/minimise the spill of oil, but still render the system unusable. This essentially means finding ways to contaminate the oil to make it useless.

There are three straightforward methods...

- Where time is short, just fill the sump with material - nuts, bolts, sand, dirt - anything that will clog the system (this is my preference in any case). Water doesn't have any particular damaging effect on the system, but it will prevent the system working efficiently.
- If you can remove the oil filter (if there is one) to spike the filter papers, you can put abrasive substances like polishing/grinding powder, or sand, into the sump. Over time this will cause damage throughout the system.
- If you don't mind getting messy, and you can get access to the outlet from the sump, pack clay or some plastic substance into the pipe - as much as you can. If you are lucky the pump won't be able to suck oil, and if it does, it will clog the oil filter or the pump.

The only thing to beware is that when fiddling with the sump, try not to splash too much fluid on your skin, or more crucially, in your eyes. Some people have a sensitivity to the substances in the hydraulic fluid which brings them out in a rash, and getting oil in your eyes can cause serious damage.

6.7 Basic sabotage of hydraulic systems

How you tackle a system depends on what it is, where it is, and most importantly how much time you have...

- On all types of system go for the sump first, because spiking that will disable the whole system. Also, in terms of damage, the sump will have to be removed and cleaned, with perhaps a few other components, which will cost a lot of time and money.
- Next go for the control systems/electrics - this will equally stop the whole system, and will cost money to fix. The problem comes with mobile equipment because increasingly the cabs of vehicles are alarmed. Stationary equipment is much more easily damaged in this respect, if you can get access to the controls.
- Hoses next, if they are the sort that you can cut or drill easily. As noted earlier, don't just thing about cutting - unscrewing

hoses, particularly on things like JCBs where the hoses are well made, is much quicker.
- Rigid pipes last because they can sometimes take time to drill, and you will have the least effect.

Also you must think of 'quality'. Take a few minutes to study the system and work at which hoses connect to what, or which control systems actuate what ram. That way you can tackle the most crucial parts of the system.

Another thing to consider is whether the system is active or not, and whether, even if the system is turned on, the pipes/hoses are under pressure due to gravity. An associate was mildly hurt when cutting the hose on a JCB - the jib of the JCB was raised, and the oil in the pipe held the jib up against gravity. When the hose was cut, the jib came down - very quickly!

Likewise, cutting a pipe/hose in an active system can be very dangerous, if not because of the effect on the system, then because of the hot oil under pressure it sprays out in every direction. In volume I there is an illustration of how to drill pipes under pressure - this should only be attempted on small pipes you can be reasonable sure carry little pressure.

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7. SWITCHGEAR AND INSTRUMENTATION

Nothing works unless it is told to by its electrical or human master. In modern warfare the first thing to be attacked are the lines of communication. Likewise the most effective, quick, at expensive way to disable equipment is to disable the control systems. For example, how would you turn a computer on if someone removed its 'on/off' switch?

7.1 Controls/switchgear

A good way to disable any system is to disable/damage the control systems. Especially on more modern systems, where specialist control devices are made to order, this can be very expensive to fix.

Control systems essentially break down into three groups...

- Switches, levers and actuators: This is where a simple switch operates something - for example the lights on a car;
- Switching systems/switchgear: This is where the control the user operates a switch/pushes a button/pulls a lever and engages other systems, which may be fully or partially automatic, and which then switch themselves into different states according to preset 'hardwired' timing or mechanical systems;
- Programmed systems: These are the most modern and involve the use of computers or 'programmable logic controllers' to coordinate the switching of different systems - for example in modern manufacturing equipment.

Note also that these switching systems need not be all electronic, or all mechanical - there are still a number of systems in operation using mechanical or electro-mechanical control systems.

How you tackle a system will depend mainly on its make-up. If you have a wholly mechanical control system, for example on a aggregate grading screen, you would either go for the levers that control the system, or the linkages from these levers. But if you were dealing with a more complex system, for example an electrical generator, it would make more sense to go for the electrical output controls (the switches, power meters, fuses, etc.) than to just go for the switch that starts the engine.

7.2 Mechanical controls

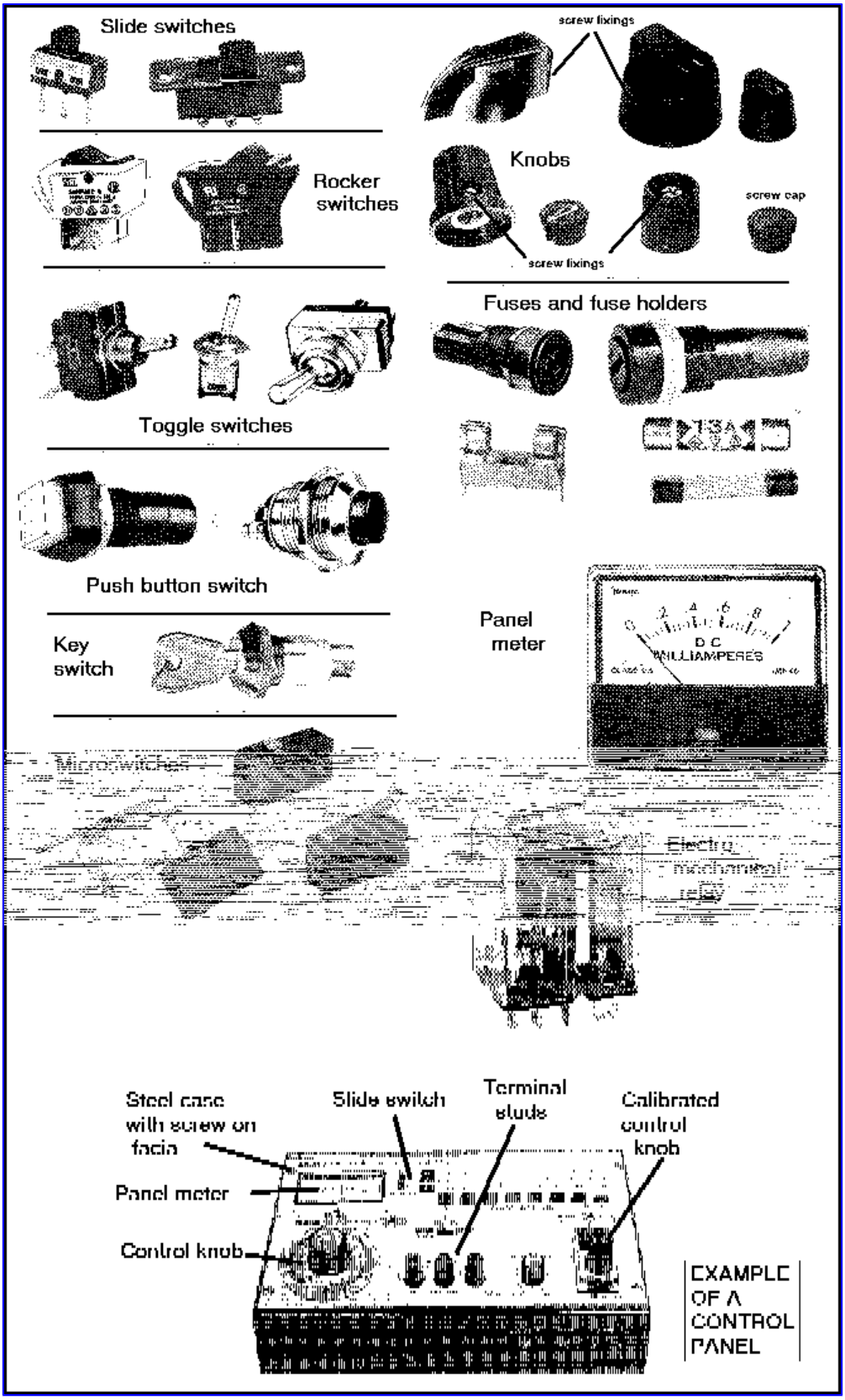
Mechanical controls are either very flimsy affairs, such as brake cables, or they are very tough, such as the levers on large earth movers. Sometimes brute force, or endless tooling away, is not the answer. Many hefty control systems, such as steering wheels, actually come of very easily if you take them apart rather than cut them apart.

As a very simple guide...

- Levers can be bent backwards and forwards till they weaken and break. Stronger ones can be removed, or if that is not possible, immobilised using resinous glue on their mounting pivots/hinges;
- Control cables can be cut - you will need side cutters/bolt cutters (depending on size) for this as the high-tensile steel does not cut very easily;
- Some levers are held in place with pegs or 'scotch' stops. These can be removed, or glued/welded in place.

An issue to think of in all this is of course safety. You should never cut the brakes of a mobile vehicle - it is extremely dangerous to the operator and other people. Likewise never start cutting a control cable or control rod unless you are pretty certain that you can finish the job. Leaving cables and rods half cut is dangerous as they can fly apart and injure those nearby when the machine is operated. If you have any doubt about the effect of what you are doing - don't do it!

Examples of electrical control panel components (figure 22)



7.3 Electronic controls

The illustration on the previous page shows a range of electrical control components - switches, knobs, meters, relays and fuses. How you tackle a control system is dependent upon how it is controlled, and so it is important to know how to tackle each element of the control panel.

Switches:

- Slide switches can be superglued very effectively, or you can use a hammer and centre punch to push the switch slider through the bottom;
- Rocker switches can be glued, although not so well. Most rocker switch bodies are made from plastic, and are sometimes illuminated. The simplest way to deal with them is to push/hammer a large insulated electrical screwdriver through them. Unlike slide switches, rocker switches can use mains voltages, so it is essential your hands do not touch the bare metal of your tool. Rocker switches are normally fitted from the front of the panel, so if you dig a screwdriver/chisel under the edge and lever, you can pop the switch out of the panel. Then you just clip the wires using insulated side cutters and chuck the switch away (or stamp on it);
- Toggle switches can be easily damaged - you either use your side cutters to cut off the toggle arm (making the switch harder to use), superglue the pivot/ball at the base of the toggle, or just hammer the arm of the toggle to break it;
- Push button switches are harder - you either glue them or get an insulted screwdriver or punch and push the button in. Alternatively you can get some 'mole' grips, adjust the screw so that the grips tightly clamp onto the button, and then wrench it out;
- Key switches are most easily glued up;
- Micro switches are easily broken using a hammer, crowbar, or they can be easily broken/prized away using a screwdriver or chisel. But beware as they often operate at mains voltages.

Knobs:

- Knobs can either be broken off using a hammer/crowbar, or if you have a small screwdriver you can just remove them. Some knobs also just pull off. Those that have no obvious screw fixing, and don't pull off are either permanently fixed on, or they have a 'screw cap' - this can be popped off to gain access to the screw fixing.

Fuses:

- Most modern fuseholders are fixed into the panel, with only their heads sticking out. You then unscrew or pop out the end of the holder to remove the fuse. Another method is to pop out the fuseholder and fill the space with resin/potting compound, or to remove the fuse and just superglue the top back on again;
- Clip fuseholders can have their fuses removed, or more simply, just bash them on top to bend the terminal spades beyond repair;
- Fuses should never be 'bridged' - that is replaced with bolts or pieces of thick wire. There are there for a reason - to stop things drawing too much current, overheating, and potentially starting a fire. Just remove the fuse, or render it useless - don't replace it with something that won't fuse when it is needed!;
- Circuit breakers (not illustrated - they are usually marked 'circuit breaker' or 'earth leakage trip') detect current leaking to earth and break the circuit. They are essential to protect people from being electrocuted, and should not be tampered with. Either smash them beyond repair, remove them, or leave them alone.

Meters and displays:

- Panel meters use small coils to display a current or voltage reading on a scale. The simplest way to disable them is to jam a screwdriver through the dial - use an insulated electrical screwdriver for safety!;
- Digital meters (not illustrated) use LED displays, arranged as dots, bars or numbers, to give a digital reading. Again, these are easily disabled using a screwdriver, or the spade end of a crowbar;
- Cathode ray tubes (not illustrated - basically things like TV screens, computer screens, etc.) are large glass bulbs with no air inside. This means that when they are broken they implode - and then shower the area and anyone stood nearby with shards of glass. The simplest way to break them is to throw a brick/heavy solid object at them from ten yards away, or cover the screen with some think material such as canvas or carpet, and then hit them with a hammer.

Relays and PLCs:

- Relays are magnetic switches - an electrical current creates a magnetic force that switches the metal contacts. Many relays can be removed from the sockets they are plugged into - this means you can either remove and dispose of them, or remove them, cover them in superglue, and quickly put them back. If you don't glue them back remember to smash the socket housing. If you do glue them back smash the relay so that it won't work. Alternately you could leave the glued relay as it is and give someone a surprise at a future date when it needs replacing;
- Programmable logic controllers (PLCs - not illustrated) are becoming increasing popular means of controlling machinery - they were discussed at the end of Volume I. The 'hardwired' kind are often mass produced, and so smashing them doesn't achieve much. But if you see a programmable version - which normally has a small keyboard and LED display, smash the hell out of it with a hammer or crowbar because they are very expensive to replace.

At the bottom of the electrical controls illustration is a small control panel. This is a good example of what you might see - it has controls (knobs/switches) and instruments (panel meters/LEDs) - which need to be 'improved'. With any control box there are five options...

- Glue it - just put glue over the switches - quick and easy, and it doesn't make any noise;
- Disable it - this means pushing screwdrivers through the instruments, and damaging the switches. This makes more noise, but is equally as quick;
- Dismantle it - this means taking switches and meters apart, and if possible, removing the front panel and tackling the electrical components behind the front panel;
- Smash it - the loudest but most devastating option. The control box in the illustration is made of steel, making it very tough. In these situations you really need to remove the screws holding the front panel on to have a go at what's behind. If the control box is plastic then a crowbar is the simplest option - either use the round end as a hammer to break you way in, or the spade ends to stab/lever the box apart. You can do a lot of damage very quickly - but it is very noisy;
- Acid - where you are fairly sure that there is a lot of complicated circuitry behind the front panel, you can make a small hole and pour acid inside. But be very careful not to spill it everywhere - and leave a note to tell the operators that there is acid inside. The only thing to beware is that if electricity is still flowing through the box then it may catch fire, or potentially explode.

The purpose of the control panel is also important. With large earth movers it is sometimes easier to go for the controls than for the extremely well-engineered workings of the engine. You really have to apply the analysis explained at the beginning - the source, control and use of energy. Damaging the energy control systems is likely to immobilise the machinery, but is repairable. Damaging the engine or power source is often a much more serious matter to put right. You really have to make up you mind, as part of your scoping exercise (see Volume I) as to what you want to achieve from your work.

7.4 Computer systems

Computer systems were dealt with in general in Volume I, and there is little to add.

In general you should always try to take on the main computer unit - damaging computer screens or keyboards has little effect as they are easily and cheaply replaced. But if you damage the main unit, this gives a bigger "£ per hammer blow cost" - some of the computer chips cost £300 to £800, and a replacement hard disk can cost three times the cost of a keyboard.

A very annoying tactic is to get a floppy disk, cover it in glue, and stick it into the disk drive. This not only means that the computer is effectively disabled in a simple, quick and quiet manner, but it is difficult to get the data stored on the hard disk out of the system without paying a lot of money to a computer engineer to remove the hard disk and read the data off it, or replace the disk drive.

With larger computers, where the circuit boards inside are easily accessible, the simplest option of to just open the cabinets, pull out the boards and snap them in two - this can be difficult by hand but if you prop them on a block or against the wall and stamp in the middle this is easily achieved.

7.5 Basic sabotage of instrumentation and switchgear

As noted above, you have to make a judgement before you start about what you want to achieve. Going for the control systems can be quick, simple, and more importantly quieter, but you may not have the permanent effect that damaging the sources or sinks of energy might have. The exception to this general rule is the more complicated systems controlled by PLCs - damaging the PLC effective renders the whole unit useless until it can be replaced, normally at great expense.

With mechanical systems, you have a option to cut or dismantle. Dismantling is quieter, but takes longer. Also, by cutting or smashing the controls you often creates "collateral damage" which take more time and money to put right than dismantling would.

With electrical systems you need to make sure that the damage you are doing will have some effect. Quite often the electrical control boxes are mass produced, and they can just bring another out and plug it in. In these cases it might be better to spend your time on other parts of the system.

I generally apply the following hierarchy of options when tackling control systems...

- Go for the parts the operator actually must use as part of the basic function of the system. For example, removing the steering wheel of a car, and gluing the ignition, will be more effective than smashing the speedometer;
- If there are essential display, such as temperature, speed, or pressure, go for them next;
- Next go for the quick and easy controls - glue the switches, screwdriver the displays, etc.
- If the control box is easily opened - that is if it is made of plastic or the screws are located in easy reach, opening and proceed

to work inside. If not, move on to another part of the system;

- If time permits, think of some more creative sabotage - remove and glue up the relays, or bend the levers into funny shapes;
- If time is critical, or you need to be as quiet as possible, often 25 grams of superglue strategically squeezed can be as effective as smashing the controls. In effect you defer the smashing and dismantling to those who must repair your handiwork;
- Above all, do not do anything that endangers the operator or the public - don't leave live wires dangling, don't bridge fuses or only partially damage circuit breakers, and don't make unsafe any control system that is essential for safety - for example fire extinguishers, brakes, or safety valves.

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8. VEHICLES

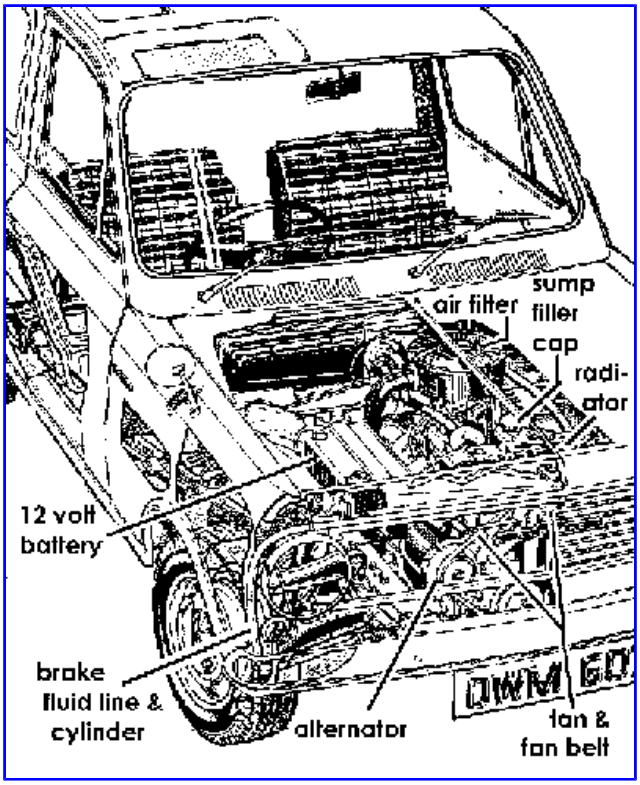
8.1 Cars, lorries and construction plant

Tackling cars, lorries and mobile construction vehicles presents its own problems, which set them as a class apart from other hits. In general the important parts of the system are concealed behind rigid steel enclosures making them difficult to access. The control systems are normally inside a cab, locked behind doors and tough glass. Finally, and most importantly, the intrinsic value of these machines means that they are more likely to be alarmed so that sabotage becomes difficult or impossible.

Cars and vans are probably the most difficult to damage effectively - although it is often a simple matter to immobilise them in some way. These days not only does the vehicle have motion and vibration detectors, but even the bonnet and petrol cap are lock and alarmed.

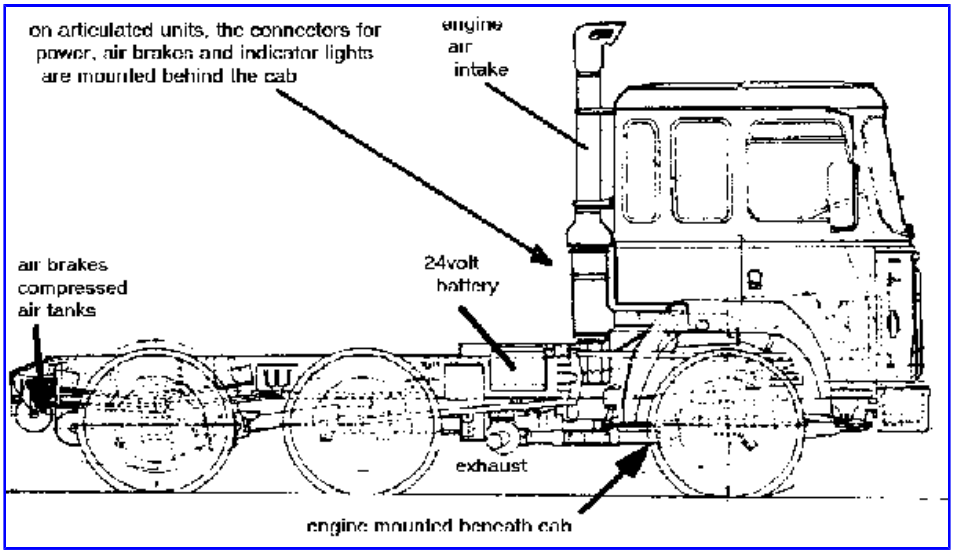
Taking on vehicles therefore requires a lot of thought - in at the beginning of any planning for the hit you may even decide to exclude cars and vans.

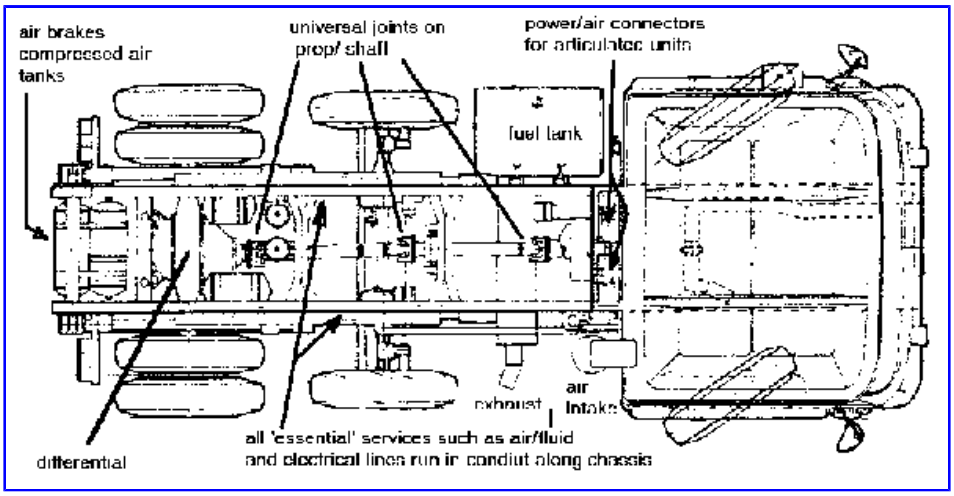
Simplified car construction (figure 0)



Heavy goods vehicles (HGVs) are a different matter. In many cases although the cab itself may be alarmed, the way the vehicle is built makes vulnerable parts easier to get hold of. In particular the fuel and electrical systems, and the engine/power train, can be easily reached by clambering underneath. Unlike cars, where cutting the brakes means the car can't stop, with many HGV the airbrake systems means that if the air isn't there you can get the brakes off - this makes them an obvious target.

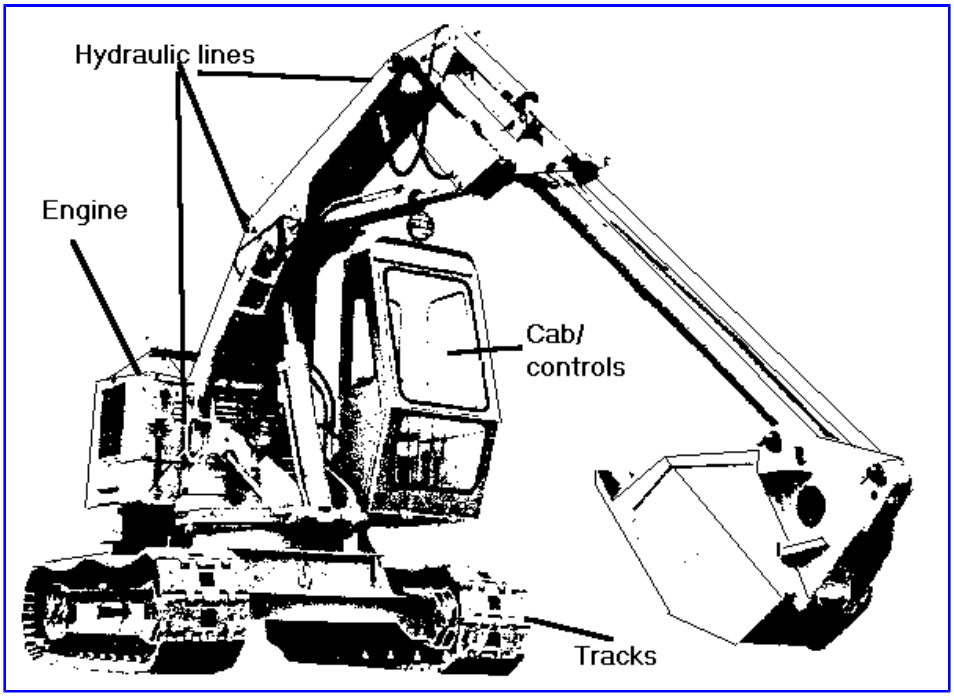
Basic layout of heavy goods vehicles (figures 23/24)

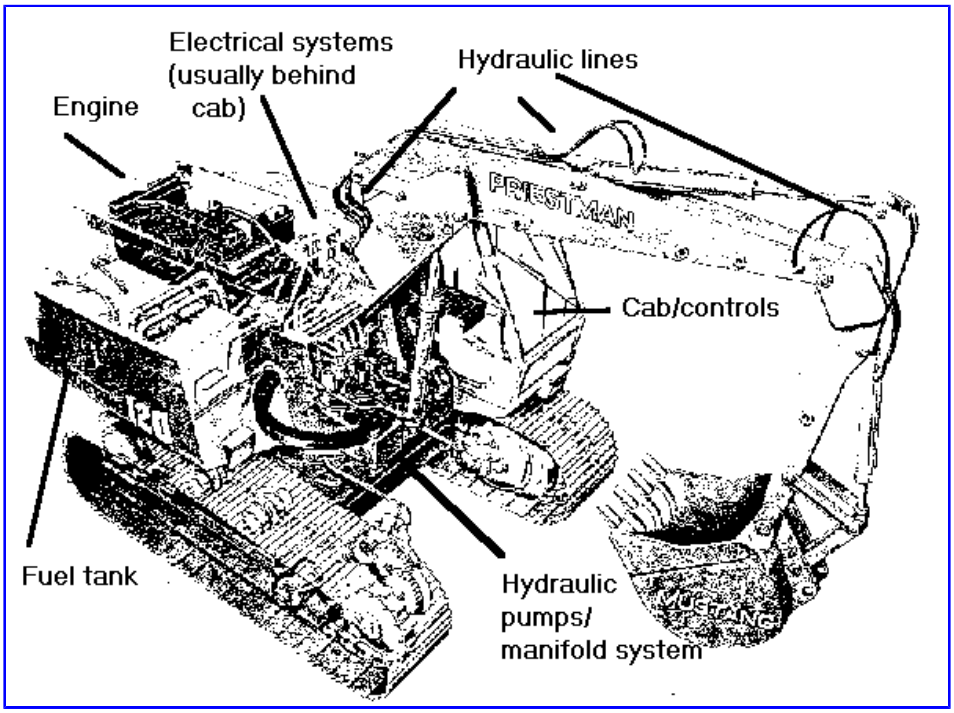




Earth movers, JCBs and dumpers are more difficult. This is not only because they are more enclosed than HGVs, but the components are generally made to withstand greater damage. Unless you can get the body panels off you only options are to go for the accessible parts of the hydraulic system, the fuel tank filler pipe, the cab (if it is not alarmed) and the tyres/tracks.

Example of typical earth mover (figures 25/26)





8.2 General sabotage options

When first approaching a vehicle you need to consider three things...

- Is it likely to be alarmed?;
- Are there enough accessible parts to effectively achieve the objective of the hit?;
- Would my time be better spent on something nearby?.

In general you should assume that any locked vehicle is alarmed - but if you have planned the hit to allow for activating the alarm without attracting attention then that's OK. HGVs present the most fruitful target when alarmed, but cars do not because the vibration sensors will detect and sharp banging. The simplest option with cars is to drill the tyres - this makes very little vibration, and they go down fairly slowly so that the rim of the wheel doesn't land with a jolt.

The issue of accessible parts is also important. If you are able to sugar the fuel, irrespective of anything else, you can

consider the job done. But to be sure you really need to do some work on other parts of the vehicle. The hydraulics is the obvious choice on earth movers, and the electrical/air systems are the obvious choice on HGVs. With cars, if you are very gentle, you may be able to get underneath and crush the fuel line closed, or reach up from underneath into the engine cavity and cut some wires.

Finally, if you have a choice between a car, and an HGV next to it, it is obvious which you do first - the HGV has more accessible parts. Likewise if you had a pound full of cars which were covered in alarms, but the security gate had an number of strong locks on it, you would glue up the locks on the security gate.

Whatever tactic you apply, you should still use the energy flow analysis of the system to target the parts of the vehicle it would be most effective to sabotage.

8.3 Engine and fuel systems

The fuel tank on most cars is located at the rear, underneath the boot. A metal pipe then runs from the tank, underneath the chassis to the fuel pump mounted on the engine block. Draining or cutting this system will deprive the engine of fuel. If you wished to take the drastic action of setting fire to the car, you could also cut/drill this system to provide the fuel to start the fire. If you ever need to syphon fuel from a vehicle, cutting the fuel pipe or making a hole in the tank is also quicker and safer than trying to chisel off a locked petrol cap. But beware - draining fuel tanks can cause a lot of pollution, unless you catch the fuel in a can or tray.

These same rules apply to HGVs - the only thing is that diesel is less volatile, and consequently harder to set fire to. The easiest way is to pile some paper and wood in a heap, put diesel on the paper, and then set fire to the 'dry' pieces of paper.

Engines are difficult to get at because they are locked under bonnets, or in the case of the HGV, you often have to hinge open the whole cab. The options are therefore limited. You could drain the oil by taking out the sump plug, but this will show up when the engine is started, and draining the oil, especially from HGVs, can cause a lot of pollution.

If you can get the bonnet open, you should first go for the spark plugs, or on diesel engines, the injectors (see diagrams earlier). If you want to make a really good job, find the oil filler cap, or the dip stick hole, and try getting some abrasive material into the engine (see the 'abrasives' section of volume I). Grinding/polishing powder is best (because its hard) but sand will do as a substitute.

8.4 Brakes and hydraulic systems

You should never cut fluid brake systems on cars or vans. This is because all power to the brakes will be lost. Air brake systems on HGVs can be cut - but carefully so that you don't injure yourself - because the brakes are held off by air pressure, and cutting the pipes means the brakes won't come off.

Hydraulic systems are a problem, partly because of the dangers of the equipment moving/collapsing. There is also the matter of pollution arising from the leaking hydraulic fluid.

Choosing which pipes to cut is a matter of what you tooling capability is. If you have good bolt cutters then hoses up to 1" diameter, and pipes up to 0.5" should present little problem. Where bigger pipes are involved, you should consider drilling them with a small (2mm) drill bit. If the parts are accessible, it is more effective to go for the manifolds and valves - they are more expensive and take longer to replace. To rally damage the hydraulic rams you need a power drill and a specially hardened drill bit suitable for cutting hardened steel.

8.5 Electrical systems

If the vehicle is switched off, then apart from the leads coming from the battery to the solenoid, and the lighting system, the wires should have no power running through them. Even so, apart from the battery leads, cutting other cables will have little effect because any short circuit will involve low voltages, and the fuses should blow.

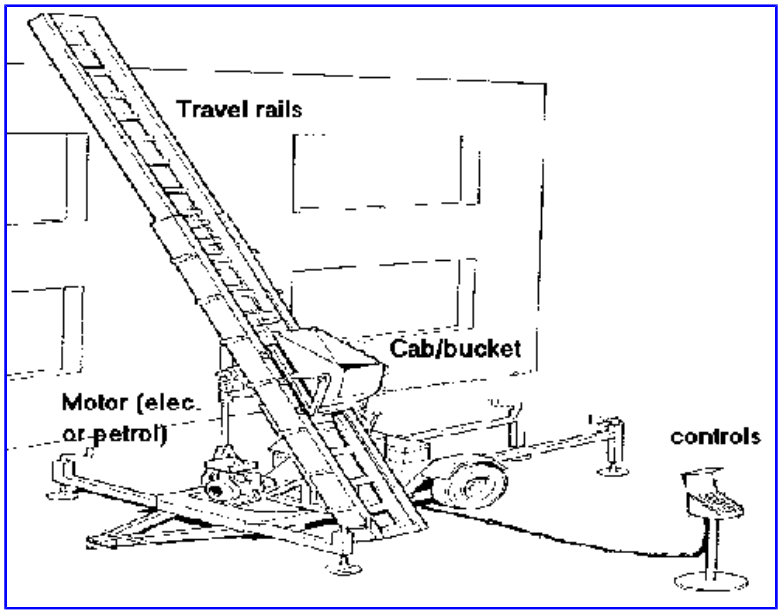
It can be difficult to identify specific parts of the electrical system, except for the simple things like the distributor cap/plug leads, and battery leads. In general it is often easier to just cut everything quickly. Also, rather then cutting a cable once, try to cut one or two inch sections from the cable - this means they have to be replaced rather then just joined back together.

9. SPECIALIST HITS

How to describe the sabotage of other 'non-standard' systems is more difficult. You should be able to figure out what to do by using the energy flow analysis of the system, and copying some of the ideas applied to the standard systems described in the sections above.

In practice you may end up treating a complex machine - for example a roadstone coating plant, as a collection of discrete systems rather then as one entity.

Construction hoists (figure 27)

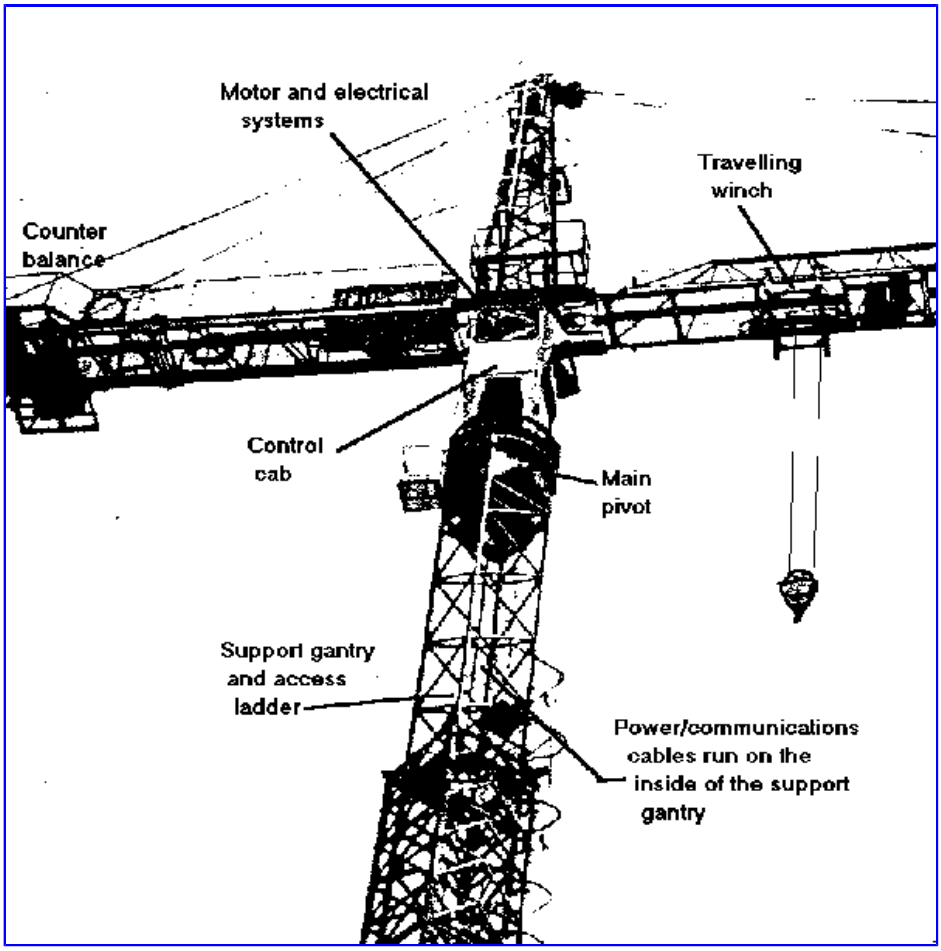


9.1 Construction equipment

Most construction equipment can be tackled with the information already given in this Volume, and Volume I. But on construction sites you often find hybrid machines - for example the hoist illustrated on the following page.

A key consideration of hitting something like a construction site is not only to consider the machines as systems - with energy and material flows - but also you should look at the whole site as a functioning entity. Material stockpiles are needed to make the whole thing function. Likewise, machines such as cement mixers can be as important as earth movers.

Tower cranes (figure 28)



There are a number of things you can do on construction sites...

- In the initial stages, you should consider moving the survey stakes. Only move them a foot or so, and try to make the new 'positions' look convincingly real. That way, if construction goes ahead to you new 'plan', prefabricated elements of the development won't fit. If there is not a lot of time just rip up all the survey marks.
- Sand stockpiles are a good target. You could dig sugar or salt (salt is better) into the sand. This will make the cement/concrete weak. But for safety's sake, you should let the site operator know this after they have used the material. In any case, you might like to tell them even if you didn't do it.
- On many sites, pumps often operate around the clock to keep deep excavations dry. You could sabotage the pumps. But there is a more effective option where there is a large body of water nearby - either a watercourse or a settling pond. Take the outlet pipe from the pump and stick it in the hole, and the inlet from the hole and stick it in the water. It can be sometimes quicker and easier to just swap the pipes around on the pump. Either way you pump the hole full of water.
- Scaffolding is a good target. Use a rope winch or block and tackle (see Volume I) to pull it over - it you are lucky you might take some of the work with you.
- A good target is the site office. You can either glue up the locks, go inside and improve the decor, or try to demolish/turn the office block over.
- Never forget of course the wide range of machinery available to work on. This may be kept in a secure compound, and if so, you should beware of alarm/security systems.
- Tower crane are a risky target - if you're discovered there's nowhere to run. If something goes wrong then you are either stuck, dead, or badly injured. Although you could disable the controls in the cab, or try and cut the power lines, you should never attempt to topple the crane unless you are absolutely sure you can do it, and it will land where it will not cause harm to anyone.
- Whatever you do, do not leave things in a state where they will be a danger to the workers on the site, or to the occupants of the building when/if it is completed.

9.2 Quarry equipment

Quarrying is probably one of the most damaging landuses in lowland meadows, and in hilly/mountainous areas. It is not only because of the effect of quarrying on habitats, but also the effect on water tables, and the land uses that follow such as waste

disposal or watersports.

There are four key targets in the quarry works...

- The earth moving/excavation equipment.
- The pumps that keep the quarry dry - if you are certain they the site will fill with water quickly, or you can swap the pipes on the pumps, then you can drown all the equipment in one go.
- The sorting/grading and crushing equipment - essential for the processing of stone, and potentially easily damaged.
- The site office and weighbridge. Doing the site office causes annoyance. If you can damage the controls for the weighbridge then you really make operating difficult.

The only thing to beware of with quarries is making sure that you don't get trapped. Especially in deep quarries, if your exit is blocked, or if you fall into a pit with no escape, you only option is to wait for the owners to find you.

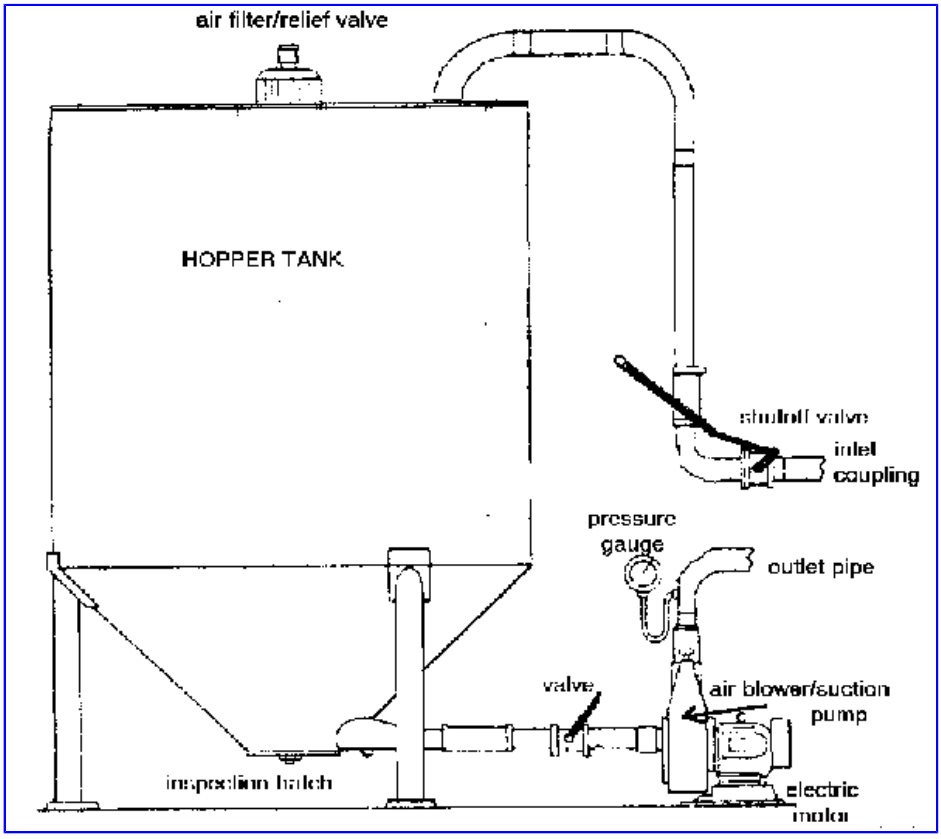
9.3 Farm machinery

There are a wide variety of farms. Some have only arable planting/harvesting equipment. Some concentrate on dairy products. Some intensively farm just one type of animal.

In general, it is the intensive farms which present the greatest offence to the environment. Not only is there the issue of animal welfare, but intensive farms can also present a serious pollution hazard to the soil, to nearby watercourses, and often create local noise and smell nuisances.

When you take action against a farm, you must consider, first and foremost, what you attitude to the animals is. You actions may have implications for the welfare of animals - it may even cause their deaths. You must decide if you wish to uphold their right to life, or whether you believe that a short period of discomfort will effectively 'end' their misery.

Hoppers and materials storage (figure 29)



There are a number of targets which you should consider sabotaging...

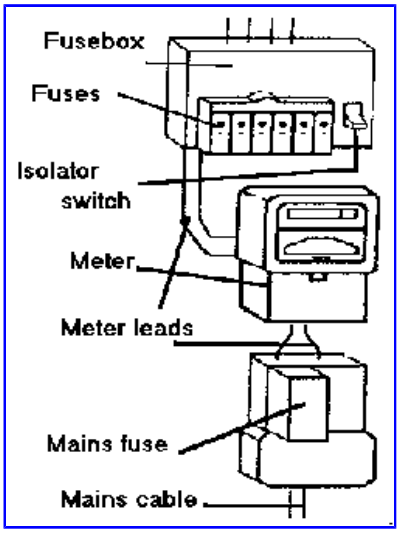
- Farm machinery is often easy to sabotage because it is less enclosed.
- With things like livestock transport wagons, you have to decide whether you want to destroy or disable them - disabling

is easy. Causing fires on farms is a bad idea because of the presence of large quantities of flammable materials such as straw, fuel or wooden buildings.

- Materials hoppers are a good target (see illustration on the previous page) - these are often essential for the storage of grain, or of food for intensive animal units. Puncturing the tubes coming from the hopper leaks pressure from the system and prevents material flow. Likewise, jamming/gluing access covers and valves prevents their use.
- On many farms and barns the electrical systems are easily sabotaged. In many cases the electrical controls resemble those in your own home (see illustration on following page). Cutting the 'meter leads' can be dangerous. You should attempt to remove the mains fuse, or isolate the fusebox, and then clip all the leads leading out of the fusebox. If you wear rubber gloves, you could also take a sledgehammer to the fuse box and meter.
- Many farms have pesticide/chemical stores - these can be glued up. Beware of any fertiliser bag that has a yellow diamond or the words 'oxidising agent' on it. If you set fire to this stuff it is difficult to stop, it burn intensely hot, and will create a serious pollution incident if any substantial quantity catches fire.

A word of caution though. Many farms have 'live-in' staff, and so security can be a problem. Another recent innovation are 'trip wires' and 'pressure pads' - these are linked to flares or squibs and are meant to announce the presence of intruders. Although not all farms have them, they are becoming increasingly popular to prevent uninvited guests, thieves, or animal rights protesters. They are very difficult to spot in the dark, and if you have just spent twenty minutes quietly stalking up to a barn and you set a thunderflash off it can scare the hit out of you.

Mains electrical systems (figure 30)



9.4 Pipelines and transmission lines

Pipelines and electricity transmission lines are extremely easy targets to take on, but can be immensely dangerous. If you are considering such things as high-pressure gas pipelines, or any electric cable carrying more than 415 volts, my tip to you is to forget it!! There are easier ways to die. But there are some targets you can consider...

Mains voltage power lines (that is, less than 500 volts) are difficult to cut - even with the standard household 240 volts you could conceivable kill yourself. In these situations you should consider 'burning' through the cable - the simplest way to do this is to place a blow lamp on the cable or pipe, and then retire to a safe distance very quickly. You might risk 'chopping' them with an axe, but if you cause a serious short the spatter of molten metal could cause burns.

Low voltage power lines (less than 50 volts) can be easily cut with cutters, provided that they have insulated handles, or you wear thick rubber gloves. Again, beware things like high current induction motors or welding equipment - these carry large amounts of current which could arc and burn you.

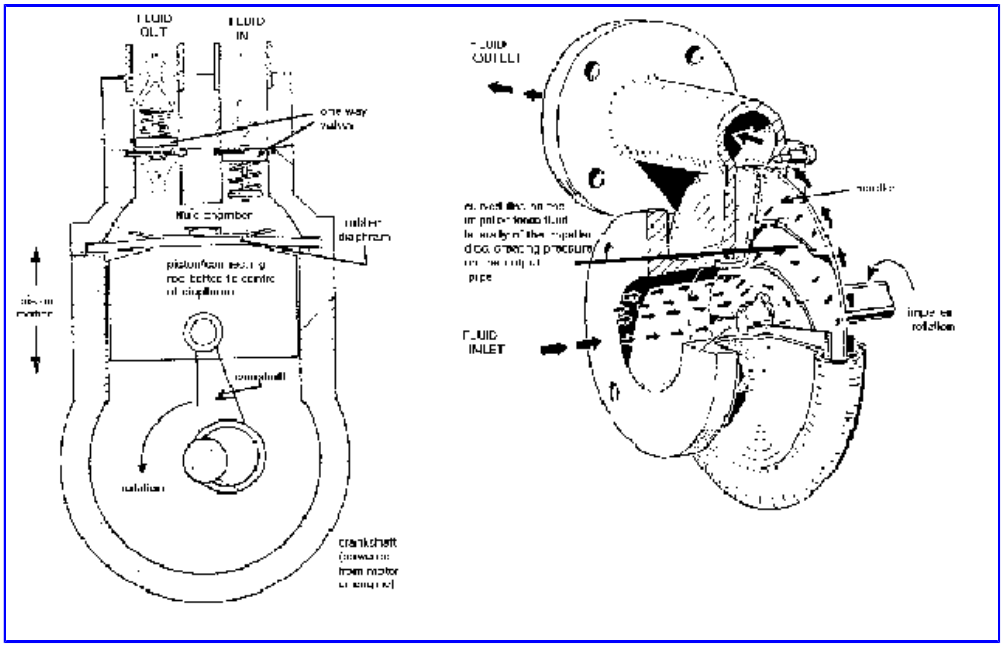
Pumps are an easy target. You can either go for the motor driving the pump, or you can go for the pipeline. There are two types of pump...

· Diaphragm pumps operate using an oscillating membrane and two one-way valves. They can often be identified by the regular pulsing and gushing of water along the pipes. If you can introduce some long hard objects, such as pieces of stick or wood, these can block the valves of the pump. Otherwise you should go for the engine/motor driving the pump.

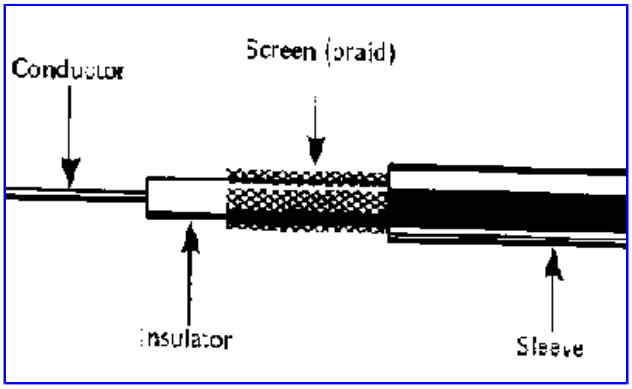
· Rotary pumps have a disk rotating at high speeds (the 'impeller') which continuously sucks/pushes water - so you don't get the same pulsing. The lack of vales makes them difficult to sabotage, so you should go for the engine/motor driving the pump.

With both types of pump, they operate by generating a 'low' pressure on the sucking side, and creating a 'high' pressure on the blowing site. If you puncture the pipes on the low pressure side you let air in and the pipeline loses suction. Likewise if you puncture the high pressure side the pipeline leaks.

Diaphragm and rotary pumps (figures 31/32)



Coaxial cables (figure 33)



Coaxial cables carry radio waves, and are used on transmitter masts, computer networks, and some radio intercom systems. They can be easily cut with side cutters, or better still stapled with a staple gun (this shorts the cable and potentially could wreck the transmitter). Beware microwave transmitters - sometime these use (waveguides) just behind the dish which can be dangerous to your health if cut.

It is possible to cut high pressure pipes or high voltage cables using some sort of chemical incendiary mixture, but this is still very risky. You also have the problem that the chemical incendiaries could burn away without breaking the pipe/cable, but causing serious damage which may endanger someone. Also the chemical incendiary could start a fire in the area, ignite the contents of the pipeline, or if the pipeline holds high pressure the explosive breach could throw burning incendiary incendiary over a large area and start fires.

9.5 Commercial premises

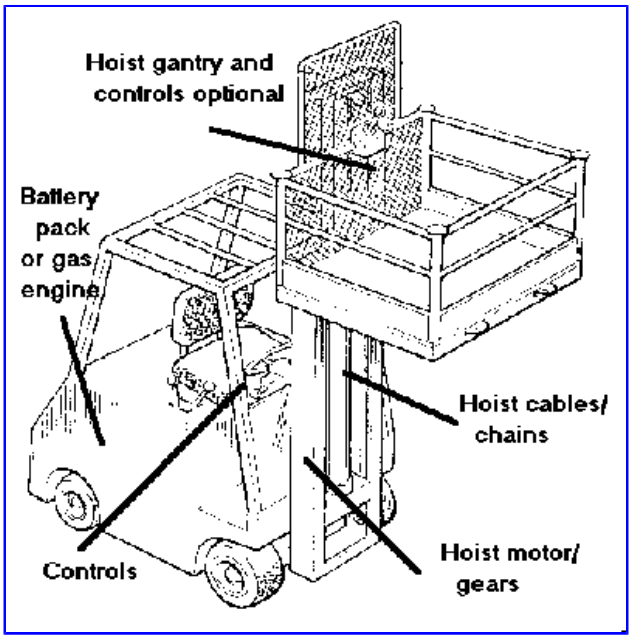
Commercial premises present a challenge to the saboteur - but many rewards. As security technology increase, even the most

innocent site office can have as much anti-intruder protection as you local bank. This is because what is inside offices - computers, fax machines, and increasingly data - is becoming more valuable and needs protecting.

Getting past security systems cannot be taught here - there is not enough room, and you must learn some highly technical electronic and computer skills. Sometimes it may be worth organising your hit to take place within 30 seconds to one minute, and then just smashing your way in triggering every security device on the premises. If you can guarantee that security personnel will not arrive for five or six minutes, then you can make a getaway.

There are also a number of targets you must consider. As noted at the beginning of this section, you can treat something 'new' as a set of systems, using the analysis described earlier in this volume. But commercial premises present some very specific pieces of equipment which you might like to know more about.

Forklifts (figure 34)

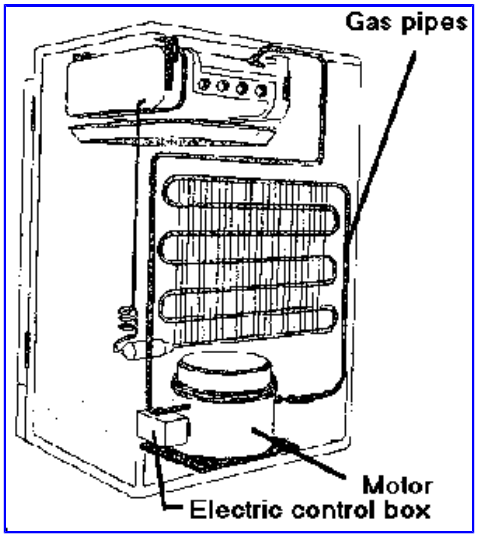


In many commercial/industrial premises, you will find some sort of forklift truck for loading/unloading vehicles, or working within stores/high bay warehouses. Forklifts are either electrically powered using a battery pack, or they run on a gas engine, powered by a bottle of compressed gas mounted on the back of the machine.

The illustration on the following page shows a typical forklift. The control panel is simple, and easily accessible. But getting at the electric motors and gearing mechanisms can be difficult. Although many forklifts use cable or chains for lifting, some use hydraulic system - in these cases the usual 'hydraulic' systems rules apply.

Beware electric fork lifts - if you short the battery pack you might have a small explosion because of the power the pack can generate. On most battery fork lifts the pack has a connector which pulls out of a socket and plugs into a battery charger. You have the choice of either turning the charger off, disconnecting the battery and sabbing the charger box, or disconnecting the pack from the socket it plugs into on the truck, and smashing this socket. Do not smash the plug connected to the battery pack because this could cause a short.

Refrigeration systems (figure 35)



Another common thing to find in commercial premises is refrigeration systems - used as either actual cold stores/fridges, or used as cooling systems/air conditioning units. If you damage the refrigeration system it can be a very expensive job not only replacing the system, but also the goods which may go off when they warm up.

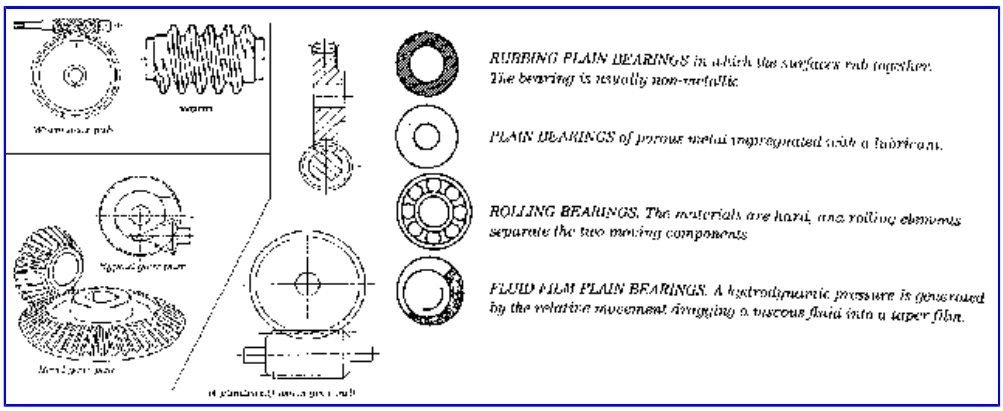
The illustration on the previous page shows a traditional 'domestic' style fridge, but commercial units operate in roughly the same way - they just have the parts arranged differently.

You must take care when taking on these systems because they contain flammable gases such as butane, highly irritating gases such as ammonia, or asphyxiating gases such as halon (CFCs). If you cut the pipes and release these gases, you will have to evacuate immediately. In practice it is safer to take on the electrical control systems and put them permanently out of action.

Modern refrigeration systems use electric motors which drive specially designed pump or screw compressors. By disabling the motor, or is power source, you disable the cooling system. The problem comes where the motor and pump form one sealed unit - in these instances you can only disable the power source.

Another thing to consider, especially where machinery is involved, is the effect that damaging the gearing and bearing systems will have. The illustrations on the following pages show different types of gear and bearing that you may see on industrial machinery.

Gearing and bearing systems (figures 36/37)



Gears are most easily damaged by breaking or denting the 'teeth' on the cogs that make up the gear. Cast gears can be broken with a lump hammer. Prising open smaller gear sets with a crowbar will have an equally deleterious effect. Some gear systems are oil lubricated, or contained within some sort of sump - in these cases just put sand in the sump to act as an abrasive. 'Worm' gears are particularly susceptible to having things jammed in them - if you use some mild steel roads (for example short nails) these work their way into the gears causing a jam.

Bearings are harder to damage, mainly because they are encased inside the machine. But there they are visible you can damage them using a hammer and cold chisel/centre punch, or by jamming steel nails into the bearing. If a bearing is lubricated with

grease, try mixing 2 parts (by volume) of grinding/polishing powder to 3 parts lubricating grease, and then apply this to the bearing. If this goes unnoticed the bearings will slowly wear and begin to rattle in their races.

9.6 High security compounds

Entering high security compounds - such as those surrounding military bases, nuclear establishments or sensitive commercial premises - is a bit like putting you head in a lions mouth. You have to hope that is doesn't bite.

As noted with commercial premises, you could just rush the place head on, do your work within a minute, and then get away quickly. Sometimes that may be your only option, but there are alternatives.

A tactic within the anti-nuclear movement was to treat the high security compound itself as the target. Thus you regularly set alarms off, cut holes in fences, or throw stones at security cameras. If this gets a regular occurrence, to the point where the staff don't immediately react, this may provide a 'time window' where you can actually get in and do some real work.

9.7 Marine targets

Marine target fall into roughly two types - things that float, and things that are fixed to the ground but have water around them. Floating things can be sunk - but this presents risks of pollution and danger to people on the floating object. Things that are fixed to the bottom are generally on interest because of what is on them.

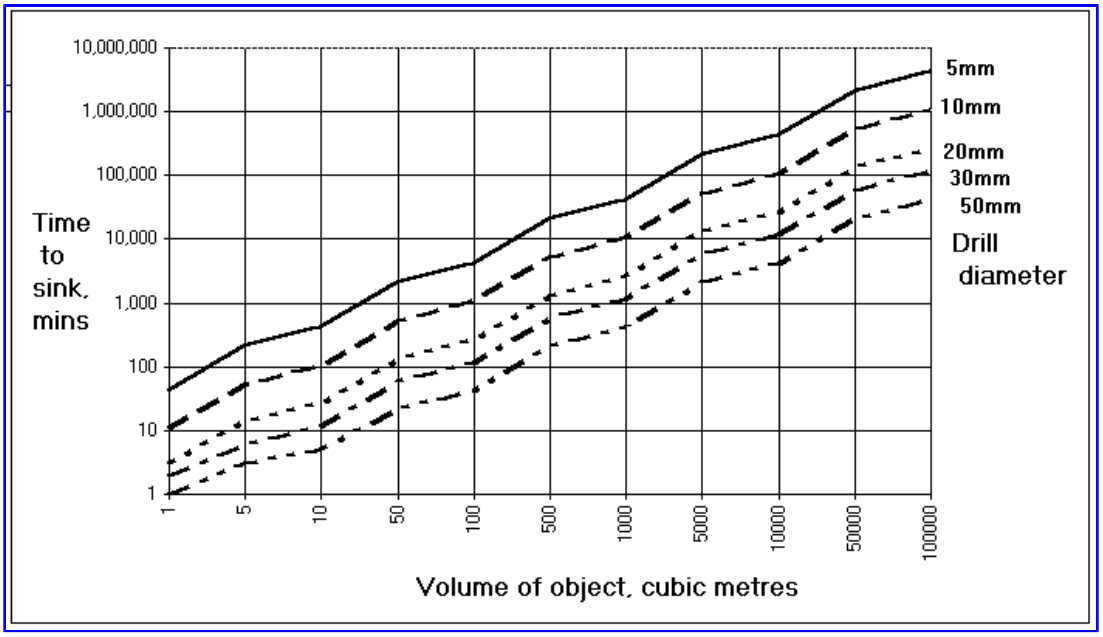
Never sink anything while people are aboard it. If you want to sink something what you have to consider is how long the thing will take to sink - this is important as it means that you can guarantee that the object will sink within a certain amount of time. First you estimate the internal volume the object - call this V, and measure it in cubic metres. If we assume that you are going to drill the hull of the object, then find the diameter of you drill bit - call this D and measure it in millimetres. Finally, work out how far below the waterline you are going to drill the hole(s) - call this H and measure it in metres. Finally, decide how many minutes you want the object to sink in, and call this M. The number of hole you will have to drill to sink the object in the required time is then calculated using the formula...

T = V / (0.009426 * D2 * H * M)

To simplify matters, the table on the following page gives the time for an object to sink (right axis, in minutes) for a given volume (bottom axis) and a drill size (top line is 5mm, next 10mm, 20mm, 30mm, bottom line 50mm). These calculations assume that 10 holes are drilled. For every extra 10 holes drilled, halve the time.

Taking on fixed targets depends a lot on their nature. Docks and quays present the obvious advantage that things can be easily disposed of - into the water. Also, where you have a secure compound, access from the water can get around many problems such as fences and guard. But beware - some sites, such as military installations, have nets and alarms to stop swimmers/divers, and on occasions the security troops have used special stun grenades to disable swimmers attempting to access protected docksides.

Sink times (table 0)



In terms of everyday hits, waterborne access can add a new dimension to the planning of hits. For example, if you ever get cornered and there is a river next to the site, you can jump in, drop you tools to the bottom, and then float away downstream. Likewise there are many sites - for example chemicals installations, that are built on waterways, and have minimal security along their water side because the water is assumed to be a barrier in itself.

One obvious safety point in relation to waterborne hits - it does help if you can swim. Likewise, if you are taking a boat out on the open water, make sure that you are skilled to handle it.

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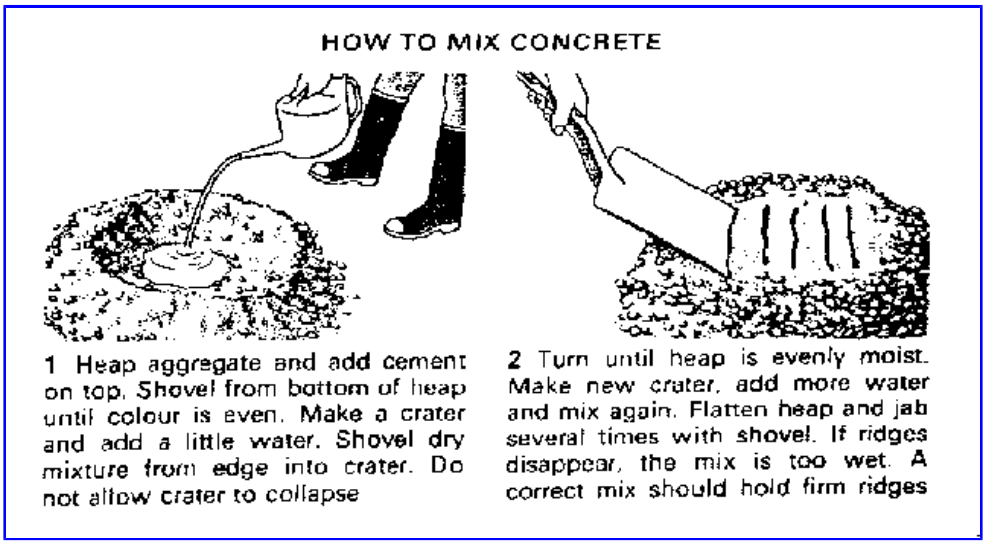
10. ADVANCED TECHNIQUES

10.1 Introduction

Depending upon the character of the target, it is a fairly straightforward matter to plan a schedule of work to effectively disable a site or facility. So far much of the detail in volumes I and II has considered using tools to disable or dismantle equipment. The use of other more extreme, complex or time consuming tactics has not been considered.

10.2 Concrete

(figure 38)



Concrete can be put to very effective use. The only problem is that it is difficult to transport, is a mess to mix and apply, and it takes time to dry.

The cement used for brick laying is a mixture of sand and cement powder. Concrete has small pebbles (gravel or 'aggregate') added to increase its strength. The strength of the mixture depends upon the amount of cement powder mixed into the sand or sand/gravel mix...

- For general cement mix 4 parts sand to 1 part cement;
- For concrete mix 2 parts sand, to 1 part gravel, to 1 part cement.

These gives you a very basic mixture. You could increase the amount of cement powder to increase the strength, but this will progressively 'harden' the mixture so making it more brittle.

You can also buy special additives for cement which will increase the speed at which it sets - these are usually based around PVA and other similar adhesives. You could mix in a small pack of wallpaper paste to get a similar effect.

With both concrete and cement, if you want to stop it being split apart, you need to add some sort of reinforcement. Where space is limited, you could try using wire mesh, or just random coils of thick wire. If you are filling a space which you are sure there is only one way it could be split with a chisel or drill, you can bury steel plates or sections of angle iron in the cement/concrete.

You can also inject cement mix into things. If you want to do this it is better to mix 1 part cement powder with 1 parts 'soft' sand, and add a small amount of wallpaper paste/PVA. You then need to use something like an icing piper to inject the mixture into the space. Although you can carry this mixture mixed dry, after adding water and mixing you will have to work fast as it begins to set quickly.

Examples of where you can use concrete are...

- You can block up pipes using bungs (see Volume I) and then fill the access hole with cement to prevent them being removed.
- You can create bollards or other obstructions by filling a large steel drum with concrete. This tactic is even more effective if you dig a hole, concrete a thick iron bar into the ground, and thread the drum over the bar before filling it with concrete - this makes it more difficult to push out the way.
- You can 'prefabricate' blocks or slabs of concrete to precisely fit into holes or pipes using wooden or metal moulds.
- Pouring wet concrete into air intakes, exhausts, large electric motors, gearboxes or any other mechanical systems which are enclosed, assuming that there is the time for the concrete to dry, will effectively block up the system, and it is cheaper than using epoxy adhesives or potting compound.

The main thing to remember is that concrete is only effective where it can dry properly. If there is no source of heat to drive off the water, it will set very slowly. The speed at which the concrete sets is proportional to the thickness of the concrete. Concrete will form a hard skin within two or three hours of being laid, but to properly set it takes much longer. Assume that, on an average day, for each inch thickness of the concrete, it will take four hours to dry. Adding PVA and other such compounds helps the hardening process, but if you expect the concrete to take a battering when it is discovered you will need to allow the full four hours/inch thickness for it to dry.

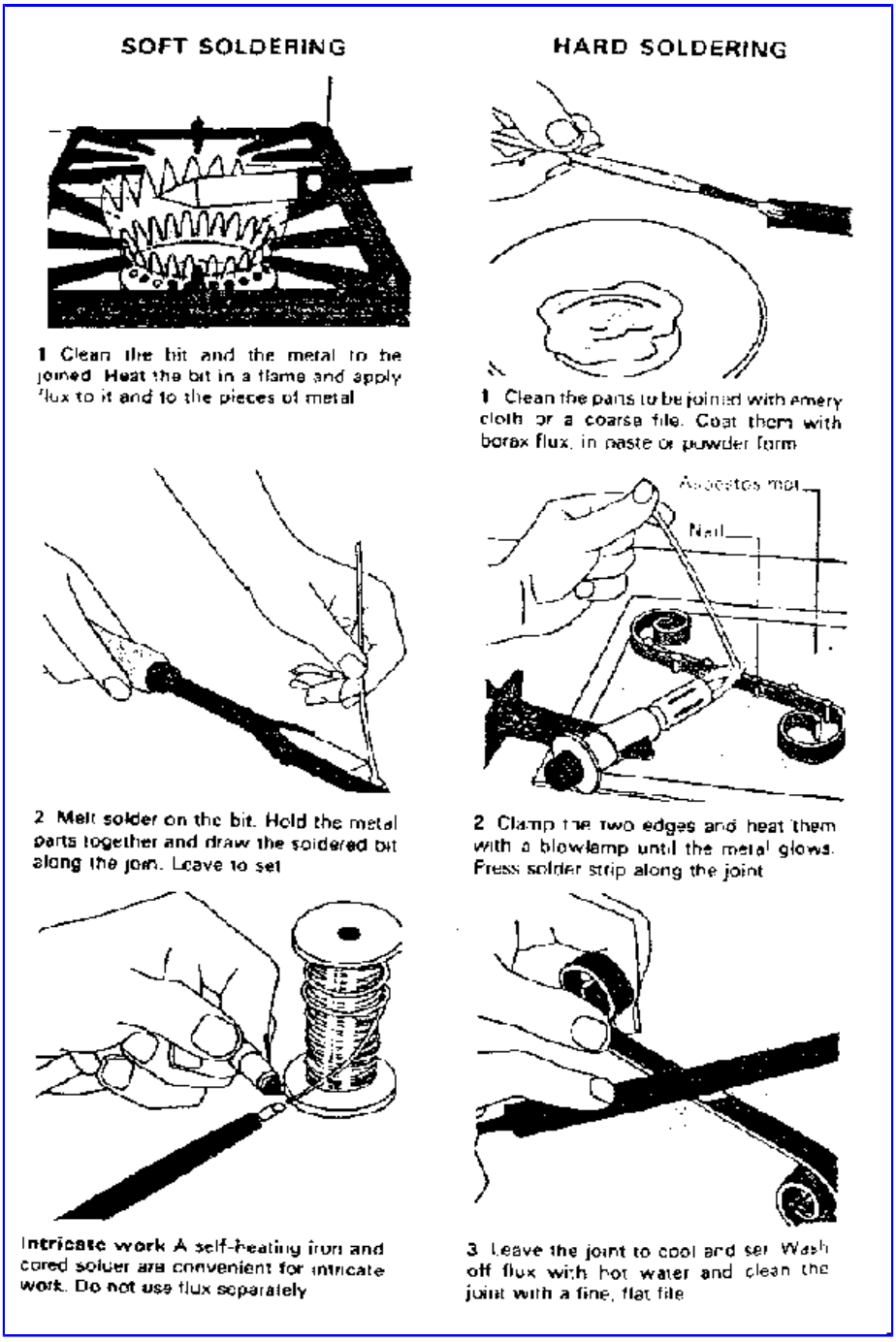
An alternative to using a cement based concrete is to buy some 'bonding' or 'undercoat' plaster. Unlike cement, this has a much more powerful crystallisation reaction so that it sets faster. The main advantage of plaster is where you are filling watertight enclosed spaces, as the crystallisation reaction will still take place, and the heat produced by this reaction will help drive off the water. The only problem is that plaster is very soft, and so can be easily removed. This can be partly solved by using reinforcing wire and metal plates.

10.3 Soldering/braising and welding

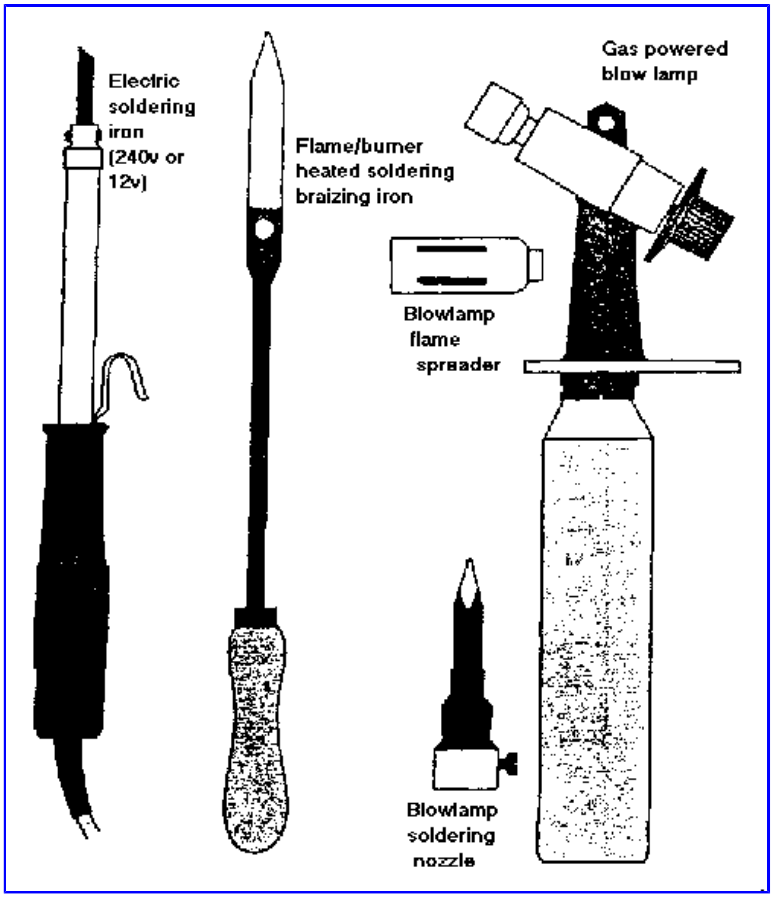
Often with metal objects it can be useful to have a more effective method of gumming things up than superglue.

If you have two pieces of metal sheet, these can be firmly fixed together using rivets. You drill a hole, insert the rivet and then use a rivet crimp to seal it up. The problem with rivets is that they are easily drilled out again - and you can only use then on thin metal sheets.

Soldering methods (figure 39)



Soldering tools (figure 40)



With sold metal objects things get a little more difficult. If the objects are small, or they are thin, then soldering or braising is possible. First you clean the surfaces until they are shiny and free from grease. Then you bring the surfaces together and fuse them by melting a metal over them. 'Soft' soldering is used for small objects, and basically involves using a soldering iron to heat the parts, and then applying solder.

Where the metal parts are more substantial you may have to use 'hard solder'. You apply the flux to the parts. Then heat using a large iron or blow torch. When the parts are hot and the flux molten you apply the solder.

Soldering can be used to fuse metal parts up to 1cm thick, but beyond this it is extremely difficult to get the metal hot enough to take the solder. Also, solder joints are not incredibly strong as the solder does not have the same strength at the metal. The alternative is to use a gas or electric arc welder. This uses very high temperatures to melt and fuse the iron/steel. This joint, if properly made, has a strength near to that of the metal itself.

Arc welding equipment is difficult to use for sabotage work. It is very heavy, because of the heavy copper coils inside, and there is the problem of providing a power supply. If these problems can be overcome, arc welders are fairly simple to use after a little practice. Gas welding equipment is easier to carry, and does not require a power supply, but it takes a little more skill and practice to use. Oxygen-propane systems are relatively simple to use to fuse metal. Oxygen-acetylene systems operate at higher temperatures making work quicker, and the higher temperature also enable you to cut metal more simply. Many local technical colleges run evening classes on welding and metal work. I would suggest that you attend one of these, or get a friend who knows to teach you welding, before you attempt to use welding equipment.

The other option for welding/cutting metal is to use some sort of 'thermite' compound, but this is difficult to obtain, and risky to use. There are 'home-brew' alternatives using mixtures of solid fuel and oxidising agents (see the following section).

11. HEALTH AND SAFETY

The health and safety section of Volume I concentrated mainly on tool-related safety. With this volume the risks are more complex, and the variety of systems described makes it difficult to pinpoint particular risks. In general...

- Beware of all electrical systems. Before cutting a wire be sure you know what you are cutting. For safety's sake always wear plastic or rubber gloves and use insulated cutters.
- Do not cut fuel pipes unless absolutely necessary.
- With pneumatic systems, beware incase there is still pressure in the system. If in doubt use a bradawl or small drill to make a hole and release any pressurise before cutting.
- Beware when cutting hydraulic systems that the pipe is not under pressure - as noted above drill first if in doubt. Also, beware that the cutting of a pipe does not release the pressure that is holding the machine - the machine could move or jibs could drip on you.
- Do not wear baggy clothes or allow you hair to wave about - they may get caught in machinery and cause you injury, or trap you.
- Do not cut any 'safety' systems such as brakes, fire alarms, etc.
- Never climb any structure or equipment where you may fall, or become trapped.
- **IF IN DOUBT ABOUT THE EFFECT OF ANY ACTION - DON'T DO IT!!**

In relation to the previous section on combustion, there are very specific safety rules...

- Do not initiate any fire where you cannot be sure of limiting the effects to a small, specific area.
- Do not start a fire where large quantities of fuel or chemicals are present.
- When cutting/grinding match heads, cut the coating from the wood with a sharp knife. To grind use the back of a wooden spoon, on a wooden surface, to press down. Move the spoon slowly - do not bang it down. Always make sure that you never grind more than one or two heaped teaspoons of heads at a time in case they catch fire. Never store more than a cup full of ground heads in the same place. Always wear gloves.
- If you need to grind ammonium fertiliser, use the same precautions as for match heads. Always wear gloves when handling the material.
- When mixing ammonium nitrate, charcoal and sugar, never mix more than a kilo at a time. Carefully stir the contents together inside a metal saucepan using a wooden spoon. When stirred, transfer directly to a plastic bag and seal it. Never store the powder in close proximity to match heads until you set up the device, and never put either match heads or powder in a bag where they will clanks and bang together with your tools. Preferably put them in a box which is impact resistant.
- Never keep petrol or solvents in a plastic bottle.
- Never connect the battery to an electrically fused system unless you have first checked that the switches are not active.

The other main precaution must be to ensure that your activities do not in themselves cause environmental pollution. Opening the pipes on a large fuel storage tank could cause massive pollution. Likewise setting fire to a farmer's barn full of pesticides could create a major catastrophe.

As well as the common sense things like not releasing fuel, always remember that you actions could cause problems later. If you cut power cables, and short the wires because your cutters were not sharp, when the systems is turned on you could cause a short that might start a fire. For safety's sake, it is a good idea to develop some sort of calling card to tell people you were there, or at least use a marker pen to leave a warning to the owners/operators.

As noted previously, the most important thing to take with you is your common sense

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12. CONCLUSION

The more reactionary elements of the anti-environmental movement will, I am sure, immediately seize on section 10.4 on 'combustion'. We believe that the introduction to that section must be re-emphasised. Such extreme measure are only for use when the seriousness of the environmental destruction warrants the use of such practices, and all other options have been considered.

The rest of the Volume is fairly straightforward. We hope that the concept of analysing a target in terms of the energy flows within a 'system' will enable you to objectively study your target, and then carry out the most appropriate sabotage to produce the desired result.

In comparison to Volume I, this volume has been a little more technical. I must apologise in advance that Volume III (currently in preparation) will be even more technical. But we hope that you will eventually be able to progress to a point where all the Volumes in this series will be of some assistance to you.
