HOW TO BE A RADIO PIRATE?

This section tells you exactly how to go ahead setting up your own pirate radio with all the tips learned from bitter experience. First of all here's a list of main things you'll need. So you want to be a radio pirate? Read on...

What you'll need

A. A group of committed people who get on with each other and have plenty of time and energy.
B. A programme, presuming you have something worth saying or playing. You don't even need a studio to start off with. Just borrow someone's stereo and a microphone and start making practice recordings onto good quality cassette tapes.
C. A Transmitter. Ideally over 10 watt power, but 5 watt is fine for local broadcasts, or when using an aerial with 'gain' . You can't buy one over the counter in Britain, but here are some alternatives:

I) Buy one from another pirate (beware of rip-offs).

II) Buy one over the counter abroad. In Italy for instance you can get a high quality 50 watt transmitter over the counter for £200. You can buy kits in Belgium, France, Netherlands, USA, etc. You then have to smuggle it home.

III) Build your own. A hobbyist can build a low power FM transmitter easily. Try to interest radio hams or dissident engineers. It's almost essential to have at least one person in your group with some technical know how.

IV) Get one built to your specification. There are a few electronics engineers about who will build them for a reasonable price.

D. Antenna. You can adapt a design yourself from an antenna handbook (e.g. The 2 Metre Antenna Book). Or use one of our ready made designs. Look out for aluminium tubing or struts which make good building material.
E. Odds and ends. You'll need basic tools (soldering iron, multimeter, SWR meter), a cheap cassette deck, probably one or two good car batteries, a roll of co-ax cable for the aerial, a radio to listen in on, etc. Also start reading Amateur Radio Handbooks and all relevant writings.

VHF: Pros and Cons

First lets deal with FM (Frequency Modulated) broadcasting, which is probably your choice. The advantages of FM are many. The transmitters are small and quite cheap. Reception tends to be either very clear or non-existent. Its excellent for music and for recording off and can quite easily be adapted to transmit stereo (impossible with AM). A major plus for the pirate is that its easy to hide and transport the gear, aerials are comparatively small and can be made collapsible. It's also possible to put in a vehicle, even an bicycle and go mobile, albeit with a smaller and changing reception area. The average 5 to 20 watt transmitter would be in a metal box no bigger than 12" by 6" by 3" in size, and weigh no more than 8 lbs with the rest of the gear (but not including the battery, if you're using one), The aerial is not only shorter but more efficient and of course more practical than the long and tricky procedure for MW aerials. Also low power FM transmitters ('rigs') can be tuned to slightly different frequencies, on MW you're stuck on one, unless you get a new crystal.
The disadvantage is that VHF-FM is essentially a 'line of sight' communication, which means your reception area depends crucially on the height of your aerial above large blocking objects. This is no problem if you can get up on a hill, or a tower block but it does restrict the choice of broadcasting sites, making you easier to find and trap. With local broadcasting you have more choice of sites. In very hilly area, unless you can get up on a mountain, you'd better choose MW, also if you want to broadcast scattered communities over a wide area. Distance covered with an FM rig depends as how much height as on power. A 40 watt rig on a 15 story tower block should cover a 15 miles radius if there are no blocking objects. A 4 watt rig should go 5 miles from the same height but if you build a directional aerial with 'gain' you can multiply that power many times. You don't really need a big expensive and hard to build transmitter. Also don't assume a 100 watt rig is ten times as powerful as a 10 watt one, it doesn't work like that.

To sum up, FM broadcasting is the ideal for the guerrilla or community pirate, cheap, mobile and adaptable. another advantage is that there's loads of room on the FM broadcasting band, it's literally half empty. On MW its pretty crowded, and at night you're likely to be blotted out by continental interference.

The Broadcasting Site (FM)

TOWER BLOCKS

In cities tower blocks have been an ideal answer for good coverage and wide reception and are especially favoured by commercial pirates (who often use a link transmitter from the studio to the tower block so as to go live). A further advantage is that there are usually electric sockets in the lift or heating rooms on the roof, so you can just plug in provided your gear is so adjusted, rather than lug car or lorry batteries about. This is 'Stealing Electricity', of course. If you're caught broadcasting the electricity company could bring this additional charge, though in practice we've never heard of it happening. The advantage to sticking in car batteries is that you can conceal your rig anywhere on the roof, rather than having it right by the plug socket, though in a surprise raid your aerial cable will lead them straight to it anyway.

To get onto the roof of a tower block you need a crowbar, or better, a key. The 'Fireman's keys' have to be standard for all blocks, so once you have one you can get onto most roofs easily. Try asking other pirates, or possibly a friendly caretaker or fireman. Or you can break the door, steal the mortise lock, get keys made up for it, then replace it, such keys may not fit all roofs.

When on the roof BE CAREFUL (sudden gusts of wind can blow you over the at this height!) and always wear soft shoes and keep quiet. Lots of people have been busted simply because the tenants below heard them and called the police. Its useful to dress like a repair person, and claim if seen or challenged, to be a lift mechanic. The main problem with tower blocks is that, if raided, you can easily be trapped (see how to get away with it).

MEDIUM SIZED BUILDINGS

If you're a local station, or have a high power rig or an aerial with gain (or if you're just testing) you don't need to be on a tower block. Any building higher than most others will do, and you can increase your height for instance by mounting your aerial on top of high, well secured scaffold pole (note: there must be a wooden or plastic section between the pole and the actual aerial).

The advantage of lower buildings is that you can multiply both the available sites for broadcasting. You will have to switch sites as often as possible. Also you will have more escape routes and 'bolt holes' than on a tower block. Unfortunately this may also mean you have to watch more potential approach routes by the police and DTI, and you'll need more lookouts if you're planning to save the gear when attacked.

BROADCASTING FROM HILLS

If your town or city has hills this is a good option, the higher the better. You can use a piece of derelict or common land, or at night you can use parks, cemeteries or even allotments. A better option is if there are hills outside the built up area, then use a field or wood away from houses. If you use the directional aerial you can cover the city just as well. This was done by Andromeda Radio, to good effect, they used to cover most of Manchester from a high hill outside, using a mere 4 watt transmitter with directional gain aerial. If you can get up into mountainous area you're even better off and can adopt classical guerrilla tactics, often see the enemy coming distances away, and be very difficult to stop.

On a hill within the town or city use good lookouts, escape routes, CB's etc. and have regular 'escape drills'. Best place for aerial is a high, easily climbable tree. If its not too obvious leave it up there and have a spare ready. An added problem with hills is that you normally have to lug at least one car battery about, which is terrible if you have to climb fences, ditches etc. at night, something like a pram or shopping trolley can help. You can't leave the batteries on site as they need re-charging for your next broadcast. So mains electric is a big help if you can run a lead from somewhere. Outdoors all your gear must be in waterproof cases, or covered with a tent or tarp. Tents are good if you can pretend to be camping. Take care also of yourself and your group. Hot drinks, food, water-

proofs, short shifts for lookouts etc. are good ideas. It gets boring after a few hours. CB's are excellent, but get ones with earphones if possible to avoid noise.
If on a hill you can also use ordinary house, flat, squat or derelict, and just set up your aerial as high as practicable on the roof. Its better to get a place, by squatting or if you're rich, by renting, specially as a broadcast site, no-one likes to live under constant threat of the police storming in. In practice you may have to use someone's house, then don't use it too often. If you must use your own house DON'T leave dope, stolen goods, false ID's or other naughties lying about. It is possible to run your antenna cable from your house to the aerial on another roof, and whip the cable off quick if they come, but this would only work once, and you lose output power with every extra metre of co-ax cable going to your aerial. More of this in the 'How to get away with it' section. NEVER have your studio at the broadcast site. They'll confiscate the lot, under the new laws.

OTHER POSSIBLE BROADCASTING SITES
FESTIVALS, especially large free festivals are an excellent and common broadcast site. A small 4 watt rig will do fine. Set up on a high ground in a tent or vehicle and invite the festival goers to protect you from possible police attack, much more unlikely in these circumstances. If possible make a live studio in a tent, caravan or truck and get everyone involved. Try to get mentioned in pre-festival publicity, or do your own, so people will bring radios. This is pirate radio at its best.
DEMOS, especially long ones, like blockades for e.g. of Nuclear Stations or War bases, can be equally worthwhile. In this context the pirate can be perfect medium for discussion, information and warnings of police movements, as well as for entertainment and music.
BARRICADED SQUATS OR SQUATTED VENUES are another obvious and much underused site for the guerrilla pirate, especially during big meetings or gigs, which you can broadcast live from the roof. This has been done successfully for instance in Amsterdam and Berlin.
OCCUPIED FACTORIES or industrial areas during strikes and disputes provide an excellent and often missed opportunity for the more political pirate group, and can provide vital communication for mobilising, publishing and gaining support. There have been many such opportunities in Britain over recent years.
SIT-INS and protest occupations are another good possibility, which we don't think has been tried. Especially occupations of high towers, buildings or pylons for publicity. But in this situation capture is pretty certain, therefore a small disposable transmitter would be ideal. A good strategy is for everyone to deny using it, and to use any following trial for more publicity e.g. on the lines that the army etc. and the police are already hogging most of the airwaves.
'NO-GO AREAS' are a step up from occupied factories. We know for instance that nationalist pirates broadcast from Free Derry and parts of West Belfast when they were 'no-go areas' to the state. Of course there are no true 'no-go areas' in Britain, but there are plenty of inner city estates where the police rarely venture, especially in the evenings in the riot session, for fear of 'concrete rain' or worse from the roofs. A high block on such area could be an excellent site, especially if you can tip off the local youth to lend a hand. Whenever major rioting begins large areas are suddenly devoid of police, till they can group in numbers and re-take the area. This is another opportunity for 'on the ball' local pirates. By monitoring police radio, runners, and phoned in reports such 'uprising radio' could be a brilliant aid to the fighters on the streets though you would need good security, disposable transmitter, quick getaway routes, disguised voices etc.
LIBERATED ZONES! (Let us know if you find one!) Practically every guerrilla or Nat. Liberation movement, be they right or left wing, has their own pirate radios, which are often crucial influence in such wars, broadcasting from freed zones or neighbouring countries. But you're not likely to come across this in Britain.
INTERNATIONAL WATERS is of course a favourite site, but out of the question for the small 'do it yourself' pirate.

How to set up your gear (FM)

BEFORE YOU GO
Before getting out you had best brief anyone, especially newcomers, on what will or might happen. Talk about getting caught, for instance have good excuses made up for being at or near the site. If

you are planning to give false names, for instance, you'll need an address where someone will confirm you live, otherwise you might have troubles getting bail if you were arrested. In this case keep your first names the same to avoid being caught out.
Make out a standard 'check list' of all you need, and go through it before you get out. It's surprisingly easy to find yourself on top of a tower block, or climbing some tree, only to discover that your cassette deck lead is at home five miles away.

HERE'S A SAMPLE LIST OF THINGS YOU NEED

Transmitter (TX), TX main lead or 2 clip on battery leads (large and well insulated), TX lead to cassette deck if not attached, cheap cassette deck plus mains lead or 2 clip ons and 6 volt bike battery, charged up 12 volt car battery if not on mains, antenna (check you have butterfly bolts if collapsible), the co-axial cable (with plug attached and clips or attached to aerial), fused plug board (if on mains), programme tapes (rewound to staring position), small FM radio receiver(s) to monitor broadcasts, CB's for lookouts, plastic 'gaffer tape', soldering iron and solder in ease of broken leads, torch, warm clothes, munches, bus fare

ON THE WAY

Ideally you need four people, at least two. Carry the gear as inconspicuously as possible, in holdalls or plastic bags. The antenna is a problem. If it's a big long one make it collapsible using butterfly nuts in assembly. Or try to keep it somewhere close to the site. On arrival at the site, especially if you've used it before, send an empty-handed scout ahead, to be sure the police and DTI aren't waiting for you and all is clear. Check also you're not followed.

SETTING UP

In the case of a tower block you should have been there beforehand and have either a key or a broken lock to get straight onto the roof. Lock the door quietly behind you. If there's two doors onto the roof have access through both. Take your gear to a lift / heating room and find a plug in wall socket (if on mains). Check it works. Wear gloves when handling gear, and clean it regularly with cloth and alcohol. They don't usually bother with fingerprint evidence, but they might start. The antenna must be cleaned regularly anyway for good transmissions. Set up your antenna as high as possible, if possible on top of an extension pole or length of scaffold pipe. Often there's a pole already, left by earlier pirates. Attach the antenna securely, with bolts or strong gaffer tape, to a length of wood, then the bottom of the wood to the metal pole (if there). The antenna must NOT be touching or blocked by metal. The co-ax cable can be soldered or bolted onto the antenna, or attached with strong, rust free car battery clips. The clips are recommended for fast dismantling and for testing and developing antennas, mark clearly which goes where. The co-ax cable should not be longer than absolutely necessary, you lose power with every extra foot, and should be good quality and well insulated. Your lookouts should already be on station, with torches or CB's, one at the foot of the tower (preferably sitting on a car or flat) and one on the roof. Keep low and quiet and wear soft shoes. (In one court case Eric Gotts (head of DTI squads) claimed he recognised an Our Radio member from the ground, 18 stories up, at night. The judge accepted his word.)
When the antenna is up securely, lead the co-ax back and plug or screw in to the back of your transmitter . Now plug the TX to the cassette deck keeping the two as far as possible apart, if possible blocked by something solid, like a wall, to avoid interference. Keep the audio lead well away from the power leads. Interference between leads can often cause loss of power and / or 'Sprogs' (unwanted signals on the wrong frequency). You can go so far as to block leads from each other with bricks.
Plug in the cassette deck and the TX to your plug board (or connect to batteries) and switch on. If you have that facility just switch on the exciter stage of the TX first for testing, no need to alert Big Brother prematurely. Go on the other end of the roof with your radio receiver and tune in. Then adjust the modulation on your TX, in relation of other channels, to get the best sound. If this is OK but there's unusual knocking or crackling sounds try moving the cassette deck further from the TX, or raise it above ground if possible. Try further separating or screening the power lines from the audio lines.

You may well find that you have sprogs (harmonics or spurious signals) all over the waveband. Check for this. If so check reception with your lookout 100 yards away, normally such sprogs disappear by that distance and you're OK. But if your signal is still spread all over further away switch off and clear off. Your TX is fucked up and needs difficult repair or tuning you can't do on the site. If you find you're interfering with fire, ambulance or pigs, stop, before they come after you. Most pirates are very careful not to do this.
When all checks are OK, insert your programme tape, switch off, and wait for the agreed time to begin. With practice you can easily set it all up and test it in 10 minutes, but it's good to allow a half hour and to be methodical and cool. Never, for instance, switch on your TX without the antenna attached, you'll blow it. The amp stage of your TX should get quite hot when drawing the power , if not its not working. With bigger transmitters you may need also a small electric fan to cool the heatsinks on the power transistors. Once you're on air its good to go and phone friends for reception reports further afield.

Broadcasting.... How to get away with it

KNOW YOUR ENEMY
On a tower block, in London, the DTI squads can tell where you are, within 20 metres, less than 10 minutes after you switch on. So they can bust you any time. In the case of new pirates the procedure is to monitor you for a while (in case you're just messing about) before busting you. It could easily be a few months before your first attempted bust. If you play anything but straight music they will record and keep all your programmes for possible further use against you (though voice print's aren't used in court). In other cities they are generally slower to get after you. In smaller towns they don't have permanent staff so they have to come specially, depending on your usual broadcasting time, so switching your time is a big advantage.
The detection squads are now directed by the Home Office through the Department of Trade and Industry (DTI) and are officially responsible for stamping out 'radio interference'. They have recently been recognised and upgraded with fancy new equipment. Their HQ is at Waterloo House by Waterloo Bridge and they have several other fixed triangulation stations in London, for instant tracking. They use also mobile detection vans and lots of unmarked cars and have a depot in East London for vehicles and gear. We don't know where they keep their extensive horde of stolen transmitters prior to disposal. They also have their own radio frequencies, they used to be (and still may be) using around 88 MHz, just off the commercial FM waveband.
The DTI squads are not supposed to arrest you, so they have to bring the local filth along on busts, which makes them a lot easier to spot and makes them less flexible, as they often have to wait till the cops have the time free.
For large rich commercial pirates the game is to have plenty of transmitters lined up, and not to try to save them if the police and DTI raid. They often use remote links and can often switch on and off using timers or radio signals, so they don't have to go back and change tapes and no one need get caught in the act (but recently the DTI have cracked this by raiding the 'live studios' and nicking everyone and everything).
But for small community / political pirates with only one or two transmitters its essential to save the gear if at all possible. At the same time its now always cheaper to lose all the gear than to get caught and pay the fines. Nowadays even for the small pirate it may be more advisable to put energy into money raising and mass producing cheap transmitters than into trying to save the gear when they're hot on your trail (though you need to guard anyway against the curious and rip-offs by other pirates.)

PRECAUTIONS
Don't walk and boast unnecessarily about your sites or studio. Work on a 'need to know' basis from the start. One method is to keep programme makers separate from your broadcasting team, tapes can even be delivered to a 'dead letter drop' for instance. But if you can really trust each other its better if everyone takes a turn at broadcasting, otherwise the broadcasters can both get pissed off and become a power elite ('I'm not transmitting this crap!').
Don't, of course, broadcast your location, real names or addresses. Don't give your phone number either, certainly in Britain, the days of phone-ins and instant access to pirates are numbered. If you're

really into phone-ins, get a phone in a false name at a temporary address or squatted flat (NOT your studio). Tape the calls and check you're not followed there. For letters use a box address (e.g. Wuppertal in Germany) and assume all mail is read, or use a forwarding address. When travelling to sites vary your means of transport.

The raid..... Saving the gear

A.) HIDING IT ON THE SITE
Some pirates have tried building the transmitter into walls, parapets, roof, chimney stacks etc. You can conceal it under water tanks, central heating or lift machinery. Better still have it hidden in a legal or squatted top floor flat (possibly 2nd to top would do) concealing your co-ax cable either up the side of the building, by boring a hole in the roof, or by running it up ventilation or 'stink' pipes. Another variation is to have your tape player in a flat, and a long concealed audio lead to the TX on the roof. The possibilities are endless, and most have been tried. On one occasion Our Radio tried the 'dummy transmitter' trick, with it's own dummy aerial, leading the hounds to one end of the roof, while they left by another door. Inside the transmitter box was a can of beer and a 'Booby Prize' note. In all these cases you still need to at least remove your co-ax cable before the baddies arrive, or of course it'll lead straight to your TX.

B.) LOOKOUTS
You need two, preferably three, and take it in turns, and if possible also monitor police and DTI radio channels. You can use torches or signals from ground to roof. If on CB's turn them very low or use headphones, and use codewords, they're very public. Watch out for cars and vans with too many aerials, electrical gear in the passenger seat, hanging around trying not to look suspicious, police cars passing several times etc. Keep an eye on nearby tower blocks or anywhere they may observe the roof with field glasses. A raid is usually obvious, two or three cars with uniformed police accompanying them (though piggies may be also in an unmarked car). They usually try and rush in a side or a back entrance, so watch out... it's quite embarrassing to have all your friends nicked, and you still standing out front yawning! Usually they take the lift (sometimes using a 'fireman's key' to bring it down fast) and often send a few young ones up the stairs.

C.) CAT AND MOUSE
This involves moving and hiding the gear, in flats, stair cupboards, lift shafts, hanging out windows, disguised at something else, etc. Normally they have no case if they can't find it, but under the new laws they might try to do you anyway if you're caught. If your lookout system works you have at least 2 minutes warning before they reach the top of the tower block. You can delay them by switching off the power in the lift room, but if doing this be quite certain you're not trapping anyone, which is difficult. You can call the lift immediately, and if you get them first jam the doors open. You should practice for quick dismantling and packing of the gear in advice. Sometimes its easier to leave the antenna and build a new one.
A good simple 'Cat and Mouse' is to run down several flights of stairs with the gear, hide it in a good spot (the ideal is the flat of a 'neutral' friend) and turn into a 'normal' citizen. If you're stopped have a good excuse for being there.
Cat and Mouse is a good system to start off with. But remember they have done it 1000s of times before. When they become determined to bust you you'll need more and more determined people and new broadcasting sites to stay ahead. After a certain point they're sure to catch you, as they learn more about you, your faces, your habits, your tricks, and as they put more and more men on the case. If you want to get away with it its time for a complete change of tactics.

D.) DISAPPEARING
When the DTI are really on your tail one thing you can do is take a weeks rest, then come back with a different name, style and timing. Of course this fucks up your efforts to make a name for yourselves and gain a regular audience, but at least you're still on air, with maybe a few months grace before they start after you again. Also change your frequency and voices on tape if possible.

E.) SWITCHING

In theory this is a good system, but you need a big team, your own transport, and two or three transmitters (on the exact same wavelength). The idea is this... as the police and DTI close in on one location, the signal switches to a second site. Either you're using links, or have copies of the programme tapes. The team at the first site evades the police and sets off a 3rd site and sets up. If they go for the 2nd site you switch to the 3rd site and carry on etc. When combined to Cat and Mouse tactics this can make you difficult to stop. The problems are, if you're using tower blocks your choices are limited... If you set up say 5 miles away your reception area may be completely different, and you'll need plenty of dedicated people ready to wait night after night to play games with the police... And when they become determined they will still get you. We know of one South London pirate, who used switching with apparent success, then one night all 3 of their transmitters were seized within 15 minutes!

Switching would work better when combined and varied with other methods of getting away with it. Particularly if you're doing a local station, where you don't need so much height, and have lots of more choice of broadcasting sites.

F.) GUERRILLA RADIO

This is one of the main ideas this text is trying to promote. Guerrilla, or Hit and Run radio is the war of the flea. First of all you can reduce the risks of getting caught drastically by broadcasting not a fixed times or a fixed name, or by doing it only for 1/2 hour periods. The problem of course is that your audience is also random and small. The guerrilla idea is to get together quite a few stations, broadcasting on the same frequency with cheap, mass produced transmitters, thus forming one big loose station which listeners would have a good chance of finding on air, while being very difficult for the DTI and police to stop.

BREAK-INS

Break-ins are a higher and riskier form of guerrilla radio, as used in Britain by Radio Arthur and Radio Wapping. The idea is to grab your audience by broadcasting on top of a legal station. The sentences are much higher but there's little chance of getting caught if your break-ins short, say for five minutes, on top of the news or advertising of a major station. You're taking advantage of a quality of FM broadcasting that the stronger signal tends to 'win', blotting out the weaker one completely. With a small transmitter you'll only win for a short distance, but even a few hundred yards could cover a whole high density estate. For break-ins strength of signal is the main factor, a big powerful transmitter (100 - 200 watts) tuned exactly to the required frequency so you can break in for your message on the most popular channel on prime time. For break-ins all precautions should be doubled, also be sure to clear right away from the area as soon as you've finished, and don't use the same time or broadcasting site again. It's as simple as that.

Break-ins are also easily possible on TV, but only over the sound.

Break-ins are more common in countries where pirates have been repressed, e.g. in Germany or the Eastern Block, and are ideal for announcing, demonstrations etc.

There is another and better way of doing break-ins on FM, which may have been used by Radio Arthur. This is to use the VVHF microwave transmitter, beaming your signal at the microwave dish receiving the signals of a legal station from their studios. Their dish then picks up your signal, and providing you're close enough to be stronger than their signal, you get re-broadcast by their main transmitter, thus giving your break-ins perfect coverage throughout their reception area.

However, we don't have technical plans to build such tricky VVHF transmitters, and it would be quite expensive. Though this type of break-ins is possibly at present. (To stop you fast they'd have to switch off the entire station.) They will probably make it more difficult by using access codes to receiver dishes, as its already done to avoid piracy of satellite dishes. NOTE: Don't play around with microwaves, they can be dangerous!

GOING MOBILE

In theory this is an ideal way of getting away with it, but there are quite a few problems. If you're going in a vehicle you can use ordinary car cassette player, but you are better off having a separate 12 volt car battery to power the transmitter. One problem is with the aerial. If you use a bigger, more

efficient one it will be very obvious, one possibility is to have it under a tarpaulin on a roof rack. A bigger problem is height, unless you can park or drive up and down on a high hill, your coverage will be badly blocked. And then of course your reception area will vary radically if you're driving any distance. Not much use for gaining or developing an audience. The main advantage is that you will be much more difficult to stop.
Going mobile is more practical as a publicity stunt, or possibly for local broadcasts. To a small extent, having a bigger TX will compensate for lack of height. Going mobile is good for broadcasting at random just for the hell with it.
Doing break-ins in this way would be great fun in the rush hour traffic.

LINKS, TIMERS, SQUARE WAVES

These aren't for the shoestring pirate, though you can build them cheap if you have the know-how. As we said earlier links often prevent you being busted personally, if you can afford to lose the gear, and allow you to do live programmes. All it involves is using a receiver instead of a cassette deck, then beaming up your signal from your studio, or whatever, using a small UHF transmitter (e.g. on 370 MHz) or adapted cordless telephone, or an FM exciter on a different frequency (or even an ordinary phone line, though sound quality suffers). You also have to make a small directional high gain antenna. If you're using a low power link and a narrow beam its highly impossible for the DTI to trace you, and it was assumed to be safe to link from the studio. But recently studios using links have been raided, in a few cases, with every bit of equipment, furniture, record collections etc. seized under the 1984 laws (e.g. a raid on Radio Horizon's studios in late 1895 when over £20000 worth of gear was 'stolen' legally). This may not however mean that the DTI's new gear can detect links. It's just as easy to find your location by gossip, phone taps or just by following you. Links can make you personally safe, if they can trace you one you could always use two, or three, or .... what they don't and can't do is protect your transmitter, its main advantage is that it allows you to go live from the studio. To protect yourself you might as well use a timer to switch the gear on and off remotely. Timers are pretty easy to build, and you can buy kits, but good ones are hard to find 'off the shelf' as they can obviously be used to make bombs. A good one to buy is the plug in variety, used for fooling burglars when you're on holidays, or by landlords to deter squatters. For remote switching you can also make sound activated switches, via a radio link, or 'square wave' switches, via a phone line. What none of these devices can do however is to turn over the tape, so you still have to go to the site to do this, unless you want to broadcast for less than an hour.

CONFRONTATION

A good trick if you can get away with it. The DTI and police (they normally only bring a few) are wide open to attack (the mouse becomes the cat!) when coming to get you. The problem is that in future you'll have to change your station name, frequency, even your radio voice and they'll always be on your trail. The good thing is that if pirates start attacking them they have to bring many more police with them, and can only do it when spare police are available. Also they are always looking over their shoulders, and have to be more careful with their surveillance work.
One way to hit back, on tower blocks, is to trap them in the lifts. The lookouts signals up when they're in and you throw the main power switches in the lift room. Be careful you don't trap residents as well. Then you take your gear down the stairs, beating up any of them you meet on the way, and make off. Their cars are also vulnerable, usually they're parked unguarded around the corner. If you're going to attack them directly make sure you're well masked and tooled up and have enough skill and numbers to get past them. Go straight for the police officers and disable them before they can make their 'officer in distress' call (take or smash their radios, or have someone jamming their frequencies).
Other direct ways of hitting back are attacking the DTI at their bases, attacking their vehicles at the depot, obtaining home addresses / phone numbers of chief officers and harassing them etc.
Remember they have the entire state apparatus backing them up, any form of direct attack should therefore be anonymous and never spoken of or boasted about later (or before!).
When the lookout signals a raid or anything very suspicious (e.g. a cop car cruising too close too often) immediately switch off, dismantle the gear and move it (switch off the TX first, then the tapedeck. DON'T rip out the aerial when the TX is still switched on!)

Building your pirate station

We're not talking here about commercial pirates, where its just a matter of having good financial backing, popular DJ's and hit records, plenty of ads, jingles and news replayed from legal stations.
We're talking about the 'do-it-yourself' community or political pirate, starting from square one, and doing something worthwhile and original. The truth is that most commercial pirates, in their effort to offend nobody and build towards a possible licence, practice heavy censorship and are often as boring, banal, repetitive, capitalist, sexist, elitist and even anti-democratic as the legal ones, though there are few exceptions. Such pirates are obsessed with keeping their technology secret and attacking the competition at every opportunity.
Smaller, non-commercial pirates are in a different situation and can only survive and develop by co-operation, with the eventual aim of breaking the state and commercial monopoly of 'Her Majesty's' airwaves.

YOURSELF
First thing you need is an interest in sound, and something worth saying or playing. Get a hold of a mike and a cassette deck and play around with it. Record yourself, record any and everything. Listen and record off the radio, off TV, off people's stereos, in the street. Play back your results, see where you went wrong, and try again. Note down your results and ideas and discuss them with others. Read everything you can find about sound and recording and think about why you want to be a radio pirate. Join the Free The Airwaves campaign and read their 'Radio Crimes' bulletins.

THE GROUP
You need to find more people with similar ideas, and not just 'hangers on'. You need to get to know each other well, find out who you can trust, and ditch those you can't. Members should be prepared to share in the tasks, risks and finances equally according to their abilities (in practice this rarely happens). Hold regular meetings, just keeping in touch can be a problem in big cities. Go for maximum openness so everyone knows what is going on. Beware of the power freaks, ego trippers, party builders etc. who are sure to turn up sooner or later.
A good point to start is with fund raising, arranging gigs, jumble sales, meetings, sponsored events or whatever, which can cement your group, attract more people, and advertise your station. How you do it depends a lot on the type of project you're doing. If for example you're planning a minority language station (and there's millions in Britain who have no radio in their first language) you'll want to advertise widely through ethnic organisations. If you're a 'revolutionary' group planning to claim responsibility for armed actions you won't want to advertise at all. Minority music stations are the most common. But we'd advice you to widen and deepen your group, or join with others, if you're going to build and maintain the commitment (and cash) to keep a station going. Many music stations get backing from clubs, and are the platform for the disgustingly egotistical and inane DJ's who work in those clubs. Such solid backing is a good idea however. If you're running a station, you'll be hard pushed to fund a raise as well. If you see your station as a part of a wider movement (e.g. anti-war, women, gay, anarchist, animal rights etc.) you should try to get regular backing from that movement. Another good trick is to siphon off small amounts of cash regularly from council, charity or student union funded bodies which your members are involved in. What you need is income, not a lot, even £20 a week would do if regular. If some of your members have good jobs they might be able to do it, otherwise you could be tied in with a money making co-op or small business. One example of this is the squatters pirates in Amsterdam, who can get a small regular income from a fund raised by a small tax on drink in squatted pubs and cafes.

OPEN ACCESS
Once your group is going well, and you've started to make tapes and get the gear and cash together, you should think seriously about teaming up with other groups who you broadly agree with (or don't disagree). For example at the moment (late 1986) there are dozens of such groups who have failed to get Community Radio licences and are dying to get their stuff on air, though afraid to 'go pirate' in their present hostile climate.

The idea of 'Open Access' is to share a frequency, studios and even transmitting gear to start with, with different groups. The advantages are obvious... more money coming in from more sources, less equipment needed to begin with, a pooling of technical abilities, more political clout, more participation, bigger audiences etc. A good way to approach this idea is by having public meetings, contact Free The Airwaves campaign etc.
The problems come with co-ordination, political rivalry, possible infiltration and the sharing of tasks. For an Open Access grouping you need regular democratic meetings of all involved (at least monthly) and insist on full attendance. You need a few good people who are into organising it and making it work. Another problem is with broadcasting. You should aim for everyone having their own gear and broadcast team as soon as you can, so you will be more difficult to stop by the police and DTI. So you should insist on every group producing tapes providing at least two trusted people regularly both to the broadcast team and to work on the technical and backup side of it (building, repairing, purchasing etc.).
Open Access station depend on co-operation, if you have that then all the other advantages come into play, but you are fighting all the time against our training, in this society, to be competitive and individualist. The ideas of Open Access radio have been pioneered in this country by stations like Sheffield Peace Radio, Our Radio and Cambridge Community Radio and its worth studying their experience quite closely, as well as the example of such stations and Federations of pirates in other countries. Its often fatal to allow one person, however benevolent they may seem, to become a leader or spokesperson for an Open Access grouping. The straight media also love this to happen.

LOCAL / "COMMUNITY" PIRATE RADIO
The word 'community' has lost any real meaning, through misuse and over-use (e.g. 'Community Policing'). The old style communities are thing of the past (if they ever really existed) except on the Soap Operas, as the system breaks us all down into individual consumers. So if you're talking about 'Community Radio' you should be quite clear what you mean by it, and what the State means by proposing (and then cancelling) such an ideas. What class, ethnic, interest, political or gender sections of the people are you aiming your pirate radio at? Or better, creating your pirate radio with? Or are you really working on your own career? Or trying to create 'community' in your own head?....
Local pirate radio is a more clear idea. There are many advantages to broadcasting locally, e.g. more broadcasting sites, harder to get caught, room for more pirates on the broadcast band, cheaper and easier to built transmitters, closer contact and participation of listeners etc. In a big city it's a good idea for your station to base yourselves in one area, whether you're broadcasting locally or city-wide. You need a local base, and local backing, financial if possible. If your station is appealing to one small section of listeners it may not however make sense to do a local station, because the potential listeners are fewer. A local station should aim at a fairly wide section of the population. An Open Access station would work well on a local basis, as co-ordination would be easier, and all kinds of interest and minority groups could be persuaded to make programmes. On a local basis publicity and support are much easier to get, as is the possibility of mobilising people to defend you when attacked, e.g. a popular station in the middle of the large housing estate. Local broadcasting in inner city areas can nevertheless involve hundreds of thousands of potential listeners. Most of the smaller existing pirates are, in effect, local stations, because of the limitations of height and the power of their transmitters, though very few allow any access or see themselves as a local voice and resource.

How to make a studio

Back to square one, you've fooled around with tapes and microphones, but soon you're going to want your own studio. If you have no cash don't let that stop you! Most of the gear can be borrowed to start off with. For beginners purpose a studio is a small room, a couple of turntables and cassette decks, a microphone, headphones, and a small disco mixer, a plug board, leads, some records and a table to put it all on. You'll also need some blank cassette tapes, and sound effects records if you can (borrow from a record library).
After that it's just practice and patience, knowing and collecting your material, and getting more or better sound gear as you go along.

Having said that there's plenty of tips we can give you. A permanent room is handy. Sound proof it if you can, cardboard, layers of carpet, egg boxes or Styrofoam are all good. Try to plan it out before you start as to have everything within reach of the operator(s), while having enough room for the interviews and group work. If you build your own control desk you can drill holes and arrange for all the leads to disappear and join underneath, much less hassle. If you're buying cassette decks try to get something also suitable for outdoor work. Try it out before buying, e.g. don't get one which leaves a loud click on the recording whenever you lift the pause button. Quality and editing are better if you record your final product from mixer onto a reel to reel tape recorder, though it means re-recording onto cassettes for broadcasting, and a good cassette deck can give near as good results and is cheaper. If buying a microphone it's worth getting a good directional one suitable for studio and outdoor interviews, and make sure the 'impedance' suits your mixer. A 'cheap' £50 disco mixer will do the job (you can even mix through some stereo units). If you have the cash go for the flashy new £150 range with built in graphic equaliser with which you can do wonders. Another tip, keep mike leads, din leads and power leads well separate each other and make sure everything is well earthed (from the chassis if necessary). If you also have 'hum' problems with cassette decks try plugging in the power lead the other way round (i.e. where it goes into deck). Use cheap turntables, not automatics, and buy ones which use cheap cartridges, as you'll have to replace them often anyway. Use good quality cassette tapes however. C120's are best for length of programme, but get the best or they'll tear or jam. On the turntables put in your own on-off 'cue' switches, for ease of operation. When you've 'cued' a record to where you want to start, turn it a full turn back, by hand, to avoid slow start up noise. Try and have an LED meter on the mixer and on the final tape recorder, allow the needle to go just into the red for music recording, but only half way up for speech recording. For group interviews an omni-directional mike can be handy, and pay special attention to sound recording levels and background noise. Don't use telephone in the studio. Though the phone is the lifeline of democratic radio, in the present climate it means you'll be busted and/or have everything in the room recorded by the police....
You really do need two turntables, and at least two cassette decks... All these tips, and more you'll pick up as you go along, but it's good to work out standard 'how to use the studio' for newcomers. Pay attention to safety, e.g. have the plugboard (fused) well out of the way, and don't allow coffee or beer near the gear. Read a book on basic sound studios.
One last tip, lock it up well, especially if it's not in your own home, and barricade and cover any windows. there's one sure thing about accumulating sound gear... sooner or later someone'll nick it!

The programme

This is entirely up to yourself. No need to follow any conventions. Some people say have to 'master' conventional programming before you can do something different. Other say if you do that you'll never do anything different.
Again there are some hard learned tips for pirate. It's good to talk with all concerned before starting, make a list of all the possible material gathered (music, interviews, sound effects, news items, jokes or whatever) and try to put it into some kind of order. A signature tune or jingle isn't such a bad idea, as people recognise the programme by it, often after they've forgotten the name. Repeat the name of your programme often, but not too often, along with your frequency and broadcast time. Put your important items first (e.g. a demo next day, your appeal etc.) as it's always possible you may be busted before the programme ends. If you're excepting a bust put all your best material first and keep the programme short. Use first names (false ones) and try to have a friendly, relaxed atmosphere and give everyone present a go on the microphone and control desk. While throwing out conventions don't forget that we're all conditioned to quick variety and short attention spans. Long single person interviews are not on, no matter how interesting, but need breaking up, also remember people are continually tuning in (and out) and if doing long pieces you need to 'flash back' the story so far. You need variety and interaction without sticking in jingles every 30 seconds. Try and make it interesting / enjoyable / entertaining both for you and the audience, otherwise why to bother?...
Style and themes are your department. It's easy on radio to get arrogantly carried away with an idea of your own ego, or with 'in' jokes or political hobby horse, watch out for this. Practice with using the gear, good preparation and research make everything go much smoothly. Background music and

fading music in and out can be very effective if done well. A large studio, tea breaks etc. help a lot. The more time you put in the better the result (usually), you can spend a whole night making a good one hour current affairs programme, for instance.
More than that is hard to say, so much depends on the people, the subject, the projected audience, the time of broadcast etc. You should actively go out and seek feedback and opinions from people you know have listened. Probably you won't bee able to do phone ins and mail is slow and erratic (don't worry if you don't get a big postbag, few stations or programmes really do). It's easy to become cut off and feel like you're talking into a vacuum, or get completely wrong idea of what kind of people are listening.
Making programmes is really not that hard, however bad an inexperienced you are, you can quite easily improve on some of the 'aural shit' being pumped out by legal stations over the airwaves, 24 hours per day!

Publicity

Publicity is very important, especially when you're starting off your new station. Of course your main publicity is to keep coming back on air, no matter what. But if you're hoping for a minority audience to tune in specially you need to advertise a lot where those people are likely to see or read it. Be warned, there's no real tradition in this country for large scale support for pirates, and people often tend to consume the media i.e. forget instantly they switch off. It could take you long time to build up the regular, participate audience, and the solid support you need to attract new blood, break even financially etc.
If you're a local station your publicity is obviously a lot easier, and you can poster, graffiti, or even leaflet your entire reception area. If you're a wider station make sure you're always mentioned in the 'what's on' papers and get articles or interviews into any paper likely to support you. Send out regular press releases to the local and national press, and try to cultivate contacts among the slimy reptiles (journalists). Almost any publicity is good, as those people likely to listen in to you will also likely read behind the bias of Tory press. Oddly, one place you should certainly seek publicity is on radio, try for instance getting onto phone ins. On radio you are already talking to people who listen to it! TV, if you can find any way to stunt to get onto it, is the most powerful publicity and you should certainly court the bastards running the local TV news, this kind of appearance really does stick in people's minds and start them talking... Strangely enough the media are not overly hostile to pirates, providing you're just an oddity, not a direct threat. Many media workers hate the shit they're forced to produce and admire the 'romantic' pirates. You should play on this for all it's worth, and always try and get your frequency and broadcast times across. They will sometimes put you on, as an interesting item. Remember that pirate radio is a 'victimless crime'!
If you're mainly a music station you should publicise where people listen to that type of music, if you have your own club, of course, you're laughing. Join Free The Airwaves and get publicity in their paper. Write articles for radio pages, and do benefit gigs, public meetings, media stunts, whatever you can manage. Choose a catchy, hard hitting name for your station. If you're doing political stuff they're going to go for you anyway, so you might as well get value for effort!
Remember, if you want to be a participatory station, you'll have to go out and seek feedback. Get out on the street and do interviews whatever you can. Take along your cassette recorder to every type of event, the more different voices and views the better.

Building up your pirate station

It's hard to give advice about longer term development, but there's a few things worth saying. First of all it's important to pace yourselves. It's easy to start off with a lot of enthusiasm, then get busted off the air, or just burnt out with too much work or too few people. However good or different you are you will be very lucky to build up a regular audience or mass support overnight. Though your potential number of listeners may be huge you can except response to be slow. Breaking down passive consumption of the media is not easy. Having your own clubs, events, regular demos etc. helps, as do dramatic publicity stunts. You need to work out what you're aiming at. We say support, participation and a large number of listeners is a good aim. But you may just be broadcasting as a way

of pressuring for a licence (which is a bit of a sell-out and a pipedream). Ideally you should plan ahead and gradually increase your broadcasting times, while developing all aspects of your station, rather than going all out and then collapsing at the first bust. The best advice then is to operate well within your capabilities, and to join up with any other pirates who are not commercial and not racist, sexist or fascist. Your longer term aim, as a pirate, should be to reach a situation where you have so much support (money, volunteers, transmitters, listener support etc.) that the state just cannot wipe you out at will. The best hope for pirates is to swamp the forces of repression by sheer numbers, as happened, at different times, in Belgium, the Netherlands, France, Italy, and now, it seems, in Spain. This does not imply chaos, but co-operation, federations and sharing of the available airwaves and times. The swamping the airwaves is NOT going to be caused by the commercial pirates, hogging, hiding and mystifying the technology and even sabotaging each other. However if we do manage to start a non-commercial movement of pirates capable of doing this then commercial pirates will jump onto the airwaves, with more power, and try to force us off. This would be a major problem.
It is a mistake and an excuse to blame the Tories and the new draconian laws for the lack of alternative pirates in Britain. The main thing stopping us is the lack of any strong combative movement (whether it be workers, women, anarchist, or whatever) in which to build a big wave of pirates, though there are literally millions of symphatetic people about.

Medium wave

ADVANTAGES AND PROBLEMS
At the moment FM broadcasting, with all its advantages, is the favourite for pirates. But it's well worth pointing out that at least 25% of radio receivers in Britain can't even receive FM, so you can't pick up most pirates on older radios. Another thing, in some hilly areas FM broadcasts have a very bad coverage area. And a third advantage, you can cover a very much bigger area on MW, at least potentially. MW can be the best choice for you, especially if you're in a country area, or in hills or mountains, or only want to broadcast by day and aren't too worried about sound quality. MW transmitters are also fairly cheap and easy to build, and because you use a crystal there's no problem with tuning or with 'sprogs' (harmonics). Though the antenna is a huge length it's just a roll of wire, and doesn't necessarily have to be up high, which gives you a quite different, if still limited, range of possible broadcasting sites. MW works by bouncing radio waves back off the stratosphere, not by line of sight like FM.
Of course there's lots of other disadvantages, one is sound quality, and stereo is out of the question, and there's not much free space on the wave band, chiefly because of a host European stations, which become stronger at night, blotting your relatively weak signal (this is due to atmospheric changes we are told). The TX is also bigger and heavier (about 12" x 8" x 6") and you'll probably need to use car batteries.
One thing I forgot, if you want to reach any of the 50000 prisoners in Brit. jails, you must use MW, FM is still banned in prison, for some typically petty reason.
It is also agreed that you're generally less likely to get busted. In the present repressive climate that's well worth considering.

How to broadcast on MW (540 - 1600 kHz)

YOUR TRANSMITTER
Enough general talk. So you want to broadcast on MW. So here's how to do it. First your transmitter. Medium Wave transmitters aren't so hard to build, any good amateur radio buff could do it, and there's people around who will build them (reckon to spend £100 to £150). The technology is tried and tested and our design is as good as any. The TX is valve operated and you use a crystal (which you have to order on the chosen wave length) which keeps you on frequency without the problems of FM. So you have to decide from the start which frequency you're going for and stick to it, or buy a new crystal. When choosing your frequency remember that it must be divisible by 9... MW frequencies are separated by 9 kHz by international treaty. If your signal doesn't conform you'll probably have the DTI and police down on you faster. If you have problems getting a MW transmitter you may be able to buy a kit or adapt an amateur radio transmitter.

ADAPTING A MW TRANSMITTER

I'm not exactly an expert on this and the following info comes from the US. Apparently you can easily buy second hand radio ham transmitters and adapt them. The best to go for is the Viking Valiant (200 watt) or the Viking Ranger (75 watt), both made by Johnson & Co. These ham radios are well built, have excellent audio and moreover have built in VFO's (variable frequency oscillators) which make them simple to modify to work on the top end of the AM band. All you need to do the RF (radio frequency) circuits is to add capacitance to the 160 metre tuned circuits. And all you must do to the audio circuits is to bypass the first pre-amp (assuming you're using a line level instead of a mike level). One other thing, you must bypass the speech frequency filter, which is located between the 2nd pre-amp and the driver.

When buying such a 2nd hand ham transmitter: A) Get one with 160 metre capability. B) Don't pay more than £100 for one(???). C) Make sure it has plate modulation (look inside and check there are two transformers well separated from each other). D) Don't get a 'kit built' one with dodgy wiring and if possible check the valves before buying, they're rather costly.

SETTING UP YOUR AERIAL (MW)

Security precautions and preparation are the same as for FM. But there the similarity ends. For a start your total aerial length is 1/4 your wavelength, so if your wavelength was 200 metres, for instance, your aerial would be 50 metres long! You use a ordinary thin single strand wire. Buy a roll, keep it on the roll and measure it out, metre by metre. Ideally the aerial would point straight up, but that's just not feasible, unless you hang it out from the side of a tower block or a steeple, or suspend it from a balloon (only the balloon blows away). The normal method is the 'dogleg' which works just fine. The ideal site is a field, or deserted common land, far away from houses, with two tall trees (only 2 if possible, poplars are best) about 30 to 40 metres apart. Now string the 'dogleg' between the trees and down to your TX without touching branches or leaves. Sounds impossible? If you have a trained monkey that's just fine. Otherwise try our method. Practice and patience is necessary.

Bring along with you a catapult, a long reel of 70 lb. strength fishing line, a plenty of lead fishing weights (not too heavy for the catapult). Also some small plastic rings (cut out lids of plastic containers work fine).

Tie one end of the fishing line to a lead weight, leaving the line coiled neatly and loosely on a piece of bare ground. Then fore the lead weight from the catapult right over the centre of a tree! Go and search for it (don't try this at night). Tie on your plastic ring in place of the weight and pass about 30 metre of your aerial wire through the ring. Now get your mate to pull the other end of the fishing line, if it doesn't get tangled pull it till the ring is about 5 metres from the tree top. Tie the fishing line securely (to the tree), cut it, and head for the second tree. Repeat the performance, firing right over the tree from the far side. Pull the aerial end through, and this time tie it to the ring. Pull up as before to about 5 m from the top and tie the line. Now back to the roll of aerial wire (extended with fishing line as necessary) and start pulling it in till it's suspended without touching the trees! It's hard to get it just right so the aerial reaches your TX and is tight, adjust fishing line lengths and / or position of TX. Better choose two trees too far apart than too close. When you finally get it all set it's hardly worth taking it down again after the broadcast, though you should loosen it off or it'll snap in the wind. Disguise it if possible. A further problem can be with kids and passers by, disguise your actions, bringing along fishing rods or a kite is a good ploy. One of the best broadcast sites is a clearing in a large wood. On Medium Wave remember, you can go right outside the city and still cover it and lots more besides.

SETTING UP THE GEAR

The transmitter should be on wet ground. If it's dry, wet it. Mud is good stuff. The aerial wire should be taut all the way. Bushes are an advantage, for concealment, but don't let any touch the aerial. Your power supply is a 12 volt car battery. Bring two, well charged up, if you're broadcasting for more than few hours, medium wave uses a lots of power. If your TX is on mains (240 VAC) you'll have to get it adapted using a 'rotary invertor', it's not difficult. A lorry battery is the real thing, but what a drag to carry! If there's a chance to go on mains, by running a line from somewhere, you

should go for it. Otherwise wear old clothes and gloves against acid spills. When choosing your site balance the need for remoteness with the problems of moving the gear.
The transmitter must be very well earthed, the earth is an essential part of the aerial system. Use a ring of metal stakes (e.g. tent stakes) and file off any rust or dirt for good connections. Attach the stakes securely to the chassis of your TX, with the thick metal straps or wires held by butterfly nuts or strong clean battery clips.
So far so good. The cassette player, on the contrary, should be off the ground, on a box or whatever. As usual keep the audio lead, battery leads and aerial wire as far apart as possible. The cassette player is normally powered by a 6 volt motor bike battery, with suitable leads. Torch batteries are dear and have a pathetic lifespan.

SWITCHING ON
Connect up your batteries, load up your cassette player with a 'trial tape' and you're ready to go.
1) Turn tuning adjuster to the right till the meter gives the lowest reading.
2) Turn 'load' adjuster till meter rises about 50 milliamps.
3) Tune again till it drops about 25 mA.
4) Load up again as above.
5) Carry on procedure till you get a load of about 150 mA on a 20 W transmitter, or 100 mA on a 10 W rig. Your last tuning adjustment should produce virtually no dip on the meter needle.
6) Adjust modulation in relation to other channels to get your best sound. Use a radio receiver held at least 50 yards away for testing.
7) If there is crackling, knocking or bad sound, repeat from the beginning. Check that your stakes are in well damp ground, that all lines are well separated, that aerial isn't touching trees, hold receiver further away etc.
If you've done all the above you should be broadcasting loud and clear. If your signal is still wretched chances are your crystal is burnt out, or something is blown. Then go home.
If all is well, switch off and await the time of your programme is due to start. Don't detach aerial wire with the TX still turned on.

PACKING UP
When you're finished, switch off immediately. Then disconnect everything and pack into holdalls or large plastic bag. Be especially careful carrying the TX with it delicate valves. You should have several sites, and switch as often as you can. Don't re-use a site after an attempted bust. If you have a good dry safe stash and are coming back best leave your transmitter, cassette deck and leads there, and just take the batteries back for recharging. Such a stash should be in cover, be quite sure a hidden watcher or bod with binoculars couldn't spot you stashing the gear. It's likely that the DTI will send in men to sneak up and watch you, prior to planning a bust, so be careful, even when not on air, don't relax till safely home.

WHEN ON AIR, PRECAUTIONS (MW)
Read the FM chapter 'How to get away with it'. A lot of those precautions also apply.
At a MW site your chances should be much better, you need on person just to stay near the TX, in case of kids, passers by etc. and to grab or hide it fast when they get the danger signal. On many sites you can work out lookout points to give plenty of warning. However you might as well abandon the batteries, and certainly the aerial, if you have to run far. If you have transport or good escape routes you can try a clean getaway, but safer method is to hide the gear well (not too close to the aerial if it's left up) and beat it. We favour bunkers, holes pre-dug and lined with waterproofs, under rocks, with heavy lids covered with earth and bushes. In theory they could find these with dogs or metal detectors, but we've never heard of them succeeding or even trying (you could always bury bits of metal all over the place). The possibilities are unlimited, if you're on the ball there's no reason they should get the gear... and without that they have a lousy case against you.

Busts.... If all goes wrong

You're nicked. What you say to them depends on the circumstances. If they haven't got you, deny it point blank, give them your cover story and a verifiable address, and stick to your story no matter what. The problem with this is if they have nicked others and they give different stories, a different name for you etc. Best discuss all this beforehand. If caught on the hop, best say you don't know any of the others. You're caught in the act or with the gear. Give them a verifiable name and address and refuse to discuss the matter further. No matter what. People have managed to get off in the past, even with the gear in their hands, but under the new laws this is unlikely.
Although they can arrest and charge you, illegal broadcasting is still normally treated as a 'summons offence', which means they question you, let you go (eventually), then summons you by letter to appear in court. This opens possibilities of getting away with it - you may be able to bullshit them with a false name etc. (though they can now hold you on suspicion of doing this for three days). They will normally 'ask to accompany to the station', or if they've raided your flat may interrogate you there and then. If you refuse to go to the station they will arrest you (for obstruction, insulting words, suspicion of stealing electricity etc.) and take you there, where you can be interviewed by the police and DTI. The 'pretext charge' is often dropped later. When interviewed on the station it's better really to refuse to say anything, especially if there are several of you, cover stories usually fall apart under long and detailed questioning. However silence usually means they will hold you longer. If they get you to the station they are pretty certain to photograph and fingerprint you. You can't refuse under the Police Bill.
When nicked your best bet is to remain calm.
Demand to ring your solicitor. Don't panic, it's not the end of the world. Smile at the bastards. Have a good kip in the cell - you've done your best.

Fighting your case

It's usually months before your summons arrives, if they decide they have a case. Get legal aid if at all possible, and a good solicitor who knows the, by now, pretty complex legal situation. Plead NOT GUILTY, but beware if you have money, they may award costs against you if you lose. Get your Bust Fund together, with gigs, jumble, radio appeals, donations all round etc. It's good to campaign about your bust on the air if your station is still going. Most commercial (read conservative) pirates don't do this, carrying their bid for respectability so far as to ignore their own best weapon. Make sure the address you gave when arrested is 'clean', they could possibly raid you to look for further evidence. If you're a political station watch out for suspicious break-ins where nothing is stolen, the Branch often do this.
Get your story straight, get witnesses to write out their statements together, make copies and give them to your solicitor. Don't trust your solicitor too far, they sometimes say 'plead guilty' just to save themselves trouble, if he/she starts getting cold feet get yourself a new one (they don't like this at all but it can be done). Get your solicitor to ask for copies of the prosecutions witness statements in advance of the case and make sure you see them. In court dress neatly and be polite to the bastard (magistrate) and the filth. Have a good 'hard luck' story for your solicitor to tell, it's always good to say you're just getting married, starting a new job etc., but don't say you have money or the fines will be bumped up higher. If you're going to 'bend the truth' a little don't tell your solicitor you're doing it, and be sure friends watching in court don't start laughing! The DTI and police will lie anyway, more likely than not, get your witnesses to focus on these lies and your solicitor to cross question them closely, especially any police witnesses, who are more stupid and inexperienced in this kind of case. Demonstrations outside the court are good publicity and can intimidate the magistrate if big enough, but don't always help your case (e.g. if you're pleading 'dumb bystander' how come all these people are so concerned about you?). If you want press, send out Press Releases at least a week in advance, so the hacks can put it in their diaries, and phone sound with reminders the day before.
Your fine should be paid by the Bust Fund if at all possible. If not, extra costs should be divided up among everyone in the station (always plead poverty and ask for time to pay).

When you've been busted once you shouldn't, ideally, work on the broadcasting end again, though you could still do lookout, backup, monitoring etc., as second offenders normally get the maximum fine.
If you win the case, as quite often happens, have a good party!
If you win there is also some possibility, in theory of claiming the gear back, though this is much less likely under the new laws. Ask your solicitor about it, and there's a chance get someone else, with some kind of receipt, to apply for it, saying they'd bought it before the bust.

Some adverts: (1986, addresses may be different?)

Radio Support Group
To join Radio Support Group and get updates and development aid write to:
Radio Support Group
c/o Drowned Rat
Box 010
27 Stokes Croft
Bristol
Avon BS1 3PY

Free The Airwaves
BCM Box 1502
London WC1N 3XX

Radio Crimes is the name of the FTA bulletin, and will carry full technical updates on these designs, and much more. To join FTA and receive the bulletin send £2 (for organisations £10) to the address above.