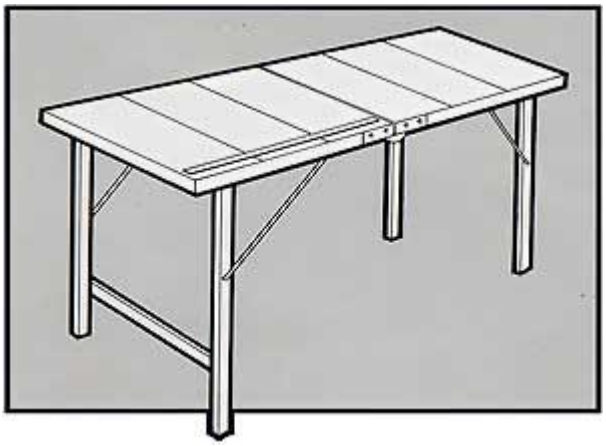
Independent media guide

A guide with advice and information on developing your own media, from online and printed publications to speeches, flyposting and more.

A guide to setting up and running stalls



A guide with tips and advice for running a stall for a political or campaign group to distribute literature and maybe raise funds.

Why set up a stall?
Setting up a literature table at events is a lot of work; why should you put so much energy into this? Answers:

A. Tabling makes money
B. Tabling provides outreach for your group
C. Tabling provides activity for members looking for something to do.

All of these benefits are essential for building your group, and making it strong. It is important, especially when you are not involved in a local organizing drive, to generate activity and be seen. And, if your group is not active, and you do not plan any events, your members will drift away.

Where to set up a table
All of the following events and locations are useful and beneficial to some degree. They are listed in decreasing order of likely success (based on observations made by experienced East Bay IWW members):

A. Big political events, demonstrations, and marches;
B. Events of your own;
C. Small events;
D. Specific locations in your community;

It is best to start with no more than one event or tabling effort per month and build up your momentum. The least likely to succeed (in terms of raising money or general outreach) is establishing a table in front of a supermarket or a transportation center. Tabling at big political events, on the other hand, while not especially conducive to organizing, is nevertheless much more conducive to raising money for the group and letting active folks know of your group's existence.

Supplies you will need
In order to successfully table and accommodate your volunteers, you should obtain the following (lightweight, yet durable materials are the best)

A. Portable Tables (if none are available, a tarp laid out on flat ground will work)
B. Folding Chairs
C. Milk Crates (for transport; can double as chairs)
D. Rubber Bands (wind is always a nuisance)
E. A Cash Box and $20 in Small Bills for change (round your prices off to the dollar; it's much easier)
F. Clip Boards (for petitions and sign-up sheets)
G. Literature Racks (not essential, but highly useful, especially if space is limited)
H. Tarps and Rope (in wet climates)
I. Marker pens (always come in handy)

And, a durable hand truck with straps for transport is essential. These can usually be found for very little money (less than $50) second hand. But get one that is durable and will last. Airport luggage carts are flimsy and will fall apart due to wear and tear.

Free literature
If your table is full of neat stuff for sale, you will be able to distribute a great deal of organizing literature for free, because folks who come to the table, whether to browse, buy, or ask questions, will inevitably accept any free information you provide. So, it is not a bad idea to produce some basic literature explaining what your group is working on and/or has accomplished. Petitions and Pledges of Solidarity are also useful to have. This is yet another benefit of setting up an table.

Guidelines for setting up a stall (free literature and merchandise)

1. Be sure that the name of your group appears on a sign or banner prominently displayed and visible from a distance. People want to know who you are.

2. If you are selling merchandise: Have an appropriate amount of change in a cash box or other suitable container. The cash box should also contain pens, pencils, tape, scratch paper, etc. As the day goes on, if you are accumulating a considerable amount of money in the cash box, take out all cash except what you need to make change and put it in a safe place . Do not neglect to do this, so that the risk of theft can be kept to a minimum. Keep careful records of financial transactions while tabling – it might be a good idea to keep a record of donations, memberships, sales, and sales tax, separately.

3. Make the table display as attractive as possible. A tablecloth perhaps, a variety of colorful books, shirts, eye-catching signs, posters, etc., will draw people over. Hang up shirts if you can instead of just putting them flat on a table.

4. Put free literature front and center to make it as easy as possible for people to pick up something and take it with them.

5. As people approach the table, stand up and engage them in friendly conversation.

6. Always provide a sign-up sheet that offers further contact. Usually that contact would be a promise to receive the next issue of your newsletter or to notify people of an upcoming event you're planning. Forward a copy of these sign-up sheets to the person in your group who keeps track of your group's mailing list. This is more important for small groups for whom adding a few new members would be a big boost than for large groups, which will probably find it too much work and cost for minimal response.

7. The person in charge of the booth should know prices of all merchandise for sale. Take an up-to-date price list of all merchandise. All items should be marked with the price, whenever possible.

8. As the day goes on, straighten literature periodically to maintain a neat appearance of the table. For outdoor events, have with you a plastic sheet of some kind for a quick cover if it rains, and a bunch of clean rocks (or rubber bands) you can use to keep pamphlets from blowing away if it's windy. Protect the free literature as carefully from moisture and excessive dust as you would the merchandise for sale.

9. If someone asks you a question about the material you are tabling that you don't know the answer to, try to get their name and phone number. Offer to find out the answer and call them back -- then do it. This is much preferable to giving incorrect information, or none.

10. For groups that have merchandise brochures and can fulfill mail orders: If someone shows an interest in an item you can't supply right then, give them a merchandise brochure and invite them to place an order for it.

Other ways to distribute free literature

Coffeehouses: There are often vegetarian or eclectic cafés, coffeehouses or stores which are not corporate and cater to casual patrons who aren't rich people or trendy. Basically, they are places YOU would feel comfortable hanging out at with your friends. Some may be meeting places for activists. These are a good bet for leaving literature but, you should clear it with the people who run the place before leaving any literature. If they won't go for it, don't try to convince them. Just find another place where they will let you leave literature.

CARE Packages: Send CARE packages of literature to people who write for more info about your group or its politics or who express an interest in anarchism in letters and e-mails pertaining to work your group is doing for anarchist-related projects. It is a good idea to be

networked with other anarchists in your area so if people get information request letters, they can refer them to you so you can send the person a CARE package.

Other collectives: Give your literature to other collectives and to friends whom you know will put your literature out. Some of them will also have THEIR OWN tabling projects. In this way, you can get more literature out than if your group were doing all the work themselves.

Excerpted from How To Do A Red and Black Book Project by Scott, Insurgency Culture Collective with modifications by Shawn Ewald, Guidelines for Tabling with modifications by Shawn Ewald and from Steve Ongerth, East Bay IWW with modifications by Shawn Ewald.

Book review writing guide

Tips and advice on how to write a review of a book or pamphlet.

Book reviews. If you write or publish anything reviews can be a gain or a pain. Even the pain of negative feedback can sometimes help. To readers they can be a warning, a source of information, or the leaping-off point for research and discussion. Just like there never seems to be enough books in the world, there's never enough reviewers, and it's a good way to develop critical writing skills.

Why
There are several reasons why you might want to review something. Maybe you know the author.

Maybe you want a free book. Neither is automatically a bad thing, as long as you can do a reasonable review. At least one of the following should apply:

- You can say if the book does what it tries to do.
- You can fill in some interesting background to the book.
- You think the book is good and should be more widely known.
- You think it's awful and should be challenged.
- You want to discuss the ideas in the book.
- You can write an interesting piece on what the book made you think

How
Just as you should think about why you're doing a review, you should ask why this book was written. This is probably more important than all the ins and outs of what goes on. Books get written on all sorts of subjects, but they all have their own axe to grind or point to prove. It might be 'rebellion is natural' or 'human ingenuity knows no bounds' but try and see if you can find it and sum it up in a couple of sentences.

Your reader will want to know what you think of the book. Is it good or bad? Did you find it useful or annoying? Explain why. Is it infuriating because they don't say where quotes come

from? Or because they think quoting big names proves something: 'Socrates! Well that's OK then!' as John Barker says (in Frankenstein and the Chickenhawks.)

Try to give people some grasp on what's going on if they do go and read it. Reviews of books that no one else will ever find can be interesting too, because they communicate some of those ideas again. In this case you can be less wary of saying what happens in the book - though of course, it will help if you appraise it too.

It's sometimes a good idea to lift examples from the book to show how they write or what point (they say) they're trying to make.

Comparing and contrasting two books that are connected (e.g. a personal account and a historical overview of the same events) can be much easier than starting from scratch. You can also use your imagination to connect two different books.

Sometimes the book you're reviewing is only a jumping-off point. John Barker's review of Tom Vague's Anarchy in the UK (on the Angry Brigade) is partly concerned with why it's not a very good book; mostly it's concerned with what it was like to be an activist in the early seventies.

If you don't have in-depth knowledge of a subject, that needn't stop you reviewing a book about it. You could still use your common sense to discuss the subject, as well as what writers think.
Try to be interesting but don't pad it out and don't worry if that means you end up with a short piece. Watch out for running off at a tangent. Sometimes that can be a good response to a bad book, but maybe stick to one tangent at a time!

It's always a good idea to someone else to read your review; preferably someone who hasn't read the book.

By the Kate Sharpley Library

Flyposting guide

Guide with tips and advice on flyposting, or "wheatpasting", for advertising and getting your message out to a wide audience on a low budget.

Why flypost?
Why not? Why be shy about what you want to say to the world? Almost all the information that reaches people in our society about the world around us goes through channels ('the media') which are controlled and mostly owned by people with a huge vested interest in keeping society how it is.

While some stuff which challenges this gets through, the vast majority of news and views that reaches people is confined within very narrow boundaries - anything outside those boundaries is labelled as 'extremist', and easily dismissed.

All sorts of dodgy people pay huge amounts of money to designers and councils to paste their consumerism bullshit all over our streets - why shouldn't you have your say?

What to post
Anything you like. Information you want people to know, events that are happening and news that never gets in the 'mainstream' media.

You can also paste up all sorts of other things: artwork, slogans, surreal messages, stories. Anything that puts an alternative point of view onto our streets is playing a valuable role in undermining the 'status quo', by challenging people's automatic acceptance of mainstream values.

You can make copies of things you like or design your own. If you are doing something that obviously comes from a particular group or organisation, remember to put 'not for flyposting' at the bottom of it.

You may have access to a flashy computer and high quality copying or you may be writing something by hand and copying it in a shop. Don't be ashamed to put up really rough-looking stuff. The important thing is getting the message across - and no-one knows it's you anyway!

Where?
Where you put your posters depends on what they are. Stuff with loads of information on needs to be where people are likely to read it all - bus shelters are good, but your poster won't stay up very long. Look out for old posters that are still up - a sure sign of a site with a long life. Show some respect to fellow flyposters and don't stick your stuff on top of theirs unless the event has already happened (unless they're a dodgy Nazi outfit, of course!). You may like to post your stuff over billboard adverts that you don't like - your poster may even be specially designed to go over particular adverts. Obviously though, don't post it anywhere anti-social (i.e. some person's house, car etc).

Be warned though, that if you start regularly posting up over the big music posters, you may end up getting a visit from some very unsavoury types - that operation is run by some very dodgy gangs who are not adverse to a bit of aggro if they think you're invading their 'patch'.

Our favourite spots include disused buildings, lampposts, tube stations, backs of buses (if you're cheeky enough!), street furniture, pub toilets. Be audacious! If you're targeting an individual corporation, stencilling the steps up to their office with your message is often a good way of reminding them of your cause!

The most important thing is to get the message out!

How to flypost
You need: wallpaper paste, a big paint brush (some people prefer rollers) and a bucket. Plastic bags are less obvious than a bucket, but make sure to use two or three bags - spilt paste can be very messy! Another very useful bit of kit is a bicycle - it's amazing how much more you get done!

It's best to post in pairs (or threes), so one can keep a lookout, Watch out also for closed circuit TV.

Remember that if you look shifty and nervous you will draw attention to yourselves - also being relaxed helps you appreciate just how much fun you are having,

Paste on the wall where the poster is going to go. Put the poster up, press it flat and then paste over it again. This helps to smooth out bubbles, and also makes it harder to rip the poster off.

Some people prefer to flypost in the dead of night, some do it in broad daylight. This depends a lot on the area you are in, it's up to you.

The law
In most areas there are local by-laws against flyposting. Breaking these by-laws is a criminal

offence, which means that if the police catch you, you can be arrested and charged and possibly end up in front of magistrate getting a small fine.

The Anti-Social Behaviour Act 2003 increases maximum fines from £1000 to £2500, with authorised council officials now able to issue £50 'on the spot' fines. Note that it's only the person caught flyposting that can get prosecuted, not the company or club advertised on the poster.

Make sure you've got some idea of your rights if you are arrested, just in case - this will make you feel a lot more confident dealing with the police.

Other ideas
Stickers: you can make these on a computer, or use sheets of stickers by drawing onto all the stickers on one sheet, then photocopying from that.

Stencils: Good for putting a message up quickly, Especially good for symbols/ logos/ pictures?. Best made out of lino to last a long time and stay flat easily.

Banners: Another handy method of drawing attention to your message is to paint up and old bedsheet and hang it from a busy footbridge (the pedestrian footbridge in Vauxhall, South London is especially good for this). Make sure that it's securely tied and that you won't be needing it for the night's kip!

Taken from urban75.com, edited by libcom

Graffiti guide

A beginners' guide to doing graffiti, covering paints, spraypaints, stencils, surfaces and general advice.

What you will need
Paint. Oh really. However, there are a fuck of a lot of different types of paint so here's a few pointers:

Brush paints
Come in several flavours. All of which are preferable to spray cans as they are not so environmentally damaging. We generally block the piece in using emulsion and then outline & highlight it using cans (if its in a dodgy place, or if its small) or more brush paint if we

have time. Emulsion (or any other water based paint) is crap in the rain. Otherwise, it lasts a fair while and you can spray on top of it while its still wet. This is very handy. Masonry paint has all these advantages, being a water based, but also lasts literally a lifetime. You can get the colour you want made up in shops. Emulsion tends to be in boring colours, but you can get fucking wicked coloured concentrated dyes from paint shops that will dye a swimming pool full of white emulsion pink/purple/whatever. Powder/poster paint also mixes with anything water based These are quite cheap to get hold of. Emulsion and masonry paint are quite easy to tat, from scrap stores or people who have been redecorating. Masonry paint is more expensive to buy than emulsion, twenty quid for five litres-ish.

Gloss
Lasts fucking ages and you can use it in the rain - but you can't spray over it till it dries (3 hours ish - come back tomorrow night) and you have to use white spirit to get rid of it / wash brushes. Beware, it can be very runny. Gloss is expensive if you buy it (six quid a litre ish? not sure) but easily tattable.

Spray cans
Make these plan B, coz they are seriously toxic and totally unrecycleable. But if you are painting in a busy place they are extremely quick (speshly if you are using stencils) and come in super sexy colours. They are also very clean, speshly if you wear gloves. Most car spray paints are crap. But there are bitumen based blacks and a few other colours designed to cover bodywork chips that cover well and the blacks do not come off. There is one particular make called stonechip that you can get in black and white that is very shexy. With a New York fat cap (see next section) it comes out nice and slow, never drips, covers everything and is perfect for outlines. Art sprays are hard-ish to get hold of and cost about £3.50 for a 400 ml can. You can get them in most large (UK) cities in record shops. Maybe its obvious, but spraying inside stinks.

Nozzles (caps)
Before you go out, make sure you've got the caps you need. Not having the right cap renders your spraycan useless. Fiddly little buggers. There are basically two types. Fat and skinny. Keep a few of each on you when you're out. Unfortunately all the makes of spray fit different caps. Working out which fits what is just trial and error. When you buy cans, get say five of each type that they sell (they're usually about 20p each) and experiment. When you buy art sprays, the nozzle they come with is usually fine, with car/plasticote sprays (not recommended anyway coz they're shit and really seriously poisonous to our planet) the nozzles are often crap. After using the can, either turn it upside down (so paint doesn't come out) and spray propellant through the cap to clear it, or take the cap off and blow through it. I prefer blowing coz it gives you multicoloured hard wearing lipstick. Some caps, for instance the New York skinny cap, don't fit on many cans because of a ridge of plastic about half way up the tube. You can shave this off with a craft knife to make 'em fit.

It is our mission to bring on roller use to the masses. Rollers are fucking cool. You can get 3/4 inch ones that are really good for smaller funky writing. Big ones are good for massive pieces. You don't really need a tray. Overalls are good though if you don't want to travel home covered in paint. Look after the rollers well, coz once they go hard you can't really use em.

Brushes
Are slow, so I don't use them so much (fiddly things, outlining, or alongside rollers if the surface is super uneven.) But there is one pixi who only ever uses a brush and it works fine anywhere thats not too on-top. Wicked for legal walls. Brushed graffiti looks super-cool I reckon. Fuck spray-paint snobs. Brushes are where its at.

Gloves
You can get latex ones from car part shops. You can nick not latex ones from hospitals. Remember to take them off after you've finished. I guess they're used to it, but if you forget you'll get funny looks when you're buying milk off the milkman at five in the morning.

Stencils
Easy to make from photocopies. Use acetate, card or lino, even thick paper and have some kind of folder to put them in (plastic folders are best as card sticks and rips easy). You'll need to gaffa them to the wall if you are on your own. Mind they don't stick to the folder when the paint is wet.

Pens
You can get wet chalk pens for writing on shop windows and black boards. They don't come of when they dry unless you scrubb 'em. We got them from friends working in offies. You can get them in motorists shops. They don't work at all in the wet, or on porous surfaces. Good for the inside of bus stops, sitex, that sort of thing. Worth carrying one around with you. Permanent markers work too, but they're small and generally black.

Surface/Location
You can paint on virtually anything, don't restrict yourself to walls and trains. Knowing which paint to use on which surface is trial and error. As a general guide though:

Concrete = Good. Its butt ugly anyway so you can't go wrong. Its also about the right smoothness and porousness. Spray paint will soak into very porous surfaces, so it is good to put a layer of emulsion on first as a primer.
Metal (trains, buses, sitex) = good. Watch for serious drippage though. Same with the shiny subway surfaces.

So far as locations go, be as imaginative and cheeky as possible. You might wanna do a quick piece where loads of people will see it, like a motorway bridge, or a more detailed piece where people will stop and have a look, like down an alley/carpark/river bridge. Try bus stops, cash points, bins, walls, pavements, garage doors, roofs, billboards, fur shops, posh hotels, embassies, McDonald's etc. etc. The more you have to pretend to be a ninja, the more fun it is. For example...some pixies snuck, (all the time pretending to be ninjas..) inside Campsfield Immigration Detention Centre and wrote "FREEDOM" on an inner wall facing the inmates sleeping quarters, some more wrote anti-nuke stuff all around the Aldermarston Military base.

Some hints
1) Take a mate. Its more fun, and then you have a lookout. Know what you're going to paint before you get there; you don't want to be hanging around trying to think of something. Sometimes it helps to carry a drawing around with you. If in doubt, have a few quickies in the back of your mind incase of mental block. Anti-war slogans, local campaigns, web addresses (URL's) are good. Organise yo'self, make sure you got all the nozzles, colour etc. and you know where they are. Remember something to open paint tins with. Don't paint too much stuff near your house. it'll make you paranoid.

2) It'll be dark when you're out. So write in big letters on your paint cans what colour it is. Saves lighter fuel.

3) Booze...get the mixture right. Too much alcohol and your piece will look shit. Whether or not you remember doing it, it'll still be there in the morning (in the busiest, CCTV'd, most on-top spot next to the cop shop on the high street..) and all your mates will know it was you. Live with the shame, or risk community service and go and paint over it tomorrow night.

4) One Crime at a time. I reckon this is a good tip if you don't wanna get pulled over for having no lights on yer bike when you're covered from head to foot in paint, carrying all your stencils and wearing latex housebreaking gloves. Might as well leave your drugs at home as well. Also, its a good idea to keep your house free of incriminating stuff, even sketches. Especially if your house is likely to get busted anyway. May sound paranoid, but people do get seriously nicked for painting sometimes. Years in a few cases. Even if you don't get charged you don't want the hassle of having the police kicking your door in at three in the morning. *Read our defendants' guide to arrest*

Taken from the Pinka Punka Pixies website
Edited by libcom

Guide to giving speeches and presentations

Tips and advice of public speaking, making speeches and giving presentations effectively.

Giving speeches and presentations is one of the most basic ways that an activist can communicate their ideas. Every activist should have at least a little experience with public speaking.

Speaking tips
Feeling some nervousness before giving a speech is natural and healthy. It shows you care about doing well. But, too much nervousness can be detrimental. Here's how you can control your nervousness and make effective, memorable presentations:

1. Know the room. Be familiar with the place in which you will speak. Arrive early, walk around the speaking area and try practicing using the microphone and any visual aids.

2. Know the audience. Greet some of the audience as they arrive. It's easier to speak to a group of friends than to a group of strangers.

3. Know your material. If you're not familiar with your material or are uncomfortable with it, your nervousness will increase. Practice your speech and revise it if necessary.

4. Relax. Ease tension by going for a walk, doing some basic stretching, chatting with colleagues.

5. Realise that people want you to succeed. Audiences want you to be interesting, stimulating, and informative. They don't want you to fail.

6. Don't apologise. If you mention your nervousness or apologise for any problems you think you have with your speech, you may be calling the audience's attention to something they hadn't noticed. Avoid pointing out your own imagined inadequacies, your audience has a higher opinion of you than you think.

7. Concentrate on the message - not the medium. Focus your attention away from your own anxieties, and outwardly toward your message and your audience. Your nervousness will dissipate.

8. Turn nervousness into positive energy. Harness your nervous energy and transform it into vitality and enthusiasm.

9. Gain experience. Experience builds confidence, which is the key to effective speaking.

Tips for handling Question and Answer sessions
If you don't hear the question or understand it, ask the questioner to repeat it.

1. Try to keep calm, even if your audience is hostile or upset.

2. Always respect the questioner, even if you do not like the question or the manner in which it is posed.

3. Don't feel offended if someone asks you a question that you feel you already answered in your presentation or a previous question, they may not have heard or understood the information previously presented.

4. Honesty is the best policy, if you don't know the answer to something, admit it - you can offer to get in contact the person later with an answer.

Excerpted by libcom from 10 Tips For Successful Public Speaking with modifications by Shawn Ewald and Handling Q & A.

Guide to setting up a local newsletter

A guide with tips and advice on how to set up a newsletter in your local area to cover issues that affect local residents.

Organise a meeting
You've talked about it down the pub with a few mates. You all think it's a great idea. There are a few more people you can think of who'd be interested. So just get on with it - it's not going to happen otherwise. Fix a date, time and venue (could be someone's house, it's not a public meeting). Leave other possibilities wide open. It's important for everyone to have had a say in the shaping of the project from the start.

Get it all sorted
There's no point in having your founding moment and then coming away having vaguely agreed to do something soon. Probably. When we've got our act together. The minimum you should have agreed is a name and address, which will in turn enable you to set up a building society account in your newsletter's name. We use a PO Box, which costs about fifty quid a year. We had to chip in up front to start it but donations over the next 12 months covered the

renewal (just). It would probably be better to have an actual local street address, not just to save cash but so people could drop stuff in by hand and bypass the official mail system.

Think of a good name
OK, maybe you can't take that advice from a group with a title like The Pork-Bolter. But it is a genuinely historical nickname for Worthing people and the piggie identity has provided us with hours of puns. The main requirements are that it should be a local name and that it shouldn't put people off reading your stuff by being too overtly political. This may not come naturally to most would-be rabble-rousers, but you are addressing ordinary people here and not fellow subversive scum. On the same lines, there is no need to invent a seperate name for the group producing the newsletter. It may well prove an own goal to declare that ON THE BOG - What's Going Down in Little Bogweed is published by the South Bogshire Emiliano Zapata Revolutionary Militia Propaganda Outreach Cell.

The nitty-gritty
Thinking of a name is the fun bit and may well take up 95% of your opening meeting (if you let it). But you've also got to start thinking about boring detail, like what size is the newsletter going to be, how often will it come out, how many will you get printed and so on. Without wanting to come across all sycophantic, we were greatly inspired by the Sch-you-know-who in our inception and had no qualms about blatantly copying their format. You'd be amazed at how much you can fit on a double-sided piece of A4. As far as frequency is concerned, once a month seems about right for us. Quantity is obviously limited by funds. Try getting 500 done to start with, then up it to 1,000 or more if your distribution is working. Another advantage of double-sided A4 format is that it is easy to photocopy and you may be able to supplement your print run with the help of office-worker volunteers (and various people will be busy copying and distributing them round their mates and colleagues who you won't even know about ...).

Printing
Cheap photocopying/printing is hard to come by, but very useful. Don't just rush out to the nearest High Street print shop. Ask around for ideas about cheaper options. Try your local student union or college print department or local resource centre. If all else fails, why not bring out the newsletter at whatever cost and appeal to readers for leads on cheaper printing. You never know who may come forward.

Paying for it
You'll probably find yourselves fulfilling this role. But spread between the group members it doesn't come to much. If you meet at someone's home instead of in the pub, you'll have probably paid for the next issue from what would have been spent at the bar. Other costs may well be covered by donations/subscriptions once you've got going.

Getting it out
Distribution is a piece of cake when it's free. It's just a question of getting them all out into the hands of the local population. You can do that most directly by standing in the town centre and thrusting them rudely into people's hands (with a smile on your face). And you can leave them in public places like the library and town hall (small amounts but frequently - they tend to get removed). Ask in shops if you can leave a pile on the counter. And in pubs. You'll be surprised at the positive reaction to a lively local newsletter. Keen people should also be able to subscribe for a small charge to cover postage (though since they're local you could drop them in by hand and save the stamp).

Contents
You'd forgotten about that small detail, hadn't you? What do you put in the bloody thing? This should not really be a problem for anyone who's got as far as even thinking about doing

a newsletter. First of all you read all the mainstream local papers. And then you get very angry with all the stuff the council's up to and the MP is spouting on about. And then you don't just forget about it and resolve not to read annoying local papers anymore, but instead you cut out the relevant bits and bring them along to the next newsletter meeting. And everyone else says how crap the council is and takes the piss a bit and someone else has cut a bit out of The Big Issue which sort of fits in. Meanwhile, a person with biro-manipulating skills writes down the best bits. And lo, the contents start to emerge. Add in your own little campaigns (anti-GM, anti-CCTV, anti-negative attitudes etc), plus titbits about worthy local groups (Friends of the Earth, animal welfare, etc, etc) and you've got a newsletter.

Campaigns
Gives a positive focus amidst all the sniping from the sidelines. But obviously depends on what's happening locally. And what you're into.

Keep it local
Forget the recommendation to act locally and think globally. You have to start thinking locally as well. Only then can you go on to draw your political conclusions. For instance, trying to persuade people here that global capitalism is a bad thing because it is destroying the Amazon rainforests is a waste of time. But talk to them about the way that money-grabbing property developers are allowed to build all over green spaces on the edge of your town and your readers will understand why you then call for an end to the rule of greed and money over people and countryside. In your newsletter your views can clearly be seen as common sense. You are normal and the council/property developers/government are the outsiders - reversing the way radical views are conventionally presented. Use words like 'we' and 'our' a lot.

Have a laugh
A jokey approach makes people read your newsletter and explodes certain ill-founded stereotypes about types involved in radical political initiatives. Could be a problem, though, if your group does in fact happen to be entirely composed of humourless left-wing gits.

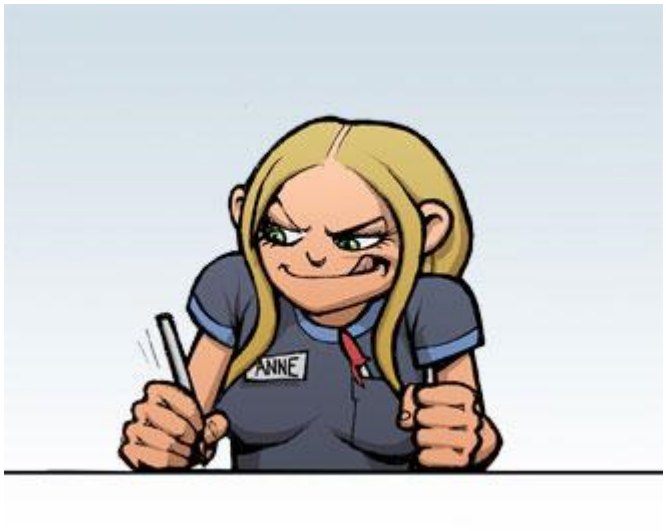
Law-abiding
Remember that you can get done for libel if you make certain claims about individuals. Get round this with humourous digs and heavy use of satire and sarcasm (think Private Eye, Have I Got News For You, etc). It is worth knowing that you cannot libel a council - so go for it!

Media
You yourselves are the new media for the town, so you don't need to worry about publicity. But if they want to give a rival organ a boost, that's just dandy.

Carry on publishing
There will be ups and downs. New people will join your circle. Others will drift away. It might seem like nobody's taking any notice of you at all. But in fact your subversive message will be permeating the very fabric of your community. It's got to be worth it.

From The Pork-Bolter, Worthing, UK

Guide to starting your own zine



Tips and advice on starting a zine-style publication, from format and content to distribution and finance.

Are you ready to do a zine?
This is probably the most important question you should ask yourself when you're considering doing a zine -- are you really ready to do one? Doing a zine can take up a lot of your time and become a big responsibility. There's no reason that you should have to do a whole zine -- if you aren't sure you can handle a zine on your own, consider maybe contributing to zines that you like or getting a couple friends to do one with you.

Also, just because anyone can do a zine doesn't mean they should. Not everyone is suited to the kind of work that goes into zines, and there's a lot of forms of creativity that just don't translate well into a zine. That said, if you have a lot of ideas and you think this is the way you want to express them, here's how to do it!

Content
What kind of stuff will be in your zine? Obviously, before you start actually making up pages you need to have some idea what you're going to put on them. Start collecting clipped stuff, pictures, notes on things you want to write. Your zine can be about any subject you want (or all the subjects you want). Once you've decided what you're going to put in your zine, start working on it -- it's a lot easier to do a zine with a bunch of work you've already finished than to try and do one from scratch.

Size and format
Once you've decided what you're going to put in your zine, you need to decide what it's going to look like – what size, and what format you'll do it in.

There are lots of formats to do a zine in. As you order zines, you'll see that some people use "nicer" printing methods -- better paper, or color. But for a first zine, your best bet is photo-coping. It's easy, you can make up copies as you need them (instead of having them all sit in piles in your closet) and the art looks clean because of the white paper. Half-size zines like this look nice, especially if they're stapled properly. You also can experiment with colored paper for the whole thing or the cover, or even an insert. The two bad things about photocopying: Collating (putting the Xeroxed pages in order) can be a real pain (a zine I worked on once had 24 full-size pages, and we made 500 copies -- it took FOREVER to put them together), and if you have a lot of pages it can get very expensive. The biggest advantage is that you can put out a zine like this with practically no money -- just get a few copies together at a time, after you get an order with money in it.

When you're copying your pages, you can do almost any size zine -- the folded-in-half size is pretty much the standard. You can also do full pages and just staple them together, or even do the pages on 11" x 17", fold them in half and staple, and voila! a zine that looks printed. Other variations I've seen: legal-size Xeroxes folded in half (makes a squarish zine) and pages that have been folded in quarters and even sixths, stapled and trimmed to make mini-zines. Remember that the size page you use will affect the number of pages in your zine -- if you do a half-size zine, every double-sided copy = 4 zine pages, so you have to have a page count that you can divide by four (8, 16, 24, etc.).

Plan on starting small -- start off with an issue with a really low page count to save money, and if you get enough to put out future issues, then start adding pages. One girl I know does incredibly tiny Xeroxed zines, but she also does a new one every time she has something new to say or show, whether it's a week later or a month. A zine doesn't have to be big to be good, that's for sure.

Layout

Once you've decided what's going into the zine, you can start worrying about making up your pages. You don't have to make the pages in the correct order, but you do need to make them the correct size. Make up a bunch of "flats" (base pages you glue everything up on) -- you can use any kind of paper for this. (If you are doing a full-size zine you might want to consider a heavy paper, like card stock, for the base.) Make the pages the size of your zine pages -- if it's a half-size zine just cut 8-1/2" x 11" paper in half, and so on. Number the pages on the back or right on the flats if you want page numbers in your zine. When that's all done, you can paste up anything you want onto the pages. (Keep in mind that a Xerox machine will cut off about 1/8-1/4" on the edges, so don't put anything important too near the sides.)

Next figure out how many pages you're going to have, and start working out what you want to put on each page. If your zine is full size, it's pretty simple, but if it's a half-sized zine, you're going to have to lay them out and copy them in the right order for them to come out the way you want. The easiest way to do this is to make up a blank zine, the length that yours is going to be. Fold the pages in half and make it the same size as yours. Go from front to back like you're reading it, and number the pages as you go. You can also make notes on what you want to put on each page. When you're finished making up all your individual pages, you can take it apart, and just glue the flats down on the blank numbered pages wherever you want them to go. Now you have a double-sided original, which will make it easier to remember how to Xerox them.

The stuff on the pages

Text

The text (writing) in your zine can be done any way you want -- from handwritten to nicely typeset.

Handwriting is an option if your handwriting is VERY legible (ask someone else if you aren't sure how legible it is) and you use a good black pen. Don't use colored pens, and never use a ball-point. Typing on anything from an old manual typewriter to some spiffy new electronic one will always work. Try marking the outline of the area you want filled with type in pencil on a regular size sheet of paper, and then type directly on it, following the outline. Then erase the pencil, cut it out and paste down. And if you have access to a desktop computer or even a good word processor (if you don't know anyone with one, try school) you can actually typeset stuff for your zine.

Art

As far as art goes, anything that's black and white (even if the "white" part is grayish or yellowed), like drawings or stuff you've cut out of magazines, will usually come out just fine.

You can photocopy most colors, too -- try different things out. And you can copy almost anything to make a background pattern -- I've put half my clothes on a copying machine at one time or another. Experiment! One of the big advantages to photocopying is that you can reproduce so many things with no extra cost or effort.

Photos

Photographs should be black and white, although most color pictures will reproduce okay. Again, you'll have to experiment. They should be as focused and clear as possible. You can either paste the actual photo into place if it's the right size, or you can Xerox it and paste the Xerox into your page. If you want them to really look like photos, you can get a "half-tone" made. A half-tone makes a "continuous-tone image" (like a photo or pencil drawing, things with grays in them) into a black-and-white dot pattern that looks like a photo, but actually isn't. If you look closely at any (black and white) photo in a newspaper, you'll see that they are really made up of a lot of little dots. Halftones should be pretty easy for you to get, but they usually aren't cheap. The best thing would be to look in the yellow pages -- try printers, graphics, maybe advertising production if they have it. Any place that says it has "full production services" is a very likely bet. Spend an afternoon calling them up and asking if they do halftones. Most of them will say no, but in case you find a lot, ask them a test price -- ask them how much, say, a 8" x 10" 85-line-screen halftone would cost. Then of course pick the cheapest and closest place you found. Or if a place seemed really friendly or helpful, it might be worth a little extra to go there. (An 85-line-screen means that the piece of equipment they use to make the half-tone has 85 lines per inch -- there's actually 85 rows of dots in each inch of the screen.) But when Xeroxing, you can use a finer or a coarser screen -- a finer screen would look more like a photo, but it might not reproduce as well. If you wanted a big dot effect you could get one done on a coarser screen, they usually go down to 45-line screens at most places. Ask them to show you some examples. Also, if you have access to someone's computer with a scanner, you can scan in the photos and print out a half-tone. Not quite as perfect, but a lot cheaper!

Pasting up pages

Once you've got all your contents organized and ready to be put together, start pasting up the pages (gluing everything down) one at a time. Don't feel rushed, you can do it in fits and starts for as long as you want – you're not on a deadline here.

You can use scissors to cut things out, or move up to x-acto knives (special knives for doing crafts and things -- you've probably seen one before, all office supply stores have them). I personally recommend the "X-ACTO gripster", which has a rubber coating on the part you hold. They're much cooler. When you cut things with an x-acto, put the paper you're cutting on top of a piece of cardboard or something similar. It keeps you from cutting up the tabletop, and also makes the cutting much easier.

Paste things down with glue sticks (you can get these from any office supply also -- I recommend the purple-tinted UHU glue stick, it's my favorite), not a regular glue like Elmer's or something -- those wet glues will make the paper buckle up really bad. Make sure you give whatever you're gluing down a good coat or it might fall off when it dries! Once you've put something down on your flat you can wiggle it around and even peel it back up if you have to, but only for about the first 10 seconds. Be careful! Make sure you're putting things where you want them. Be neat or be sloppy -- look at other zines to get inspired.

When you've finished up the individual pages, you need to get them ready to copy. If your zine is full-sized, all you have to do is put them in order. If it's half-sized (or some other wacky size), you're going to have to make originals that are the same size as the paper you're

copying them onto, and in the correct order. Follow the directions under "LAYOUT" to make up your originals.

Printing (i.e. photocopying)
Once your originals are completely finished, you can go get your double-sided copies made. (If you do not have double sided originals, be very clear when placing your order if you don't do the copies yourself.) Do as many as you think you'll need, but don't feel like you have to make too many. You can always get more done. Plus, it's easier to collate smaller numbers at a time. Once you've got your copies back, you need to collate them (put them in order), and fasten them somehow. You can staple them together, leave the pages loose but folded in the right order, punch holes in the center and tie them together -- or come up with something entirely new. (A lot of people ask how you staple a big zine right in the center -- the secret is a long-reach stapler that is at least 12" long. A lot of copy shops have one available for people to use, and if you're going to be doing a lot of zines, you can find them at any big office supply place.) All done? Voila! You are a proud parent.

Finance - budgeting your zine
I'd say that money is a consideration for almost everyone doing zines (unless you're independently wealthy or you work at a Kinko's). With your zine do you expect to: (A) lose money; (B) break even; or, (C) make a little money? If you expect to make a little money, well, think again. If you expect to lose money (not much of course), good for you. I lose money on most of my projects. But I consider the non-financial rewards to be more than worth it. (What are they, you ask? Well, mail, other zines, positive feedback, new friends, stuff like that...) And if you want to break even, well, you've got a really good chance!

You need to figure out a balance between your cost and your price -- you don't want to charge too much, but you don't want to go totally broke either. Your cost will obviously depend on the number of pages in your zine. Your price should be as low as you can afford, and will depend on your distribution. Keep in mind that $1 is a standard zine price -- if you're charging $3 (even if that's your cost), a lot of people simply won't risk $3 on something they've never seen before. Keep your zine small and keep the price low.

For example, a typical half-size zine, at 20 pages (5 double-sided Xeroxes) will cost you 65¢ at Kinko's (if you find a cheaper place, use it!!) If you charge $1 for it, you'll make a little money when you sell it in person, break even if you sell it in a store, and lose a little bit when you mail it. It should come out about even. If your zine's a little bigger, you might want to put $1 on the cover, and charge $1 + postage by mail. Like I said, sell it for as little as you possibly can -- and when pricing it you should also take into consideration how many you plan on doing. Losing 25¢ each on 50 copies is a few day's lunch money. But 25¢ each on hundreds of copies could break you for sure.

Distribution
There are several ways to get a zine out into the world, including: giving out/selling copies yourself (at shows or school or whatever); doing mail-order yourself; having other mail-order/distribution places handle copies; and, selling it in stores.

Distributing it yourself involves two possibilities, doing it in person or through the mail. In person you have the most options, you can sell it or give it away, and even sell it to some people and give it to others. Doing mail-order yourself is the most popular approach by far -- you need to figure out a price that will include postage and then get exposure for your zine through ads and reviews. (You can either charge the cover price, or add extra for shipping. A lot of zines will make it on one 32-cent stamp, others need 55-cents postage. Take a copy, or a blank one of the same weight, down to the post office and find out.)

Selling directly to stores (or more likely, putting on consignment) is also an option. Any store that you or a friend can get to (on a regular basis) is a good place to try and put copies on consignment. You may have to negotiate the amount with each store individually, but you should get 60-75% of the cover price. Don't take less than 50%, ever. You'll have to make up a consignment slip and have it signed by someone with authority, unless they have one already. Usually you set a time limit on the consignment, and at the end of that time, they have to give you money for all the copies they don't have and give you back whatever's left. But you can work this out depending on your relationship with the store. There's lots of combinations of this depending on what you can afford and how into it you are. You could give it away locally in stores or at shows, but charge for it by mail. Or only do it by mail. Do whatever you feel comfortable with.

Getting exposure
If you're selling your zine by mail, there are two ways to get people to order: through ads and through reviews.

Ads are always good. A lot of smaller zines will trade ads for free, and classified ads in bigger zines can get a really good response.

Reviews are very important -- not only can you get orders from them, but good reviews will help you get ads, distributors and encourage people to pick your zine up if they see it somewhere. Other places you send copies to will be determined by the content of your zine. Judge for yourself whether you think the readers of a particular publication would be likely to like your zine. When sending a review copy, it's a MUST to attach/enclose a note which clearly states your name, the name of the zine, your address, and mail-order price of the zine.

Trade copies with other small zines like yours, especially if they list other zine addresses. (And list addresses of zines you like in return.)

Whatever you decide to do, remember that this is supposed to be FUN. If you start getting burnt out, or sick of doing zines, then stop. Fill your orders, but don't feel like you have to keep putting out new issues. If you want to change the name or content of your zine, go right ahead! There are no rules -- you can do whatever you want!

By Sarah Dyer

Interview conducting guide

Tips and advice on carrying out interviews with people for articles, publications, books, etc.

Interviews can be a useful tool to aid publishing and media efforts. Think of them as an opportunity to get information you don't already know. It is a particularly useful way of relieving the pressure on people intensely involved in a particular struggle who don't have the time to report on their activities and perspectives.

You should research your subject first. It may be that your interviewee is a shop steward in a workplace on strike, or was active in the Miners Support Group in your town in the 1980s.

Research this first so that you are sure you are asking appropriate questions. Leave them open - this means you should avoid questions that can be answered yes or no. An example:

Avoid: Did you support the printers at Wapping?
Instead use: How did you support the printers at Wapping?

The second example will lead into specific activities - and some of these may be particularly interesting. For example, Albert Meltzer, then a few years off retirement and active in the print-workers union, had his car "break down" in the road leading up to Wapping, thus blocking the scab lorries. Only the second approach would have revealed this. And of course, be prepared that your interview might go off on tangents! Interviewees will regularly say something you weren't expecting or need to know more about.

Try to put the interviewee at their ease. Be relaxed - someone is far more likely to say something interesting or new if they are feeling comfortable. You should also be careful about anything that might be incriminating or put others at risk.

There may be times when you are doing a hostile interview, or one with someone who you might be critical of (an anarchist who is standing for election, for example), be particularly probing on areas you think are weaknesses. However, don't let your criticisms derail the interview - if anything plan it so that the uncritical stuff comes first.

If interviewing someone in person, as opposed to by email it is a good idea to record it - particularly if it is one done on the spur of the moment. Unless you can do proper shorthand, you will find a dictaphone, tape-or digital recorder useful. You should get the interviewee to agree to be recorded. I once did an interview on a demo by scribbling it down on a pad but it's not a method I would recommend.

Interviews should be written up as they occurred and then use this as the basis for the final article to be published. Even a straight question and answer format will benefit from this. Think about whether the interview is for publication or for background research. A longer article can quote from the interview. The original transcript should be kept - both in case there are challenges to your reporting and as a part of general working class oral history. (The KSL, website below, would welcome such transcripts as an aid to research - see the oral history article).

Suitable people to interview include:
* Participants in specific struggles, past and present. This is particularly the case if you are writing an article about something in the past.
* People with expertise in an area of knowledge - e.g. an anarchist midwife about proposed changes to maternity wards, a railway engineer about a train crash, an ecologist about the impact of a new road.
* Political opponents - within specific struggles and possibly generally if there is a good angle.

I hope this has fired your interest in talking to people about their experiences and finding out more.

By Martin H , the Kate Sharpley Library

News report writing guide

A guide to writing news stories for the independent and alternative media.

The first thing to remember about reporting for a libertarian or anarchist newspaper or magazine is that it is **not** propaganda.

Western consumers are far too media savvy to put up with preachy, badly written rhetoric. If you want to spread the word (hallelujah) then fine, go down the pub or knock on doors and ask people if they've heard the good news yet. Don't waste time writing it down and sending it to newspapers.

The only thing between us and the mainstream media is that we are out to tell the truth, and they are mostly out to obscure it. Don't waste that basic strength by muddying the waters with excessive comment.

With any publication though, a certain amount of bias is inevitable - that's why we wear our ideology on our sleeve. Media audiences all understand this, and if we wish to make an impact with what we write it must be able to stand up to the scrutiny of cynics and people looking to find fault. That means it must be fact, not opinion.

Have confidence enough to let people make their own conclusions.

With this in mind, here are some basic tips for reporting technique:

Questions

There are six questions every journalist should ask about every news story. Who, What, When, Where, Why and How. The most important of these is Why, but find out the other stuff first, as it is the basis for all further questions.

Think about the angle you want to come at it from. For instance, 2 million people are starving in the UK. Possible angles: UK government/society is letting down the elderly, a tragic but unavoidable loss, two million homes may be freed up for young families etc...

Any of these can be made into articles, but it is important to know where you are coming from when you make up your list of questions.

Motive is vitally important when talking about any misdeeds, and given the subject matter, your subject's motives will almost invariably be money and power.

Follow those and read other lefties who have written about it - there often are some - and it will give you an idea of what other questions to ask.

Always get paper, wherever you go. Contact numbers, official documents, stuff lying on the table where it shouldn't be, all of it. The more facts you have that have been written down, the better able you will be to justify the article you've written.

Record conversations, either in written form, or via a tape recorder. Preferably both. The UK has the toughest libel law in the world and if you are trying to get into print in any paper with a circulation in four figures this becomes an all-important factor. I'll be writing about the basics of the law later, but remember the only sure-fire defence against libel is provable truth.

Research
Above all, don't fall into the trap of finding an easy answer which fits into your world view and then writing it up as unassailable fact. Dig, dig and dig some more. You aren't writing this for a wage and you don't have an editor forcing you to get as many stories done as possible.

There is no excuse for laziness in your research (though equally, if you have a deadline for Christ's sake stick to it, there's nothing worse for an editor than slotting in an article to the paper and then being let down).

One of the famous phrases that hover around in even mainstream circles is 'If you're not pissing someone off, you aren't doing it properly'. The other phrase is 'a good journalist has a little literary ability, a plausible manner and ratlike cunning'.

Both make a good point. Don't get put off by someone making an angry denial, that just means either you haven't got your facts straight (so here's their chance to correct you) or you're on to something.

Equally don't go in with all guns blazing looking for a fight, people will always be more likely to talk to you if they think you're on their side.

Pictures
If possible, always take or find a picture of the event you are reporting on. Pictures sell papers, and not just that, they give readers a much clearer view of what you are talking about. Where you can, have a camera with you at all times, preferably digital (for easier storage, transfer and not insignificantly, so you don't have to get worrying photos developed). Try and get wide angle shots so the sub-editor has more to work with, and a high pixel resolution so it’s big enough to look good on a page.

Court reporting
Do not report on active court proceedings unless you have taken an NCTJ or media law course, or have learned the ropes thoroughly from someone extremely experienced. It can end up putting you, the paper publishing you and their distributors into bankruptcy. You can even end up in jail if you don't know what you're doing.

Writing with structure
Once you have all the relevant information, the structure of the story is very important. Most professionals have a mental checklist:

First paragraph: A very quick summation of the story (less than 3 lines for libcom.org/news), including the 'hook' (the most interesting part of the story, the gimmick that makes it newsworthy).
Second paragraph: Explanation of basic facts.
Third paragraph: For preference, a quote from a source who is likely to know what they're talking about (this is to supplement the fact you are a journalist, not an expert in the issue you're reporting on).
Fourth paragraph: More information and introduction of the other side - there **always** is one.
Fifth paragraph: Quote from the other person.

Subsequent paragraphs can have more quotes or info depending on the story, but **always** order it in descending level of importance/interest. Editors cut from the bottom up, and people read from the top down.

Depending on the importance of the story it will warrant more or less attention. The current policy of Freedom is to give Features anything from 1,200-1,500 words, Headline articles and leads 600, Page second stories 450, page thirds 300 and Nibs (news in brief) 100-150.

However if and when the paper changes to become a tabloid format, these numbers are likely to drop.

Be concise. If a story can be adequately explained in 50 words, then do so. A good exercise is looking at news articles in the papers and working out how you could sum them up in ten words.

Audience
Sad but true, most people rank their interest in the news as follows: 10,000 dead on another continent = 1,000 dead on the same continent = 100 dead in your country = 10 dead in your county = 1 celebrity eating grubs in a jungle. We can probably disregard the last bit, as it's far better covered by the mainstream press but the rest is still, unfortunately, relevant. The more local it is, the more interested people will be.

People in general expect a certain style of writing from newspapers.

This doesn't mean writing in stereotypes and clichés, it means not using long words when short ones will do (that's not a patronising attitude, it's just polite, I absolutely hate it when I have to translate from 'clever' to layman's terms - why say 'endeavour' when you can say 'try'?).

More specifically, your writing style and tone should be aimed squarely at the market you are trying to capture. Freedom currently aims at people used to reading lengthier, more informative pieces, but has been looking to shorten at least some of its articles to accommodate a wider audience (hence the nibs section for example on page 2).

To get an idea of the audience you want to try for, read the mainstream press. They're arseholes, but they've been refining their techniques, with a great deal of thought, money and effort, for 150 years. The UK press know how to get a point across better than anyone else on the planet. We are up against a massively well-oiled media machine, which cannot be dismissed. They have all the funds, all the manpower, the backing of every major business and every governmental source. Don't, whatever you do, dismiss them as a load of crap.

Epilogue
This is all dependent on you personally having the confidence to research and write about subjects you are interested in. The Freedom collective is made up of only four or five regulars working every other Sunday, and we have full-time jobs.

As has been sharply demonstrated by the crisis at Black Flag and the lack of interested faces at the Book fair's editorial meeting last year, anarchism's alternative media is in desperate need of more help, or it simply will not survive.

Taken from the Freedom newspaper 'Welcome Pack'

Pirate radio guide

A technical primer and guide with advice about micropower broadcasting and other aspects of running a pirate radio station.

Many people still assume that an FM broadcast station consists of rooms full of equipment costing tens of thousands of dollars. The Micropower Broadcasting, Free Radio Movement has shown this to be untrue.

Micropower broadcasting uses FM transmitters whose power output is in the range of 1/2 to 40 watts. Such transmitters have a physical size that is not greater than that of your average brick. These transmitters combined with other equipment including inexpensive audio mixers, consumer audio gear, a power supply, filter and antenna enable any community to put its own voice on the air at an average cost of $1000-$1500. This is far more affordable than the tens or hundreds of thousands required by the current FCC regulatory structure.

All of the technical aspects of putting together a micropower broadcasting station are covered in the following material. It is important to note that the main argument the FCC uses against micropower broadcasting is the issue of interference with other broadcast services. Interference is a valid concern. By using equipment that is frequency stable and properly fitted with harmonic suppression filters along with good operating procedures and standards, the FCC's argument can be effectively neutralized.

Further, the technical aspects of micropower broadcasting require some basic knowledge in the areas of electronics and broadcast practices. Hopefully, this primer will be able to convey some of this knowledge to you. If you are unsure of your abilities try to find someone who has the technical experience to help you. It is hoped that as this movement grows a network of people with the required technical skills will be formed to assist in the process of empowering every community with its own voice. If you are a person with engineering or technical experience, please contact Free Radio Berkeley to become part of this network.

Finding a frequency

Before you can proceed any further you must determine if there are any available frequencies in your area. Due to frequency congestion in the large urban metroplexes such as London, Paris, LA, NYC, etc. this may be a bit difficult. You will need several items to do a frequency search: a listing of the all the FM radio stations within a 50-70 mile radius of your area; and a digitally tuned radio. There are several databases on the world wide web which can be searched for FM radio stations in any given area. Here is one: www.airwaves.com/fccdb.html

Channel separation is the biggest problem. FM broadcast frequencies are assigned a frequency channel 200 kilohertz wide. Good broadcasting practice requires that at least one channel of separation must exist on either side of the frequency you intend to use. In other words, if you have picked out 90.5 as a possible frequency then 90.3 and 90.7 should be clear of any receivable signals. This is why a digital receiver is an important item for the frequency search.

Once you have a complete listing of all the FM radio stations look for possible frequencies with the appropriate channel spacing. Depending on topography, distance and the output power of the other stations certain "used" frequencies may in fact be open. Compile a list of the possible frequencies. Then, using a digital FM receiver with an external antenna, scan and check these frequencies. Do this from a number of locations and at varied times within the area you propose to cover. In most cases weak, intermittent, or static filled signals can be ignored and counted as either usable or providing the necessary channel separation. Hopefully you will find at least one or two usable frequencies. If you live in a more rural area or some distance from a large urban area, finding a usable frequency should not be very difficult. 87.9 can be used as a frequency under two conditions. One, if there is not an existing station on 88.1, and two if there is not a TV Channel 6 being used in your area.

After compiling your list of possible frequencies have your friends check them out on their receivers or radios as well. It is helpful to do since a variety of different receivers will more accurately reflect the listening conditions in your area. After all of this you should have a workable list of frequencies to use.

Location of studio and transmitter

Before you set up the station an adequate location must be found. Since the antenna will be there as well a site with adequate elevation is required. Ideally the top of a hill or a spot somewhere on the side of hill overlooking the area of coverage is best. FM transmission is "line of sight" the transmitting antenna and receiving antenna must be able to "see" each other. Therefore, any large obstructions will have a tendency to block the signal path. Keep this in mind when choosing your location. If your site is a 1 to 3 story building, a 30 foot push up style mast attached and guyed to the roof or a TV antenna style tower bracketed to the side of the building will be needed to provide adequate height for the antenna. At the very least you need to have the antenna at least 40-50 feet above the ground. In some areas a building permit may be needed to attach a mast or tower to a building.

It is good practice to keep the transmitter some distance from the audio studio since the radio frequency emissions from the transmitter can get into the audio equipment and cause noise and hum. Your transmitter should be set up in another room, attic space, etc. as close to the antenna as possible. Keep the distance from the transmitter to antenna as short as possible to minimize signal loss in the coaxial cable feeding the antenna. These are some of the basic issues regarding site selection. Landlords, room mates, leases etc. are your problem.

FM transmitters

FM is an abbreviation for Frequency Modulation. Modulation is how information is imparted to a radio frequency signal. In the case of FM the audio signal modulates what is called the carrier frequency (which is the frequency of the broadcast signal) by causing it to shift up and down ever so slightly in response to the level of the audio signal. An FM radio receives this signal and extracts the audio information from the radio frequency carrier by a process called demodulation.

Modulation of the signal takes place within the FM broadcast transmitter. The transmitter consists of several different sections: the oscillator, phase locked loop, and gain stages. Generation of the broadcast carrier frequency is the responsibility of the oscillator section. Tuning (as distinct from modulation) or changing the frequency of the oscillator section is either done electronically or manually. For a practical radio station that will be operated for more than a few minutes, it is almost essential to have the tuning done under electronic control since free running or manually tuned oscillators will drift in frequency due to temperature and inherent design limitations. This is an important consideration is selecting a transmitter. Since one of the goals is to deprive the FCC of technical objections to micropower broadcasting it is critical to have transmitters that stay on frequency and do not drift. This, of course, rules out using transmitters based on free running oscillators.

Frequency control brings us to the next section. Oscillator frequency drift is corrected by a circuit known as a phase lock loop (PLL) controller. In essence, it compares the output frequency of the oscillator to a reference frequency. When the frequency starts to drift it applies a correction voltage to the oscillator which is voltage tuned, keeping it locked to the desired frequency. In a PLL circuit the frequency is selected by setting a series of small switches either on or off according to the frequency setting chart that comes with the transmitter. In some cases the switch array may be replaced by 4 dial-up switches that show a number for the FM frequency of transmission, i.e. 100.1 for 100.1 MHz. Even simpler, some units have a display like a digital radio with up and down buttons for changing frequency.

One part of the oscillator section, the voltage tuning circuit, serves a dual purpose. As described above it allows the oscillator to be electronically tuned. In addition, it is the means by which the broadcast carrier frequency is modulated by an audio signal. When the audio signal is applied to this section the variations in the audio signal voltage will cause the frequency of the oscillator to shift up and down. Frequency shifts brought about by audio modulation are ignored by the PLL controller due to the inherent nature of the circuit design. It is important not to over modulate the transmitter by applying an audio signal whose level is too great. Many transmitters are equipped with an input level control which allows one to adjust the degree of modulation. Further control of the audio level is provided by a compressor/limiter which is discussed in the studio section.

As the modulation level increases the amount of space occupied by the FM signal grows as well. It must be kept within a certain boundary or interference with adjacent FM broadcast channels will result. FCC regulations stipulate a maximum spread of plus or minus 75,000 cycles centered about the carrier frequency. Each FM channel is 200,000 cycles wide. Over modulation- the spreading of the broadcast signal beyond these boundaries- is known as splatter and must be avoided by controlling the modulation level. As a result the signal will be distorted and interference with adjacent channels will take place.

Following the oscillator section are a series of gain stages which buffer and amplify the signal, bringing it to a sufficient strength for FM broadcast purposes. In most cases this will be 1/2 to 1 watt of output power. This level is sufficient for a broadcast radius of 1-2 miles depending on circumstances. For increased power a separate amplifier or series of amplifiers are used to raise the power level even higher. Amplifiers are covered in the next part of this primer.

Transmitters are available in kit form from a number of different sources including Free Radio Berkeley,

Progressive Concepts, Panaxis and Ramsey. Assembly requires a fair degree of technical skill and knowledge in most cases. Free Radio Berkeley offers an almost fully assembled 1/2 watt PLL transmitter kit requiring a minimal amount of assembly. Kits from Ramsey are rather debatable in terms of broadcast quality. An English firm Veronica makes some rather nice kits as well.

Amplifiers

Although 1/2 to 1 watt may be perfectly adequate for very localized neighborhood radio coverage, higher power will be required to cover larger areas such as a town or a portion of a large urban area. In order to increase the output power of a low power FM exciter or transmitter an amplifier or series of amplifiers are connected to the output of the transmitter. Amplifiers are also referred to as amps, and should not be confused with the unit of current also called amps.

Amplifiers are much simpler in design and construction than a transmitter. Most of the amplifiers used in micropower broadcasting employ only one active device, an RF power transistor, per stage of amplification.

By convention most broadcast amplifiers have an input and output impedance of 50 ohms. This is similar to audio speakers having an impedance between 4 and 8 ohms. When an RF amplifier with a 50 ohm input impedance is attached to the 50 ohm output impedance of a transmitter this matching of impedances assures a maximum flow of electrical energy or power between the two units.

A mismatch between any elements in the chain from transmitter to amplifier to filter to antenna will reduce the efficiency of the entire system and may result in damage if the

difference is rather large. Imagine the results if a high pressure water pipe 4 inches in diameter is forced to feed into a 1/2" water pipe with no decrease in the action of the pump feeding the 4 inch pipe. In an RF amplifier the RF power transistor will heat up and self-destruct under analogous conditions.

An RF power amplifier consists of an RF power transistor and a handful of passive components, usually capacitors and inductors which are connected in a particular topology that transforms the 50 ohm input and output impedances of the amplifier to the much lower input and output impedances of the RF power transistor. Detailed circuit theory of this interaction between the components is not covered in this primer.

Amplifiers can be categorized as either narrow band or broad band. Narrow band amplifiers are tuned to one specific frequency. Broad band amplifiers are able to work over a specified range of frequencies. without tuning. Most of the amplifiers that have been used in micropower broadcasting are of the first type. A tunable amplifier can be a bit of a problem for those without much experience. In a typical tuned stage amplifier there will be two tuning capacitors in the input stage and two more in the output stage. If not correctly adjusted the transistor can produce unwanted sideband spurs at other frequencies both within and outside of the FM band.

To make set up easier for the average micropower broadcaster a broad band amplifier is preferable or one with a minimal amount of tuning stages. Several designs are available. One rather popular one is a 20-24 watt amplifier using a Phillips BGY33 broad band power amplifier module. It is a rather rugged device that requires no tuning and produces a full 20-24 watts output for 250 milliwatts of drive from the transmitter. Free Radio Berkeley has a kit based on this device. This kit includes an output filter as well which other vendors may not include in their kits. Regardless of the source, the BGY33 is not the most efficient device and requires a good sized heat sink for proper dissipation of heat, and the use of a cooling fan is strongly suggested as well.

If you buy a kit or transmitter package based on this device be certain to determine from the manufacturer that the BGY33 is mounted directly to the heat sink, not to a chassis panel with a heat sink on the other side of the chassis panel. It must directly contact the heat sink with a layer of heat sink heat compound between the module mounting flange and the heat sink surface.

Broad band designs are not as a common due to the degree of design experience required to create a functional unit. It seems a number of kit providers are content not to optimize and improve their amplifier designs. Free Radio Berkeley is now offering amplifiers that are either no tune or minimal tune designs in several different ranges of power. Certain broad band designs may be too wide in their range of frequency coverage and will amplify the harmonics equally well. For FM broadcast purposes the width of frequency coverage should be for only the FM band, about 20-25 Megahertz wide.

Selecting the right amount of power is rather important since you should only use enough power to cover the desired area. Unfortunately there is not an easy answer to the question of how much area a certain amount of power cover. Antenna height is very critical, 5 watts at 50 feet will not go as far as 5 watts at 500 feet.

Assuming you do not have a 10 story building or a convenient 500 foot hill to site your antenna and transmitter on, experience in urban environments has yielded the following rough guidelines. With based an antenna approximately 50 feet above the ground. 1/2 to 1 watt will yield an effective range of 1 to 3 miles, 5-6 watts will cover out to about 1-5 miles, 10-15 watts will cover up to 8 miles, 20-24 watts will cover up to 10-12 miles and 30-40 watts will cover up to 15 miles. Coverage will vary depending on terrain, obstructions, type

of antenna, etc. If your antenna is very high above average terrain you will be able to go much further that the figures given above. Quality of the radios receiving your signal will be a determining factor as well. Since the power levels are rather low in comparison to other stations an external antenna on the receiver is highly suggested, especially an outdoor one.

It is very important to provide adequate cooling for RF amplifiers. This means using a properly sized heat sink and an external cooling fan. Heat sinks have heat dissipating fins which must be placed in an upward pointing direction. Overheating will cause premature failure of the transistor. A cooling fan, usually a 4 to 5 inch square box fan, will offer extra insurance. It should be placed so that the air flows over the fins of the heat sink.

Under no circumstances should an amplifier/transmitter be operated without a proper load attached to the output. Failure to do so can destroy the output transistor. When testing and tuning a dummy load is used to present a load of 50 ohms to the transmitter/amplifier. It is very bad practice to tune a unit with an antenna attached Use a dummy load of proper wattage rating to match the transmitter output wattage.

An output filter must be used between the transmitter/amplifier and the antenna. Some amplifier kits come with a filter included, such as the 20 Watt FRB amplifier. These do not need an additional filter. More on this in the filter section.

Heavy gauge (12-16 AWG) insulated stranded wire is used to connect the amplifier to the power supply.

Observe correct polarity when making the connection. Reversing the polarity will result in catastrophic failure of the transmitter. Red is positive and black is negative or ground.

Power supplies

Most of the transmitters and amplifiers used in micro broadcasting require an input voltage of 12 to 14 volts DC. Higher power amplifiers (above 40 watts) require 24-28 volts DC. In a fixed location the voltage is provided by a power supply which transforms the house voltage of 110 volts AC to the proper DC voltage.

Power supplies are not only measured in terms of their voltage but current as well. A higher power amplifier is going to require a greater amount of input power as compared to a lower power amplifier. Output current is measured and specified as amps.. A power supply is selected on the basis of its continuos current output which should be higher than the actual requirements of the amplifier. Power supplies operated at their fully rated output will have a tendency to overheat under continuos operation. An amplifier which requires 8 amps will need a power supply with a 10 to 12 amp continuos capacity. In most cases the following ratings are suggested for transmitters requiring 13.8 volts.

1-5 Watt Transmitter 2-3 Amps

10-15 Watt Transmitter 5-6 Amps

20-24 BGY33 Based Unit 10 Amps

40 Watt Transmitter 12 Amps

Any power supply you use must have a regulated voltage output along with protection circuitry. Some reasonably priced brands include Pyramid, Triplite and Astron. Do not use any of the wall transformer type of power supplies. Such units are not adequate for this application. Higher power transmitters require power supplies with an output voltage of 28 volts. Astron is the best manufacturer of this type of power supply. A 75 watt transmitter will require a power supply with a current rating of 6-8 amps and 28 volts.

For mobile applications voltage can be fed from the cigarette lighter socket of a car with the correct plug and heavy gauge wiring. This may not work well in some newer vehicles with are reported to have some sort of current limit protection on the lighter socket. Check with an auto mechanic about this if you are in doubt.

Electrical systems on newer vehicles are rather sensitive and can be damaged if not properly understood.

Another problem with mobile operation is battery drain. A 20-40 watt transmitter running for 4-5 hours can deplete the battery to the point where the vehicle may not start. It is better to have separate battery running parallel to the charging system with an isolator. Isolators are available from Recreational Vehicle accessory suppliers. Use a high capacity deep discharge type of battery.

Lead acid batteries are not very benign. Acid can leak and spill on people, clothing and equipment. It best to keep the battery in a plastic battery box. Vapors from the battery are explosive in confined areas. Keep this in mind for mobile vehicle operations. You might consider using a gell cell type of battery which is sealed and can not leak. These are a bit pricey but have far fewer problems. A good quality gel charger must be used to ensure battery longevity.

Smaller gel cell batteries work really well for setting up a low power (6 watts or less) transmitter on a street corner as a public demonstration of micropower radio. In Berkeley a 6 watt micropower station is set up at the local flea market as a community demonstration on weekends. It is called Flea Radio Berkeley. Transmitters can be set up at demonstrations and rallies so motorists can tune their radios to the frequency which is displayed on large banners near the streets and listen in on what is happening. This has worked very well. Use your imagination to show how micropower broadcasting can be brought into the community.

Filters

Although it is rather simple in design and construction a filter is one of the most important elements in broadcasting. No matter what, a proper filter must be used between the transmitter and antenna. Use of a filter will help deprive the FCC of one of its main arguments against micropower broadcasting - interference with other broadcast services.

A proper filter reduces or eliminates harmonics from your broadcast signal. Harmonics are produced by the transmitter and are multiples of the fundamental frequency you are tuned for. For example, if you broadcast at 104.1, you may produce a harmonic at 208.2, and (less likely) 312.6 and so on. Most filter designs are of the low pass type. They let frequencies below a certain frequency pass through unaffected. As the frequency increases and goes beyond that point the filter begins to attenuate any frequency that is higher than the set point. The degree of attenuation increases with the frequency. By the time the frequency of the first harmonic is reached it will be severely attenuated. This is very important since the first harmonic from an FM transmitter falls in the high VHF TV band. Failure to reduce this harmonic will cause interference to neighboring TV sets.

You do not want to generate complaints from folks who engage in the odious habit of watching TV. Noble sentiments, such as telling them to smash their TV if they have a problem will not suffice. Use a filter.

Complaints increase the possibility of the FCC showing up at your door. One needs to be good broadcast neighbor and an asset to the community.

Harmonics further up the scale can cause interference to other mobile and emergency radio services. Not desirable either.

Transmitters with output power ratings of less than 25 watts will need at least a 7 pole design. Higher power units will need a 9 pole design. An increase in number of poles increase the degree of attenuation. Representative designs are shown. If you build one of these put it in a metal, well shielded enclosure.

Not really related to filters but an important side issue is the use of FM frequencies at the bottom and top ends of the band. Do not use 87.9 to 88.3 or so if their is a channel 6 TV frequency being used in your local area. Television sets have notoriously poor selectivity and your signal might end up coming in on the sound carrier of the TV if channel six is being used. At the top end of the band do not go any higher than 106 MHz if the transmitter is near an airport. In fact, do everything possible not be too close - at least several miles and away from the flight path(s). Even though interference possibilities are minimal there is not any point in taking chances since the FCC has claimed airplanes will fall from the sky if micropower broadcasting is given free reign. Corner cutting corporate airline maintenance polices most likely pose a greater danger to public safety than micropower broadcasting, however

Antennas

An antenna's primary purpose is to radiate the FM broadcast signal from the transmitter to surrounding FM radio receivers. In order to do this several conditions must be met. First, the antenna must be tuned to the frequency being transmitted. Secondly, it must be sited and oriented properly.

At FM frequencies the radio waves travel in a straight line until an obstacle is met. This is known as line of sight transmission. If the receiving antenna and transmitting antenna can "see" each other and the path distance is not too great to attenuate the signal, then the broadcast signal can be received. Radio signal strength is based on the inverse square law. Double the distance and the signal strength will be 1/4 of what it was.

Since FM broadcast transmissions are line of sight, the height of the antenna is very important. Increasing the height is more effective than doubling or tripling the power. Due to the curvature of the earth the higher the antenna the greater the distance to the horizon. Increased height will place the antenna above obstructions which otherwise would block the signal. Your antenna should be at least 40-50 feet above the ground. Count yourself lucky if you can site the antenna on a hill or a ten story building.

An antenna is rough tuned by adjusting the length of the radiating element(s). Many antenna designs are based on or derived from what is called a dipole, two radiating elements whose length is roughly equivalent to 1/4 of the wavelength of the desired frequency of transmission. Wavelength in inches is determined by dividing 11811 by the frequency in megahertz. The result is either divided by 4 or multiplied by .25 to yield the 1/4 wavelength. A correction factor of .9 to .95, depending on the diameter of the element, is multiplied times the 1/4 wavelength resulting in the approximate length of each element.

Fine tuning the antenna requires the use of an SWR power meter. SWR is an abbreviation for standing wave ratio which is the ratio between power going into the antenna and the power being reflected back by the antenna. A properly tuned antenna is going to reflect very little power back. Correct use of an SWR meter is described a bit further down in this section. IF you can afford $100. get a dual needle meter which shows both reflected and forward power at the same time. A good brand is Daiwa.

A dipole with tuning stubs is one of the easiest antennas to make and tune. Two dipoles can be combined on a 10 foot mast if they are spaced 3/4 of a wavelength from center to center with the elements vertical and fed with a phasing harness. A phasing harness consists of two 1.25 wavelength pieces of 75 ohm coaxial cable (RG11) cut to a length that is the product of

the 1.25 wavelength times the velocity factor (supplied by the manufacturer) of the cable A PL259 plug is attached to the end of each cable. These are connected to a 259 T adapter with the center socket being the connection for the feed cable coming from the transmitter. The other ends go respectively to each dipole. Such an arrangement will increase the power going into the antenna by a factor of 2.

Besides the dipole a number of other antenna designs are employed in micropower broadcasting. Each one has a characteristic pattern of coverage. Antennas can be broken down into two basic types – omnidirectional and directional. Under most circumstances the omni is the antenna of choice for micropower broadcasting. Polarization is another aspect to consider but does not play that big of a role in most cases. Antennas can be vertically, horizontally or circular in polarization. Most micro broadcast antennas are vertically polarized. In theory a vertically oriented receiving antenna will receive better if the transmitting antenna is vertically oriented as well. Obstructions in the receiving environment will have a tendency to bounce the signal around so that the signal will be not be exactly vertically polarized when it hits the receiving antenna, particularly in a car that is moving. Commercial broadcasters employ circular polarization which yields both vertical and horizontal components to the signal. It is said that this is best for car radios. This may be true given the dependence of commercial broadcasters on "drive time" as a peak listening period.

A single radiating element vertically oriented will have a rather high angle of radiation where a good portion of the signal is going up to the sky at angle of around 35 degrees or more. When you combine two vertical elements such as two dipoles you reduce the angle of radiation to a point where the signal is more concentrated in the horizontal plane. This is what accounts for the apparent doubling of radiated power when you use two dipoles phased together. Power output from the antenna or antenna array is known as effective radiated power (ERP) and is usually equal to or greater than the input power.

Several vertical element antenna designs have a lower angle of radiation even though they only use one element. These are the J-Pole and the Slim Jim designs. Having a signal pattern that is more compressed into the horizontal plane makes the Slim Jim ideal for urban environments. Both can be easily constructed from ½" copper pipe and fittings. Plans are available from FRB directly or the FRB web site.

Another class of antennas are the 1/4 and 5/8 wave ground plane antennas. A commercially manufactured 5/8 ground plane for FM broadcast purposes is available for around $100. It is an ideal antenna for those want an easy to tune and assemble antenna. Set up time is less than 15 minutes. Plans for these antennas are available from FRB.

Directional antennas are not usually required for micropower broadcasting. If the area you wish to cover lies in one particular direction you might consider the use of such an antenna. An easy way to do this is to put a reflecting screen 1/4 of a wavelength behind a vertical dipole. The screen will need to be bit taller than the total length of the elements and about 2-3 feet wide. This will yield a nice directional pattern with a fair amount of power gain Your pattern will be about 60-70 degrees wide. Another type of directional antenna is the yagi which has a basic dipole as the radiating element but additional elements as reflectors and directors. A yagi can be a bit difficult to build for those not well versed in antenna design and construction. Your best choice is a dipole with a reflector.

For those who wish for a practical design that can be built and put to use the following is a basic dipole antenna which can be constructed from common hardware store items. It uses 1/2 inch copper water pipe and fittings along with aluminum tubing. A half inch plastic threaded T is used with a copper 1/2 inch threaded to 1/2 inch slip adapters at all three points. An aluminum tube 9/16 of inch or so in diameter will fit into this slip adapter and is attached

with two #6 self tapping sheet metal screws. This tubing is 20 inches long. Another piece of aluminum tubing 15 inches long with a diameter small enough to slip inside the other tubing is used as the adjustable tuning element. Four slots 90 degrees apart and 1 1/2 inches long are cut into in one end of the larger tubing. A small diameter hose clamp is slipped over that end. With the smaller tubing inserted inside the hose clamp is tightened to hold it in place. This is repeated for the second element. A copper half inch thread to slip adapter is soldered to one end of a 36 inch piece of 1/2 copper tubing which is the support arm for the dipole. A copper T is soldered to the other end. Then, two 3 inch pieces of 1/2 inch copper tubing are soldered to the T fitting. This allows easy clamping to a mast. A solder lug is attached to each element using one of the self tapping screws holding the elements to the slip fittings. Your coaxial cable will be attached to these solder lugs. Center conductor to one, braid or shield to the other. You can get a little fancier and make an aluminum bracket to hold an SO239 socket and attach this to the T connector.

Once you have it all put together as shown in the diagram it is time to tune it. Adjust the element lengths to the 1/4 wave length you arrived at with the above formula. Tighten the clamps so the tuning stubs can barely slide back and forth. Mark each stub where it enters the larger tubing. Using either hose clamps or U clamps attach the antenna to the end of a mast piece 10 feet long. The element to which the braid or shield of the coax is attached must be pointing down Support the mast so that is stands straight up with the antenna at the top. It is best to do this outside.

Set up your transmitter and connect an SWR/Power meter between the transmitter and the antenna. Adjust your meter to read SWR according to the directions that came with it. SWR is the ratio of power coming from the transmitter and the power reflected back from the antenna. A properly tuned antenna will reflect very little power back, resulting in a very low SWR ratio. Too much reflected power can damage the transmitter.

Turn on the transmitter and observe the SWR or amount of reflected power. Shut the transmitter off if the level is very high and check your connections. Rough tuning the antenna by measurements should have brought the readings down to a fairly low level. Turn off the transmitter and adjust each tubing stub up or down about 1/4 of an inch. Turn the transmitter back on and note the readings. If the reflected power and SWR ratio went lower you went the right direction in either increasing or decreasing the length of the stubs. Turn off the transmitter and continue another 1/4 inch in the same direction or the opposite direction if the SWR ratio and reflected power increased. Turn the transmitter on again. If the reading is lower continue to go in the same direction in 1/4 inch increments being sure to turn off the transmitter to make the adjustments. Continue to do this cycle until you have reached the lowest possible reading. At some point the readings will start to increase again. Stop there.

You can do this with two dipoles as mentioned earlier in this section. Each dipole is tuned by itself and then both are connected with a phasing harness when mounted to the mast section.

Connectors and cable

Radio frequency cables are referred to as coax as a generic term. It is short for coaxial. A coaxial cable consists of an inner conductor inside an insulating core .This is surrounded on the outside by a metal braid or foil, called the shield .This shield is in turn covered by an insulating jacket of plastic material. Coaxial cables are specified in terms of impedance which for most micropower broadcasting purposes is 50 ohms except for dipole phasing harnesses.

In the 50 ohm category there are a number of choices when selecting coaxial cable. The most important characteristic of coax is it's level of signal attenuation. This depends on the length of the cable and its particular frequency response. RG58 coaxial cable has a high degree of attenuation and should only be used for short connections. RG8X or mini 8 works well for

lengths under 50 feet and is suited for portable and mobile set ups since it is rather flexible. RG8 and its higher performance cousins such as 213 and Belden 9913 are the best for fixed installations. Belden 9913 has the lowest loss for any given length as compared to other variations of RG8. In fact, it has a loss figure at 100 MHz that compares well with commercial broadcast hard-line coax. It is rather stiff cable and must be installed correctly.

Coaxial cables do not take rough treatment very well, especially 9913. They must be carefully rolled up by hand, not wrapped between palm of hand and elbow like a rope. Kinks are to be avoided at all costs. When routing a cable keep the bends from being sharp and keep it away from circumstances where it can be pinched or slammed.

Three types of connectors are in general use - BNC, PL259 and N. Most micropower broadcasting equipment uses PL259 and its mating socket known as the SO239. Any connector will introduce some small degree of signal loss. N connectors are used where high performance and reliability are of most importance.

Studio setup

A typical broadcast studio consists of an audio mixer (DJ style works best), one or more CD players, one or more cassette tape decks, a turntable or two, several microphones, and a compressor/limiter. Optional items can include a cart machine and a phone patch.

Reasonable quality mixers start at $200 and go up in price from there. DJ styles are best since they have a large number of inputs available and support turntables without the need of external phono preamps. Any mixer you select should have least 2 or more microphone input channels. These should be low impedance inputs. Other features to look for include high visibility VU (level) meters, slide faders for each channel, switchable inputs for each channel, stereo or mono selection for the output signal, and an auxiliary output for an air check tape deck.

CD players and tape decks can be your average higher quality consumer audio gear. Day in and day out usage will eventually take their toll so pay for the extra warranty period when it is offered. When one wears out in 6 months or so just take it back under warranty for either repair or replacement.

DJ style turntables are the best choice for playing vinyl. Cheaper units just will not stand up to the wear and tear of daily usage. Select a heavy duty stylus as well.

Microphones should be fairy good quality vocal types. They can be either directional or omnidirectional. Directional microphones will pick up less ambient noise but need to be on axis with the person's mouth for best pick up. Since some folks do not pay attention to where the microphone is in relation to their mouth, an omnidirectional might be considered a better choice if this is the case. A distance of about 4 inches should be maintained between the microphone and mouth. Place a wind screen foam piece over each microphone. Some microphones have built-in shock and vibration isolation to keep bumps to the microphone from being audible. It is a good idea to use some sort of isolated holder for the DJ microphone. An old swing arm lamp can be adapted to hold a microphone.

For programmers who do a lot of reading on material on the air a headphone microphone is something to consider since it will maintain a uniform distance from mouth to microphone no matter where the head moves to. One drawback is that they tend to be a bit fragile in rough hands.

Headphones are essential for monitoring and curing up program material. You can either opt for high quality rugged units that are a bit costly or plan on replacing an inexpensive set every few months.

A limiter/compressor is an essential part of the audio chain. It is used to keep the audio signal from exceeding a preset level. Without this the transmitter will be overmodulated resulting in signal splatter and distortion. Signal splatter will cause interference with adjacent stations and distortion will send your listeners elsewhere.

Common to most limiter/compressors are a set of controls - input level, output level, ratio, threshold, attack and decay. To properly set up the mixer, limiter/compressor and transmitter you start with a steady audio source (a signal generator plugged into the board or a test tone CD, tape or record). You adjust the input level and master output level controls so that the meters are reading zero dB. Master level should be at mid position. Audio output goes from the mixer to the limiter/compressor and from there to the transmitter. Do not turn the transmitter on at this time.

Most limiter/compressors have indicator lights or meters to show how much gain reduction is being applied and the output level. Set the ratio control to the infinity setting, this enables hard limit function. Attack and decay can be set around mid position. Adjust the threshold and the input level until the gain reduction shows activity. Adjust the output level so that the indicator lights or meters show a 0 dB output level.

Turn the level input on the transmitter all the way down and power up the transmitter. Monitor the signal on good quality radio. Slowly turn the level control until you can hear the test tone. Compare the signal level to that of other stations. Your level should be slightly less since most other operations are using quite a bit of audio processing on their signal. You may have to make fine adjustments to the limiter/compressor to get things exactly right.

When everything is set up correctly any audio signals that exceed 0 dB on the board will be kept at that level by the compressor/limiter. You will need to listen carefully to the signal to make sure when a "hot" audio source exceeds this that the transmitted signal keeps an even level and does not distort or splatter. There will be some interplay between the output level and the threshold setting. Nor do you want a signal that is too low in level either since that will produce a weak sounding broadcast.

A very important consideration is to keep as much distance between the studio gear and the transmitter as possible. RF (radio frequency signals) will find their way into audio equipment and produce a hum or other types of noise. You can separate the two areas by using a low impedance cable between the limiter/compressor and the transmitter. This can be a long microphone cable with XLR connectors or a made up shielded 2 conductor cable with XLR connectors. You can have about 150 feet of cable maximum. A high impedance to low impedance transformer will be needed at one end or both depending on whether the limiter/compressor and transmitter have low or high impedance connections. These transformers usually have an XLR female connector on the low impedance side and a 1/4" phone plug on the high impedance side. If your transmitter has an RCA style input you will need the proper adapter to go from 1/4" phone plug to the RCA plug.

Your studio should be arranged to provide easy access to all controls and equipment with plenty of table space. An L or horseshoe shape works well for the studio bench. An open area within the sight line of the operator should be provided so their will be a place for extra microphones and guests.

Final word

Although it seems like there is a lot to deal with in setting up a micropower station, it can be broken down into three areas- studio, transmitter and antenna. It should not be difficult to find someone with studio set-up experience to help with the project. Transmitters, particularly their construction and tuning, should be left to an experienced person. If such a person is not available there are a number of people who will assemble, test and tune your transmitter for

whatever fee they have set. Stick to a commercial, easy to tune antenna such as the Comet if your skills are minimal. These can be purchased pre-tuned for an additional fee from FRB and L. D. Brewer. It best to put most of the energy into organizing and setting up the station.

Experience has shown that once the technical operation is in place and running, it will require very little in the way of intervention except for routine maintenance (cleaning tape heads, dusting, etc.) and occasional replacement of a tape or CD player.

What requires most attention and "maintenance" is the human element, however. More time will be spent on this than any equipment. As a survival strategy it is best to involve as much of the community as possible in the radio station. The more diverse and greater number of voices the better. It is much easier for the FCC to shut down a "one man band" operation than something serving an entire community. Our focus is on empowering communities with their own collective voice, not creating vanity stations. Why imitate commercial radio?

Before you commit to your first broadcast it would be advisable to have an attorney available who is sympathetic to the cause. Even though they may not be familiar with this aspect of the law there is a legal web site which offers all of the material used in the Free Radio Berkeley case. There are enough briefs and other materials available to bring an attorney up to speed [The FRB case is an American specific case and the law is not the same in the UK - Libcom].

by Stephen Dunifer
Edited by libcom

Setting up a newsletter - technical guide

A guide covering technical, design and layout issues with producing your own newsletters and publications.

A. Getting started

1) Order some of the materials mentioned at the end of this article so that you will have them in time for your first meeting.

2) If you haven't already lined up a group of people interested in producing the first issue, make a friendly poster to recruit others. The poster should describe the purpose of your newspaper, solicit articles for the first issue, and invite people to call a telephone number to ask about joining your collective. Put up at least 100 copies of your poster on campus where they will stay up for three weeks or more.

3) Ask other publications about potential local printers. Once you have their numbers, call to inquire about prices, delivery rates, turnaround time, page sizes, whether they offer recycled paper, whether they are a union printer, etc. Make up an advertising rate sheet (sample available from the Thistle, see below) and arrange to meet with the proprietors of the four or five local businesses or campus offices which would be most likely to advertise. Once you have obtained about a page ($200-$400) worth of commitments, call the people who responded together for a first meeting.

4) You may wish to have two initial meetings: one just to get acquainted (and hand out copies of this article), and a more formal meeting to resolve the following eight key issues:

i)Size of paper and masthead design
ii) Mission statement and guidelines for what you will print
iii) Procedures and requirements for article submissions, editing, and layout
iv) Deadlines for first issue article submissions
v) Compiling list of potential advertisers and assigning people to solicit ads
vi) Locating computer equipment
vii) Dates of first editorial meeting, editing session(s), and layout
viii) Applying for university recognition and funding

B. The Editorial process

1) On a blackboard, list the names and authors of the articles expected for the issue, with four check-off columns for In, Edited, Proofed, and Length. Set aside three manila folders labeled Unedited, Edited, and Proofed.

2) Articles should be submitted both on paper and on disk if possible. When an article arrives, check it off as "in"; put the paper version in the Unedited folder. If you only receive a disk, print out a paper copy; otherwise you may not realize that the article is "in". Write the length of the article on the blackboard. You may wish to measure length by "K", where 1K is 1,000 characters. (Using Microsoft Word, the number of characters is displayed each time you save your work.)

3) When most of the articles are in, several copies should be made for a team of editors to read. This team could be everyone, or it could be just two people. To promote democratic decision-making, you should try a rotating group composed of one-third to one-half of the people involved in the publication.

4) At the editorial meeting, people should discuss the articles on the blackboard one by one. For each article, you can decide (usually by consensus) to "Yes, run it, possibly after some editing," or "No, don't ever run it," or "Maybe, run only if there's extra space." If something is low priority and needs work, it generally should be postponed to the next issue so that it can be rewritten by the author. Finally, at the end of the list of articles, the editorial meeting should decide which articles are page 1 material, and which deserve the next most prominent locations: page 3, the back page, page 2, the centerfold, page 5, etc.

5) Expect the editing meeting to last at least two hours (i.e. bring food!).

C. The typing and editing process

1) Depending on the size of your group and whether you have access to a lab or office with many computers, you may want to have people type in and edit articles separately or work together in a common space. Generally, the latter option results in a more uniform product and is very important to training new members of your newspaper. (If there are more experienced journalists in your group who can write copy that doesn't need much editing, you can set up a special process to let them cover events which occur after your editing meeting.)

2) Before entering the articles into the computer, create three computer folders parallel to the manila folders: Unedited, Edited, and Proofed. Copy all the articles submitted on disk to the Unedited folder (it may be necessary to first convert them to the proper word-processing program format). Finally, arrange for volunteers to type in the rest of the articles.

3) Once the articles have been placed into the Unedited folder, you are ready to edit. Some common formatting guidelines for newspaper text are listed in a box below. When done editing, spell-check your articles as a final step, and save them in a readable font, with a uniform point size, such as Times 12 or Courier 12.

4) Finally print out the file and save it in the Edited computer folder. Put the printed copy in the Edited manila folder, and check off the article as Edited on the blackboard.

D. The proofing process

1) The printed copy allows you to make use of volunteers who are unfamiliar with computers in the proofing process. It also makes it much easier to detect small problems like extra spaces. The person proofing the articles should fix typos only. She or he should not edit (reword) the article unless there is something seriously and obviously wrong with it. The idea is to prevent an endless series of edits. (Editing often introduces new errors into an article.) If the editing process is inadequate then more attention should be given to training and supervising editors to fix the problems before they reach the proofing stage.

2) Once you type in the proofing changes, save the file in the Proofed folder, and check off the article as Proofed on the blackboard. The printed copy can be moved to the Proofed manila folder; it is not necessary to reprint the file unless you have made changes other than those indicated on paper.

E. The Layout process

1) Using a page layout program like Quark XPRESS or Pagemaker, set up a "tabloid" newspaper template. It is good to place your ads before importing the articles. To indicate the location of each ad, make a box representing it at the bottom of a page where it will not interfere with headlines. Type the name of the person or group that purchased the ad in large text within the box to identify it.

2) Import all the articles from the Proofed folder into this template. You should first import them "roughly" so that they use about 50-70% of each page not including the ads. Then give each article a standard 30-point bold headline (this can be adjusted later), and set the byline off from the text (by centering, for example). You can then print "thumbnails" of your pages to give you an idea of the amount of space available to be filled by graphics.

3) Finally, measure some graphics or photos to go along with each article. Then create "graphics boxes" using your layout program and move them to a visually pleasing location (where they usuallly will displace your text).

4) Adjust the sizes of the boxes, and add "pull quotes", clip art, white space near headlines, etc., so that the text of each article ends precisely at the end of a page or continues onto a page that has exactly enough space left for the continuation. Mark each continuation clearly.

5) Print out your newspaper at 65% reduction (portrait orientation) for final review before printing it at actual size.

F. Paste-up

1) Each page must be pasted together onto a printer board from two half-pages, 8 1/5" x 11". It is easiest to paste the halves together if one of the halves is cut so that it overlaps the the other half by one or two lines of text.

2) On each page, paste down line-art graphics. For photos and graphics which include shades of grey or extremely fine resolution, write a percentage and page number on the back of the graphic and put it in an envelope. This will tell the printer to "shoot in" and half-tone the graphic on the specified page at the specified reduction or enlargement percentage.

G. Printing and distribution

Give the printer a realistic date for publication and make sure there will be people to distribute your paper after it returns from the printer. Your newspaper won't mean anything if it stays piled in your office.

H. References
Fortunately, several books help explain the terminology of printing, mechanics of desktop publishing, methods for getting ads and handling finances, performing research, and using English in standard ways.

We recommend six publications to help campus journalists get started.

1) How To Do Leaflets, Posters, And Newsletters, by Penny Brigham et al. Available from PEP Publishers, 3519 Yorkshire, Detroit, MI 48224. $14.95; bulk discounts available.

2) The Guide To The Thistle (Alternative News Collective, MIT). For $5, they will send you this guide with a sample advertising brochure and 2 sample layouts in Quark XPRESS and Pagemaker on a Mac disk. Write to Thistle, Room W20-413, 84 Mass. Ave., Cambridge, MA 02139. Tel #(617) 253-0399.

3) The Reporters' Handbook (guide to investigative journalism), published by Investigative Reporters & Editors, University of Missouri, 100 Neff Hall, Columbia, MO 65211. Tel #(314) 882-2042.

5) A collection of $2 brochures on research, interviewing, legal issues, and Freedom of Information Act techniques from the Reporters' Committee for Freedom of the Press, 1735 Eye St. NW, Suite 504, Washington, DC 20006. Tel #(202) 466-6313.

I. Submissions
It helps to run a box like the following in every issue:

Guidelines for submission
If you use a computer, please submit your article on a 3 1/2" diskette for a Mac or a PC compatible. We use MS-Word, but we can read most any format. Otherwise, send on paper or E-mail to . Please include one or two photos or charts as it will help us give your article a more pleasing layout. You should limit your submissions to the following length unless you have worked out a longer piece with the editors:

Letters: 400 words
Features and Investigative Articles: 1500 words
Opinion Pieces: 800 words

Appendix: Helpful editing and formatting procedures
1) Text should be justified, with 1/4 inch tabs for paragraph indentation. No blank lines between paragraphs.

2) Use two spaces after a period or a colon and one after a semicolon.

3) Indicate author in centered text above the beginning of the article, followed by a blank line.

4) Place biographies/credits of authors italicized in [brackets] at the end of each article, followed by the source. [This article is excerpted from Federation of American Scientists' Government Secrecy Bulletin, May 1990].

5) Titles of publications italicized (or de-italicized, if they appear in the credit).

6) If bullets (o) are used they should be properly typed in (Option-8 on a Mac, Control-V 4,3 in Word Perfect) and they should be followed by a tab. Paragraphs marked by bullets should be indented except for the first line, which should be flush left.

7) Accent marks should be properly typed in (on a Mac, Option-n n yields the n and Option-e yields accented vowels).

8) Spaces go before and after long dashes - like this (Option-Shift-dash on a Mac).

9) Write out acronyms the first time they are used. Use a person's last name the second time you refer to them. Adopt some standards for spelling, such as US for United States, 90's or 1990s for 1990's, right-wing (adjective) as opposed to Right Wing (noun).

10) Don't forget to mention when and where something happened and who was involved

by Rich Cowan (co-founder of The Thistle at MIT)
Edited by libcom