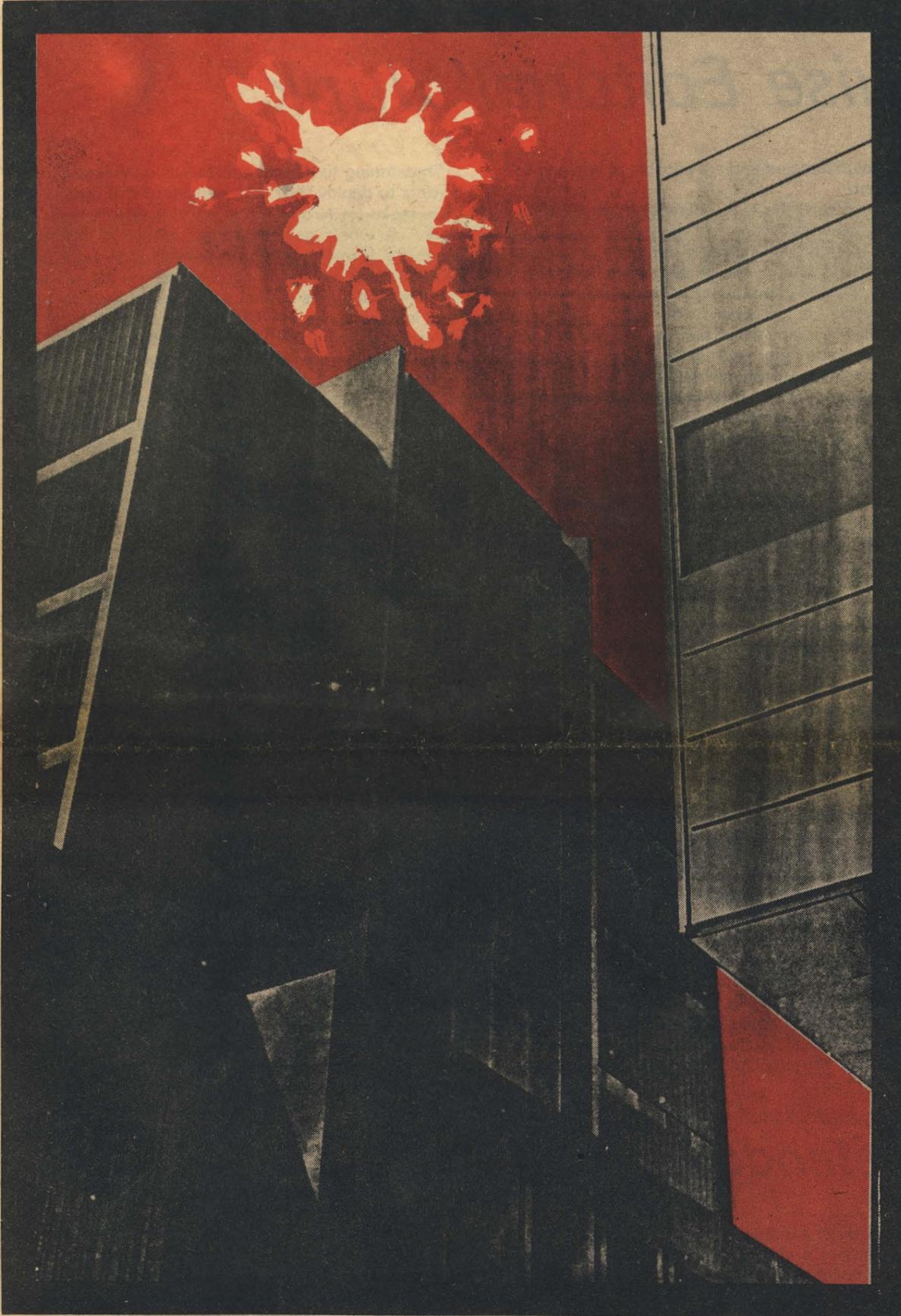


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London MetroBulletin

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A JOURNAL OF EVENTS AND OPINION



**WHAT HAPPENS
WHEN
LONDON IS HIT
IN A NUCLEAR
WAR?**

**EXTRA
NUCLEAR
SURVIVAL
SUPPLEMENT**

**FULL PAGE
COLOUR
FALLOUT MAP
OF
SOUTHWESTERN
ONTARIO**

**PLANNING
YOUR SURVIVAL
STEP BY STEP**

**WHERE
WILL YOU BE
THE DAY AFTER
DOOMSDAY?**

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Hearing About
Everyone else's
Rights?
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The Debate
From 3 Sides.
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**The Defence of
Variety Store
'Smut'**

**The Politics
of Censorship
(We go to the
Censor Board)**

This issue dedicated to the memory
of Murray Dean, the Late proprietor
of the New Yorker Cinema

A LETTER FROM THE PUBLISHER:

The **MetroBulletin** approached **Canadian Abortion Rights Action League (CARAL)** president Bill Ratcliffe for a 750 word defence of their group's 'pro-choice' position on abortion.

After discussing our offer 'with a few board members', Mr. Ratcliffe declined to defend their group's position because of the **MetroBulletin's** 'libertarian bias'. We offered him a 750 word *unedited* article, as well as a 350 word *unedited* rebuttal.

We feel that his negative response displays a gutless and cowardly stance, and can only weaken **CARAL'S CREDIBILITY** WITH Londoners and particularly with the men and women who have given time and money in the past to their organization.

Those people have a right to expect that their interests be defended by the group claiming to be an abortion rights *action* league.

Unfortunately, this displays the true *left-wing attitude* of **CARAL London** whose aim, it seems, is not to communicate their *ideas*, but to *appeal to the ideologically committed*. (If we were a known 'N.D.P.' paper, their article would have been submitted in a flash.)

The irony is that a 'libertarian' position defends the right of access to abortion (though for reasons entirely unrelated to 'left-wing' thought), and the paper's publisher and editor, Marc Emery, will defend that position in lieu of their abdication.

Letters To the Editor:

Last Issue's 'Cruise Editorial' Junk

Editor

Your last editorial, 'Long Live the Cruise', was unfair to the millions of Canadians, Americans and West Europeans who oppose the cruise missile.

Many of them are better informed than either you or Trudeau credit them. Not all of them are left-wing interventionist types who 'see the Soviet-Chinese ideal as closer to their socialist state-domination utopia...'

You have correctly identified only a small core of vocal people, the kind who enjoy demonstrations and harassment of any kind of establishment. Others, such as myself, who are very pro-capitalist and anti-Soviet (I don't believe a single word printed by Pravda) and who are painfully aware of Soviet intent to world domination, also oppose cruise missile testing. Being pro-freedom does not necessarily mean wanting more weapons of mass destruction.

Why, if your paper is pro-freedom, do you alienate that segment of our population (over half) who are terribly concerned about the spread of nuclear weapons? Why smear them with guilt-by-leftist-association? Why grant their votes to the N.D.P.?

Your editorial failed to take a critical look at the nature of the cruise missile and the kind of world it is being born into.

You gave an impressive list of over 14 countries which have been invaded by the Soviet Union since 1919. Did you know that many of those countries were overrun with the help of American and Western European made weapons and copies thereof? Or that some of them were invaded at a time when the U.S.A. had nuclear weapons but the Soviets did not (Hungary, Czechoslovakia, Iran)? Or that much of the Soviet empire expansion took place before 1970, when the U.S. had a supposed nuclear advantage?

Or that the only significant lead-time advantage in weapons development (greater than one year) the Soviets have ever had was with the ABM (anti-ballistic missile), the only weapon in the nuclear arsenal which can properly be called a defensive type weapon, and which was later abandoned by both sides by treaty because they considered defensive weapons to be useless for their purposes?

Or that submarines patrolling the oceans by both

powers go undetected and are capable of wiping out a continent?

Or that 65% of the U.S. military budget is spent defending *other* countries, not the U.S.?

Please identify the individual whose life will be made freer and safer by the building of more nuclear weapons. (Missile manufacturers excluded.)

The cruise is a small (18 foot), pilotless, computerized airplane which almost hugs the ground in order to evade radar and carries a bomb 15 times as powerful as the Hiroshima bomb. It can be carried in and launched from a B-52 bomber, a small naval vessel or a small ground vehicle.

Because it is so small and mobile, it defies detection by satellite and perhaps even by ground inspection. Its entry on the world scene therefore makes nuclear weapons treaties meaningless because verification of cruise missiles is next to impossible. The only way to stop it becoming a world-wide menace is to ban flight-testing.

Once mass-produced and in the hands of several countries, the cruise will be more than just a further level of redundancy in the overkill factor. It will cause the nuclear warning time (the time between full alert and launch) to decrease to a few minutes, such that computer-controlled warning systems must send their signals to computer-controlled counter-attack systems without human intervention.

The world will be wired to self-destruct.

The Russians will likely be the first to institute a launch-on-warning policy because they correctly see the cruise missile as a first-strike nuclear weapon. The cruise cannot possibly be a retaliatory (second-strike) weapon because it is too slow to reach missile silos deep in Soviet territory after a nuclear war has started. It is slower than most military airplanes.

Plans by NATO include deployment of over 400 of them in Europe within a year. Precisely whose finger will be on the button has not been made clear.

The Soviet SS-20's, on the other hand, are not first-strike weapons because they can be detected by radar. Nor would bargaining away the SS-20's by threatening to deploy cruises help Western Europe because the Soviets can destroy Europe without SS-20's.

Threatening to deploy cruises will only cause the Soviets to deploy their own version of this weapon.

So much for NATO's 'two-track' policy. It won't work. It won't gain anything. From a military viewpoint, it makes far more sense to stick with the submarines as a nuclear counterforce and to beef up conventional forces so that nukes won't have to be used in Europe.

Production of the cruise will make it easier for some of the smaller countries now just beginning to acquire nuclear capability (India, Israel, Argentina, Pakistan) to become formidable powers. They will likely forego the building of big rockets and instead put their shiny new bombs on cruises, either their own versions or stolen ones.

Imagine Libya with such a neat little weapon. Argentina is now in the position of being a supplier of nuclear technology and its military government has been approached by that of Libya for the exchange of nuclear expertise. Even if an insane dictator just *claims* to have one of them (how do you know it's not a bluff?), the suspected presence of cruise missiles could touch off a nuclear war.

What has all this to do with Canada? Isn't this an issue for the poor U.S. taxpayer? Couldn't the Pentagon find other testing ranges?

Perhaps, but Canada was chosen because its terrain most closely matches the northern U.S.S.R. and the Canadian taxpayer also makes a modest contribution to cruise manufacture. (\$26.4 million DIP grant to Litton Systems and a five year \$22.5 million interest-free loan for the development of the cruise computer-guidance system.)

Put all the facts together and a case can be made that the Canadian government's participation in this matter borders on treason (delivering materials and information into the hands of a foreign power which may jeopardize Canadian security).

Canada should refuse to allow cruise testing at Cold Lake. Instead, she should insist that all NATO countries, including herself, build up their own conventional forces to defend their own territory rather than relying on a free but ineffectual nuclear umbrella from the United States, an umbrella which failed to prevent the invasion of a half-dozen countries by the Soviet Union since 1945.

She should begin building her own *defensive* type missiles to shoot incoming missiles down, because her government is loony to think that the U.S. is going to start a nuclear war on Canada's behalf even if it were invaded by Russia.

The same goes for all other NATO countries. There may even be some of those anti-cruise protesters willing to dig in and help pay for it. Has anyone even *asked*? How about it?

Or is freedom something we only want until we happen to roll snake-eyes?

John Cossar - LONDON

Freedom Of Choice Defended

Editor:

To me, Dr. Gail Hutchinson presents herself as a typical politician using 'emotional' cliches to force the public (through government lobbying) to accept more censorship. She does not seem to acknowledge the reality that the 'public', 'society' and 'the people' are words used to describe groups of individuals with their own unique value systems and thought processes.

I detest Dr. Hutchinson's assumption that all those opposing censorship of pornography are 'naughty boys who are fighting against puritanical ideas concerning sexuality.'

Where in the world did she earn her degree? I always believed 'scientists' never made *assumptions* as an absolute!

I am a woman who does not support her premise that *all* men are potential rapists after they see pornographic films and I oppose her intention of increasing censorship. I philosophically disagree with censorship because principally it means forfeiting my freedom of choice. If my freedom of choice no longer exists, then I might as well be in Russia.

No matter how much research shows that *some* men become aggressive toward a woman after viewing a sexy film, the point remains that such men must also face the consequences if they even so

much as *touch* a woman without her consent. If a woman allows a man to seduce her *or* harm her, then it implies in *principle* that his behaviour is acceptable to her.

It is my opinion that Dr. Hutchinson has an acute case of tunnel vision when it comes to philosophical principles. For example, she used *racism* as an analogy to prove that public response on that issue would be somewhat greater than the ill-depiction of women in porno films, advertising, etc.

Again she makes assumptions here: 1) She is comparing apples with grapefruits, 2) she doesn't seem to realize that certain women must take responsibility for themselves if they allow themselves to be depicted pornographically, and 3) this is not a debate on pornography, but most importantly, it is a debate on an individual's freedom to choose what he or she wants to see, read, discuss and hear.

This is the debate that I think Robert Metz has succeeded in presenting quite objectively and where Dr. Gail Hutchinson came across subjectively and emotional.

Mr. Metz was clearly not defending pornography per se, but defending wholeheartedly a greater issue: freedom of choice.

After all, eroticism to some may be pornography to others and pornography to some may be eroticism to others.

Kathleen Yurcich - LONDON

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The MetroBulletin welcomes inquiries for articles, stories, research pieces, photo essays, etc. about Londoners, London politics, the local environment or political commentary.

We even pay reasonably well.

Next Issue in November

The FIRING LINE

Defending the right of a woman to procure an abortion is Marc Emery, sole proprietor of *City Lights Bookshop*. Mr. Emery is also editor and publisher of the *Metro Bulletin*.



Imagine you are walking down Dundas Street when suddenly you are besieged by someone, who desperately pleads that unless they can hook up tubes into your life support system, they'll die. It would immobilize you for nine months, but *they* would live.

What a moral dilemma!

To say 'no' would mean that you are putting convenience and self-determination above the value of another life. You walk away and say 'Sorry, that would ruin *my* life' and that person, as a result, dies. Sound callous?

But consider what could happen if you said 'yes'.

Once your nine month life-saving mission was over, you find that there is someone else who needs you for a life-saving blood transfusion, then yet another person needing a vital skin graft, then a terminally ill cancer patient who needs money for her medicine, etc... And then, when you are physically, financially, and emotionally drained, *you become one of them!*

Sound absurd?

It isn't. If *any life* is the ultimate measure of *value*, then those who advocate this philosophy have no choice but to give up all their worldly wealth, goods, and their individualism to devote themselves to the exclusive act of saving the lives of others. But they do not do this.

There are millions of starving people in Africa and Asia and if *any life* is the ultimate value, then *they* deserve the same degree of attention given the unborn fetus. But the proponents of this altruistic theory do not divest themselves of all their wealth (by their standard, a *lower* value) to save such people, but in fact insist that *all of us* be *coerced* into surrendering our independence and livelihood to provide for these dependents.

Any life form not independent that requires funds or sustenance acquired by *force* (taxes, control, or other coercion), has *no right to life*.

The starving millions receiving foreign aid, the terminally ill on socialized medicine, and a fetus occupying a woman's body for nine months all represent *non-reciprocal coercive arrangements*. *Life itself* is not the arbiter of the 'right to life.' A 'right to life' extends only from *the ability to provide self-sustenance without coercion*.

Knowing that each taxpayer works six months of the year in *slavery* to the government (50% of all your effort goes to government in taxes), any person whose existence is perpetuated by the state is existing at the cost of putting others into slavery. Obviously, *their* 'right to life' has superseded *our* 'right to life'.

The philosophy where all and any life is *sacred* (so much so that all others are made slaves to support them) is called *altruism*. Altruism destroys individuals and society.

What if they discovered a cure for cancer tomorrow? Or extended the aging process so all people lived till they were 120 (but in no better physical condition), and all terminally ill patients could live till they were 100, and all fetuses were born?

Who would provide the fantastic *cost* of sustaining their so-called 'right to life'? *You would*. 95% of all your wealth could go to this end. No degree of slavery should be used to justify any 'right to life'.

Abortion of a fetus is justifiable on the purely selfish interests of the woman occupied by the fetus and under no other criteria.

The proper role of 'society' should be to institute an environment of individual freedom *without* the element of coercion between people. Dependent persons (or fetuses) should only be sustained on a voluntary basis. This must be done with money, time, and love supplied *selfishly* by persons interested in such devotion. And when advocates of such devotion come forth in greater numbers and when the state encourages such an environment, *only then* will the numbers of abortions be reduced.

The current issue of Dr. Morgentaler's clinics is important because these independent clinics *by-pass* the state's monopoly on abortion. The state, through its therapeutic abortion committees is a constant reminder that your body is only yours by the grace of that collective 'we'.

The state's motives in this issue represent a typical but insidious example of their ultimate goal: *control*. *Political pragmatism*, not any principle that the fetus is a human life, is what motivates state behaviour. The state allows abortion because a) they can't *stop* it, so they may as well *monopolize* it, and b) abortions are easier on the socialized health care system because they eliminate heavy long-term social service payments (orphanages, mother's allowance payments, welfare, etc.) which today is a critical government problem and is the *direct result of implementing an altruistic philosophy*.

Ironically, the philosophies of both CARAL and 'Right to Life' are similar in that they both advocate altruism and state interventionism; it is only different *short term political results* that they seek. Both philosophies are contradictory to the nature of the problem---state intervention and individual pre-determination.

With the elimination of state-supported socialized medicine, we can return to *individual moral choice*. In this way, those who are *opposed* to abortion will no longer have to *subsidize* them. And those *desiring* an abortion will be free to do so in an environment where the costs of their decision will be borne only by themselves.

Before a society is in any position to grant a 'right to life' to its dependents (including the unborn) it must first be willing to grant that right to those who are able to sustain *themselves*.



Defending the right to life of the unborn, is (Mrs.) Joan Lenardon, wife, mother of two daughters, historian, and teacher. Mrs. Lenardon is a member of the Board of Directors, *Right to Life, London*.

'But Constable, I had to go through that red light; I hadn't planned for any red lights, and I'm late for work; I get very emotionally upset when I have to stop in all this traffic; I don't see why should have to accept society's choice that red means *stop* and green means *go*.'

What do you think these excuses are worth? Not much, in so far as convincing a police officer to put away his pad and pencil, you might say. So, it should come as a surprise to some and a shock to many, that these types of excuses *do* convince doctors to perform, and attorneys-general, members of Parliament, even Cabinet Ministers, to allow the killing of the unborn child. The reason for this surprise and shock is the explanation for **Right to Life, London**. (438-4866)

We are a group of citizens, about 900 strong in London, who are joined to similar groups throughout Canada under the umbrella organization called **Alliance for Life**. (203-379 Broadway Avenue, Winnipeg, Manitoba, R3C 0T9) We come from varied religious, economic and political backgrounds, but we have one goal in common: to educate people to the fact that something terrible happened in Canada in May, 1969.

What was this? The Federal Parliament under Prime Minister Pierre Trudeau and his then Minister of Justice, John Turner, withdrew legal protection from a group of people who up to this time in Canadian history, had been protected. This group is the 'Conceived But Not Born.'

The unborn child lost legal protection at the very time when medical science told us loudly and clearly that at conception, a human being exists. That human being in its genetic code is unique, one of a kind. That human being needs only nourishment, time, and a safe environment to come to the moment of birth.

How did the Parliament in Ottawa withdraw legal protection from the unborn child? Up to 1969, Federal law penalized abortion as an indictable offence, except when 'necessary to preserve the life of the mother' (Section 209). Parliament changed the Criminal Code in May 1969 regarding abortion in this way: The procuring of an abortion was still an indictable offence except when the therapeutic abortion committee of an accredited and approved hospital certified that 'the continuation of the pregnancy would or would be likely to endanger her (the mother's) life or health' (Section 251).

The word which hit many Canadians like a shot was '*health*'. Why get so upset about one word? Because the word '*health*' was inserted without giving it a definition, that is, a limit fixed by common sense. For example, the *World Health Organization* of the United Nations described '*health*' as 'a complete state of physical, mental and social well-being, and not merely the absence of disease or infirmity.'

Be honest, who in the world--you--me--would fill that bill? We know for a fact that even the government which relaxed the law in 1969 did not intend that the word '*health*' be given the wide interpretation of the *World Health Organization*.

What we were afraid would happen, has happened. The word '*health*' has been so emptied of meaning that of the over 70,000 abortions performed in Canada in 1982, fewer than 1% were done for medical reasons. Ninety-nine percent of those unborn children were aborted for 'socio-economic' reasons that had nothing to do with preserving the life of the mother.

Do you really believe that in our Canada of 1983, with our technology, 70,000 pregnant women would have died had they not procured abortions? In reality, the overwhelming number of abortions are carried out on women who are single, healthy, and under thirty years of age.

Well, what do we as **Right to Life, London** want?

We certainly want more people to appreciate that human life is valuable in all stages and states of existence, whether we are conceived but not yet born, whether we are ill, aged, or handicapped.

A first step in this direction is educating people to a basic scientific fact, namely, that we begin our life as a human being at our conception, and *not* after our birth, or after the third month, or after the sixth month. We want people, then, to exercise their rights of citizenship and demand from their elected officials and judges that our political and legal systems protect life before birth from unprovoked attack, just as they protect life *after* birth from the same type of molestation. We want that ever-so-slight protection of the unborn child still present in the Criminal Code to remain, at least to give us time to convince the law-makers to change the law and remove that word '*health*', a word which has meant the very opposite to nearly one million unborn Canadians since 1969.

Finally, at this very moment, we want the Ontario Attorney General to enforce that law with regard to so-called 'free-standing' abortion clinics. As Dr. Henry Morgentaler has set them up now, they are clearly violations of the law. Why? Because they are neither accredited nor approved by the Provincial Ministry of Health. In a word, they are illegal.

One last question. How long do you think such a 'free-standing', unaccredited, unapproved kidney transplant, or heart by-pass, or appendectomy clinic would be permitted to function?

BILL PETERSON AND DAVID DAVIS

Leaders Of The Same Party



ROBERT METZ

Being a conservative Liberal like David Peterson is the same as being a liberal Conservative like Bill Davis. Both are really *socialists* in disguise.

Bob Rae, on the other hand, isn't in disguise.

It's not that I'm trying to imply that our three provincial party leaders are in some basic agreement on how to resolve basic socio-economic or political problems. Hardly. It seems that they can only agree on how to get us *into* these problems. But whether they are consciously aware of it or not, there is a *single* common denominator to all of their philosophies that makes them *politically* the same: it is their mutual contempt towards the word *capitalism* and the principles of *individual* rights that the word represents.

Bob Rae, of course, makes no bones about it. He's *proud* to be a socialist. His major complaint has been that it's the Conservatives and Liberals who are implementing socialism, and not *his* party. But it's something you might never guess in listening to Bill Davis or David Peterson publicly speak. They wear their socialist disguises so well.

"I believe in the risk-reward system and I believe in private enterprise," David Peterson told his Ontario Liberals at their annual heritage dinner last April. But despite the fact that the "risk-reward, private enterprise" system is known only as *capitalism*, Peterson qualified his support for such a system by saying "This is not an age of *unbridled capitalism* where wealth can be earned at the expense of one class or group in society. What we must achieve, we can only achieve *together*."

One minute it's *private* enterprise and in the next it's back to doing things *together*. Collectivist.

Another person who believes in "private enterprise" is Bill Davis. He believes in it so much that sometimes his socialist disguise slips off, like it did when his government invested \$650 million of *our* tax dollars in a *private enterprise* known as Suncor.

When his critics condemned his action as being "outright socialist", he toured the province boasting that "We're not a doctrinaire party like the socialists (NDP)." And anyone who would even apply the principles of *any other brand of conservatism* to Ontario's Tories, said Davis, "is hung up on a matter of theology."

If *principles* are only a "hang up" to Davis, he has made it glaringly obvious that his party's single "principle" is that of political expediency---anything to stay in power. And while accusing the Liberals of "following whatever policy meets popular approval on a given day," Davis defended the actions of *his* party by claiming that *they* discuss "each issue as it comes."

What he sees as the difference between these two approaches to government is anybody's guess. Same difference to me. Whether a *conservative* government steals my money to invest in "privately" owned Suncor, or whether a (federal) *liberal* government steals my money to set up a "publicly" owned Petrocan, the fact remains that my pockets are still empty and that I was given no choice in the matter.

Canadians have grown to believe that the ultimate struggle between *capitalism* (individual rights) and *socialism* (collectivism) is somehow being fought along political party lines. But such is not the case. The eternal folly in being forced into voting for "the lesser of three evils" (voting *against* instead of *for*) lies in the admission that one is still voting for "evil".

It is frightening to realize that, when David Peterson uses the term "unbridled capitalism", it is really the *recognition of individual rights* that both he and his *political* (not *philosophical*) adversaries mutually fear. This also explains why they use the term "private enterprise" in place of "free enterprise". After all, a society in which *individuals* were free (from government) to determine their own destinies would be an obvious threat to *those who hold collectivist premises*.

And the saddest part of it all is when all of their collectivist fantasies invariably fail, the public comes to assume that *their* failure is, in fact, a failure of *capitalism*. With all their talk about "private enterprise" and "risk-reward" systems, it's a small wonder.

Unfortunately, our political alternatives will remain in short supply as long as politicians and the public continue to share their mutual contempt and ignorance toward the *concepts* (*capitalism, free enterprise, private property*) necessary to implement any real change in the direction of modern-day governments.

Until then, we'll have socialism, socialism, and even more socialism.

fireside chats

By Herman Goodden

I would like to share with you a rather astonishing letter which I recently received from the manager of my bank.

Dear Valued Customer

Sterling Trust Corporation is pleased to announce that it has joined the worldwide VISA organization. As you are a Preferred Sterling Customer, we invite you to apply for a VISA card during this introductory period, ending June 30, 1983.

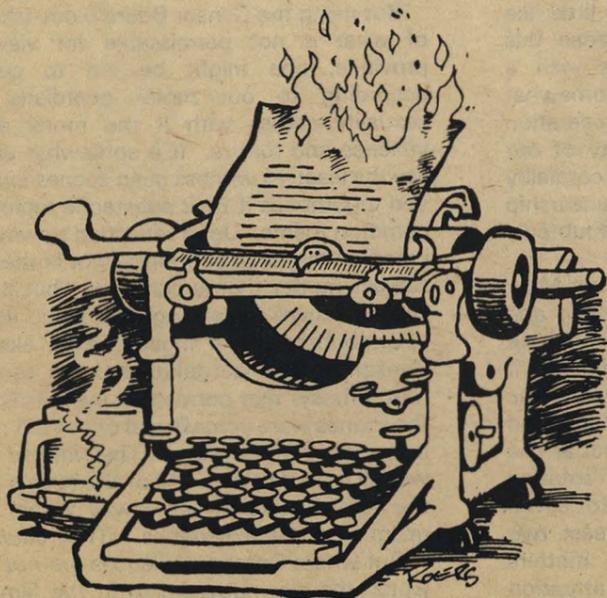
By simply filling out, on the attached application, the brief information of: Name, Address, S.I.N., Telephone Number, Birthdate, and Number of Cards Required, you will automatically receive your VISA card(s) with a \$1,000 Credit Limit; and by applying now, you will have the additional benefit of avoiding user fees until 1984.

If you require additional cards for other family members, complete that section and have them sign the application along with yourself. Lastly, please let us know your preference of user fee charges after January 1, 1984 - 15 cents an item or \$12 a year.

Be part of the world's most widely accepted charge card - VISA!

Sincerely
Robert Dykeman
Branch Manager

OUR STRENGTH IS YOUR SECURITY



Credit Card BANK-RUPTCY!

What has impressed me most strongly about this letter is the way my bank manager has singled me out as a 'valued' and 'preferred' customer and has virtually guaranteed me that I will receive a card entitling me to \$1,000 worth of credit. If I am truly a valued customer, I shudder to consider the financial straits of some of his unvalued or devalued customers. I mean my total bank balance with The Sterling Trust is currently and always has been \$1.59. I do not have another bank account anywhere, have never earned enough money in any single year to qualify for the privilege of paying income tax and am the proud owner of a credit rating which would probably give Robert Dykeman the DT's if he ever took the time to look it up. For this man to have casually offered me \$1,000 of easy credit is an act of gross financial irresponsibility, both to me and the VISA corporation.

Why do banks do this? Whatever happened to the idea of banks as places which encouraged habits of financial accumulation and solid fiscal planning? Where a bank's institutional sobriety used to be second only to the carefully nurtured gloom of a down-at-the-heels monastery, they now reflect all the discretion and restraint of a Wacky Webster's Midnite Madness Sale. Garish shag rugs cover the floors and half the walls. Expensive modern furniture is set up in conversational groupings in the lobby as though Hugh Hefner was going to drop by with some bunnies for some laughs and a few rounds of drinks. Standing in line to see the teller you are herded through a serpentine corral like a dirty little sheep about to be dipped and fleeced. Lulled into consumer receptiveness by the subliminal noodling of the Muzak Corporation your eyes roam across the lobby where you are expected to salivate at the sight of three shiny new TransAms to be awarded to the three lucky customers who take out the most crippling mortgages in 1983.

"Am I spending enough money that I don't even have?" you ask yourself while gazing at full colour posters of lobotomized swingers enjoying summer homes, yachts and European vacations on money they borrowed from your bank. Gnawing away at your sales resistance is the certain knowledge that if you don't take out that six figure loan by the end of the month, then you'll no longer be eligible for a free stuffed panda.

There was once a time when banks tried to offer their customers some sanctuary from the commercial storm which raged all around them. A banker had a reputation akin to that of a judge. Not very fun or exciting perhaps but then trustworthiness never is. From your banker you expected common sense, sound judgement, a prudent approach to life. And in 20 short years they've managed to throw away that image until they now stand in the public appraisal shoulder to shoulder with used car salesmen, oil company presidents and impeached politicians.

People just don't feel good about a corporation which can afford to erect monstrous towers of steel and glass on the most expensive land in any town and then decides to chisel nickels and dimes out of their steadiest customers everytime they write a cheque. Whose side is any corporation on that would blatantly encourage you to dive in over your head and then move in to foreclose your mortgage the minute that times get hard? What kind of mind would give the name "Personal Touch Banking" to an electronic machine in a wall that spits money at you if you know what buttons to push?

And what kind of moral or financial principles are exhibited by a bank manager who would extend \$1,000 credit to a pauper with \$1.59 to his name?

We visit the Censor Board...

THE POLITICS OF CENSORSHIP

by Robert Metz

Censorship, contrary to the expectations of most people, involves much more than appearances (or lack or appearances) would suggest.

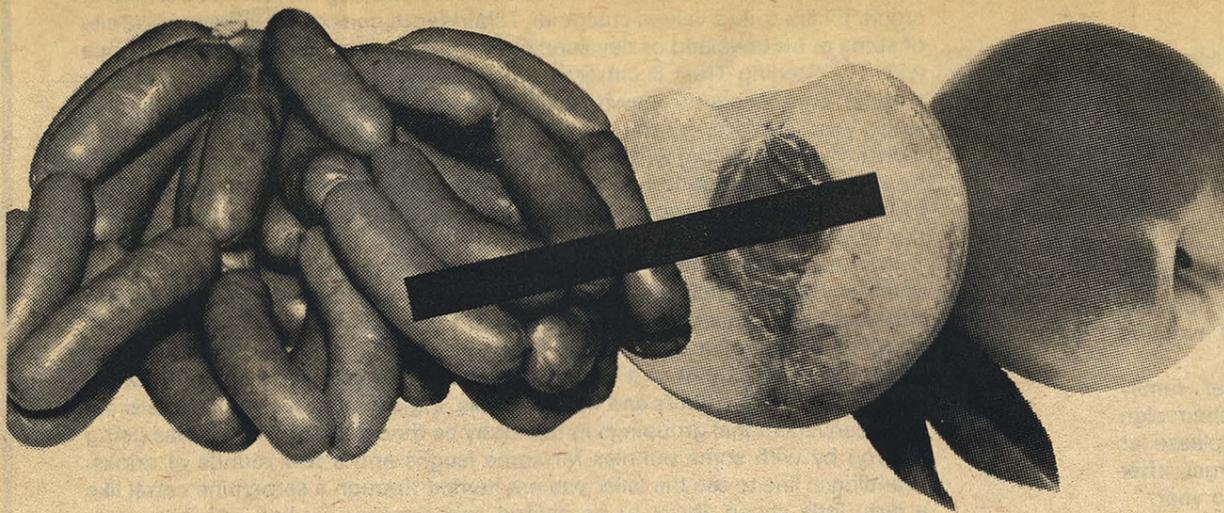
Because most censorship advocates are so concerned with *what* they want censored, few of them recognize (or are willing to admit) what censorship *is*. Fewer still, understand what censorship can and inevitably *will* lead to. This is indeed a tragedy---for without a critical awareness of what censorship *is*, any discussion on the matter becomes meaningless.

Whether we like to admit it or not, censorship *always* consists of the act of one (or several) person(s) using the *force of law* to control what *other* persons may see, hear, read, write, or say. There are therefore *two* important elements common to all forms of censorship: 1) the existence of *government enforcement*, and 2) the application of such enforcement to the field of *media* and other *forms of expression*.

There is one 'form of expression' currently in the media that has of late received far more than its fair share of attention---it is called *pornography*.

Because what is found in most pornography is so far removed from the realm of *actual experience*, and because it is so close to the realm of *imagined fantasy*, it has understandably earned its reputation as a 'controversial' subject. In a society where *it is claimed* that the distinction between fact and fantasy is often blurred, any blatant mixture of the two is sure to offend *somebody*. But when we start believing that the censorship of sex and violence *on the screen* will in some way reduce the incidents of violence and sex *in society*, then it's time to start looking at just *who* is guilty of confusing fantasy with reality---those *inside* or *outside* the theatres?

I have often wondered who exhibits the greatest degree of what has been loosely termed 'society's obsession with sex', an audience sitting in a pornographic theatre, Jerry Falwell's followers upon hearing his denunciations of pre-marital sex, homosexuality, etc., or readers of the *MetroBulletin* who seek out and read articles such as this one. It seems that we all exhibit *some* interest in sex---irrespective of the leanings of our own personal sexual attitudes.



No matter how we package it, 'sex' seems to sell. Regardless of whether a book, film, magazine, advertisement, or person denounces, praises, or *uses* the vices and virtues of our sexuality, as long as the subject includes some aspect or perspective on *sex*, it will always draw what *appears to be* a disproportionately large audience---but only to those who happen to *disagree* with the specific subject matter at hand. And whenever that subject is *pornography*, you can be certain that there will again *appear to be* a disproportionately large number of people on 'each side' of the issue.

In view of our differing sexual attitudes and perspectives then, a public debate on the immorality or merits of pornography is really quite irrelevant; *that* should not be a 'public' (i.e., *political*) issue involved in the sexual behaviour of *consenting adult individuals*. But unfortunately, this is exactly what has happened.

To accept an out of context statement such as 'society is obsessed with sex' is to also accept the moral segregation of sex from *other* human behaviour and implies that there is something inherently 'wrong' with sex. It could be (and has been) argued that we are equally 'obsessed' with eating, sleeping, watching T.V., driving, etc.

But if there is really any truth to the claim that we live in a 'sexually obsessed society', then that obsession does not relate to *sex per se*, but to the *political circumstances* created to restrict and prohibit *some* individuals from engaging in behaviour

not approved of by *others*. After all, the only people who would be actively (i.e., *politically*) opposed to pornography are those who themselves *don't read or buy it*, and who for their own reasons, feel compelled to impose *their* value judgements upon those who do not happen to share those values.

No doubt, this obvious reality accounted for the definition of 'pornography' given in Alex Comfort's popular *Joy Of Sex*: 'name given to any sexual literature somebody is trying to suppress.'

People who actively (or passively) enjoy sex in whatever manner *they choose* have never gone about petitioning their government to force or prevent *others* from doing so. Historically, it has always been the reverse that holds true: those of the current 'moral majority' (they exist in *every* country---even where the label is not officially recognized) have *invariably* been the perpetrators of such action.

Whether they are the right-wing followers of Jerry Falwell or left-wing militant feminists, they both exhibit the true nature of society's 'obsession': *that some individuals feel they have a 'right' to make choices for other individuals without their consent.*

Thus where pornography appears to be an issue of 'sexuality and morality' for the right-wing censor advocate (repression of the *mind*), and 'sex and violence' for the left-wing censor advocate (repression of the *body*), it is in practice an issue of freedom of expression, association, and choice.

Should 'society' (a nebulous term if ever there was one) have some sort of 'uniform censorship code' or none at all---and why? Is pornography really violence against women or is it not? Is it the *sex act* which is 'objectionable'---or only its *depiction*? By what *standard* does one decide? And most importantly---*who* decides?

With an objective of reaching any acceptable *consensus* on the matter, these are *impossible* questions to answer---but *only if* one accepts the basic premise of censorship. It is, unfortunately, from the acceptance of such a premise that the *politics* of censorship *begins*.

Needless to say, censorship in a 'free society' poses many serious questions and consequences,

but none has been given more attention than the supposed *justifications* of censorship. Thus in order to illustrate the many premises underlying censorship, let us begin by visiting the Ontario Censor Board where both the editor, Marc Emery, and myself were welcomed as guests last June 8th by Censor Board Chairman Mary Brown...

Visiting the Ontario Censor Board was a little like being the lamb led to the slaughter. In a sense, this statement may be accepted literally as well as figuratively. Upon our arrival, we were somewhat surprised at the personal attention and consideration given us by Mary Brown. The informality of our meeting and the valuable time and cordiality extended to us, despite our stated anti-censorship bias, was much appreciated. (It was undoubtedly calculated to serve a purpose.)

One of the first things that we learned from Mary Brown is that *she does not personally screen and censor* movies. It would appear that her function within the censor board is that of promotional agent and spokesman; it is her job to *sell* and *justify* the concept of censorship to the press, public, and politicians. And it is *because* of this role that a) she does *not* review films (that's the job of a 'rotating board which screens in panels of five to seven people', each film being reviewed by at least *two* members), b) she avoids commenting on matters 'outside her mandate', and c) her personal attention is given to politicians, reporters, and special interest groups. But among all the tools available to her for

...and see the 'Out Takes'

the purpose of justifying censorship, none could be more effective than the censor board out-takes that we were permitted to preview in the Board's projection theatre.

If ever there was a series of random film clips designed to totally offend the sensibilities and to *disarm the critical faculties* of the viewer, those presented as censor board 'out-takes' could not have served their purpose better. Calculated to appeal to an *emotional* response, the out-takes presented to us clearly achieved their intended effect---our total revulsion and repugnance toward what we saw on the screen.

'We saw the 1975 film *Snuff*; a woman is systematically dismembered.'

Because (as explained by Mary Brown) the Censor Board is now aware that the public is more disturbed by the explicit portrayal of *violence* than of *sex*, (our laws notwithstanding), it was a heavy dose of *violence and torture* that we were subjected to. Included in the display of blood and gore were several explicit tortures, beatings, and mutilations.

Among them: the bloody pulp of what was formerly a human being, after being run over by a tank in what appeared to be a Viet-nam war picture; the bloody bodies of nude women hung upside down at some 'Nazi-style' death camp while screaming in pain; heads being cut off in the movie *Caligula*; and the infamous 1975 *Snuff* scene in which a living (though fully clothed) woman is systematically dismembered and mutilated amidst her continuing cries of 'Please stop---I'll do anything!'---only her torturers don't stop. Instead, they decide to cut her fingers off one by one with wire cutters and then, using a chain saw, they cut open her abdomen, reach inside, and pull her intestines out while 'glorifying' themselves in her pain, suffering, and ultimate death.

Gruesome stuff---the only thing left to the imagination was the feeling of revenge that one would like to direct against the perpetrators of such torture and against the producers of such a film. (Note: Although very *explicit*, and contrary to the many rumours surrounding the film, Mary Brown assured us that the film *Snuff* was not *real*, despite all appearances. According to another source, the woman victimized in that film is alive and well and living in New York City.)

Of the fewer scenes that were *non-violent*, the Censor Board chose to include their controversial edit from *The Tin Drum*, a curious scene in that it was *not explicit*, but implied sexual intercourse between a young boy and an older woman. All that the viewer sees is the thrusting action beneath the bed sheets and the scene itself lasts but a few seconds.

Among the balance of out-takes presented was a brief scene of bestiality, in which a nude woman attempts to manually ejaculate a horse. And of course, there were the (surprisingly few) mandatory scenes of *human* sexuality which were not nearly as explicit as the fare that might be offered at Port Huron's 'Cinema Blue', whose advertisements appear regularly in the *London Free Press*. But whereas explicit *sex* is (due to legislation) *automatically* censored for Ontario movie audiences, explicit *'violence'* falls within the Censor Board's 'mandate' and is thus given its 'due consideration'. No doubt this fact accouts for the imbalance in the violence vs. sex as presented in the board's out-takes.

But using the Censor Board's out-takes as a guide of what is not permissible for viewing in this province, one might be led to conclude that according to our moral guardians, consensual sexuality carries with it the moral equivalent of violence and torture. It *is* somewhat un-nerving, to say the least, to witness such scenes indiscriminately tied together as if their substance represented some common theme. Upon reflection however, there *is* a common theme to be found---not in the comparative subject matter that is censored---but in the motives and objectives underlying censorship itself.

Undoubtedly, the most striking element of the Censor Board's out-takes was the sense of *reality* (not fantasy) that permeated every scene. Whether the scenes were *actually* real or not did not affect the *perceptions* of the viewer. They *looked* real and that was all that mattered. All of the events portrayed on the screen were in some way within the possible realm of *actual experience*. (They *could* happen.)

But where Ontario audiences are *not* permitted to watch the disembowelment in the film *Snuff*, it *is* quite permissible to watch the *Alien* disembowel its human host as it 'hatches' from his body. Blood and

If it's okay to censor one media. why not *all* media, including print media

gore fans will like-wise be glad to know that they are 'free' to watch movies like **Shivers**, **American Werewolf In London**, and **Conan The Barbarian**--all quite explicit, quite violent, but very *unreal*. (They could *never* happen.)

It is a great irony to discover that, in claiming they are censoring harmful *fantasies* that will *desensitize* us to sex and violence (since when has it been the job of government to keep us *sensitive* to sex and violence?), our censors are in fact censoring only the *elements of reality* out of these fantasies. Any 'sex' movie released in Ontario will attest to that. If you watch *what's left* in an Ontario release of **Flesh Gordon**, you would note that there's still plenty of 'fantasy' left intact in that movie, but that the *explicit sex scenes* have been censored. That element of reality again.

The significance of this 'reality factor' is not to be understated. It is the pivotal point upon which the foundation and growth of censorship in this country has taken root. It also supplies the evidence required to prove that the *purpose* of censorship is to suppress the opinions of those with whom one has a disagreement *and to promote one's own opinions*.

Consider that whenever there has been the greatest outcry against pornography, it has most often been *visual* pornography that ultimately has found itself to be the victim of a censor's scissors. A *picture* is worth a thousand words, they say. But what about *two thousand words*, or *ten thousand words*, or *twenty thousand*? Why is it that the justifications used for censorship in one media are not *equally applied* to every media form? Are we to presume that only *visual* pornography and violence have the effects upon us that their detractors claim?

By attempting to answer such questions, it becomes apparent that there is more to censorship than *meets the eye*.

The fact that sexual censorship has always pertained to a degree of 'explicitness' (realisticness) and not to the *nature* of the act being censored attests to the use of an extremely hypocritical standard. This standard has found itself criticized and opposed even by those who would support *even more* censorship than now exists. But with their political attack on the current status of censorship standards in this province, these new-wave censorship advocates (like the London Status of Women Action Group) are paving the road to an even more dangerous standard of censorship--the censorship of *message and intent*.

For example, because **Not A Love Story's** *intention* was to condemn the pornography industry, its screening has been tolerated by the community--*despite the film's inclusion of several sexually explicit scenes*. The Ontario Censor Board, of course, was legally obliged to disallow the commercial showing of the film by virtue of our *old-fashioned* (though not *out-dated*) censorship laws based on *explicitness*. But had the film been made to show that sex was humorous, fun, or otherwise benign, the odds of it being publicly shown in this province would have been about as high as the odds of finding Mary Brown or Judy Erola *appearing* in such a film.

'I can't imagine--can't imagine--myself undressing naked before the cameras,' Erola told students at the University of Western Ontario last January. Meaning, of course, that she wasn't about to allow *us* to imagine *anybody else* doing it either. So there!

One wonders where the visible outcry against all those so-called 'historical romance' novels, Harold Robbins' novels, etc. might be lurking. Between the covers of **Secret Sins**, **Beyond Surrender**, **Scarlet Woman**, **Royal Slave**, **Rage and Desire**, **Fortune's Fugitive**, **The Magnificent Strangers**, **Passion's Promise**, **Golden Stud**, **Sweet Rush Of Passion**, **The Adventurers**, lie many of the same sexual myths and stereotypes that are claimed to exist in the form of *visual* pornography. Where are the protesters? *These books are 'Not A Love Story' either!*--just more fantasies of a slightly different nature and with a different audience.

But there is no 'Ontario Censor Board' for the non-explicit media of *written* 'historical romance' books. If there *were*, it would only be a matter of a very short time before someone would be wanting to impose *their* values and standards on yet another media form.

Paradoxically, it is *because of the existence of a censorship board* that pornography has become such

a contentious issue. But a precedent has been set. After all, if it's OK to control what people may see in *one* media, why not in all media, including the *print* media? And if it is permissible to censor publications on the basis of one's disagreement with their *sexual* opinions, why not censor them on the basis of *any* disagreement that one might have with them?

As if to fulfill prophecy, it is precisely this type of logic that is being employed in the latest drive to increase the range of censorship in this country. Among its sponsors: our own local London Status of Women Action Group (LSWAG), whose blind disregard for the opinions of others is no longer concealed behind the thin veneer of 'concern' they exhibit for the 'status of women', or for any other group for that matter.

In their latest (government sponsored yet!) drive to rid the city of material *they* find objectionable, the LSWAG has set up a special team of political activists to pressure variety stores, department stores, video stores, and book stores into renouncing the folly of their ways and stop selling what *they* call 'pornography'. The project's manager, Rosemarie Cochrane, in a revealing comment about **Playboy** and **Penthouse**, was quoted by the **London Free Press** as saying that one of her many objections to those magazines was that 'They take issues (like rape and incest) that are very serious and make jokes out of them.'

Indeed! And what about **Mad** magazine, **National Lampoon**, and just about every newspaper in this country? What does she think that *their* editorial cartoons and jokes are based on? The *non-serious* issues of war, taxes, inflation, economic depression, political corruption, no doubt. We also note that no mention was made of those **Hustler** cartoons that are commentaries on the 'serious' issue of *abortion*. **Hustler's** editor and publisher, Larry Flynt, in a rare departure from most sex-magazine publishers, has stated his personal *opposition* to abortion on demand, an unpopular (though also quite 'serious') viewpoint from the LSWAG's point of view.

But abortion is an issue that is more apt to get the LSWAG into trouble, since their *support* of it could alienate the censorship supporters who are *opposed* to abortion. Politics makes strange bedfellows.

And as if to add insult to injury, Cochrane went so far as to say that her 'action group' has plans to show the public the difference between 'erotica' and pornography by having a show of erotic art. Speaking for myself, I can only say that I have about as much interest in what turns *her* on (sexually) as I would hope she has in what might turn *me* on sexually--namely, *none*. (Unfortunately, this is not the case.) As to the utter hypocrisy inherent in such a suggestion, well, it speaks for itself (and further supports our claim that part of the motive behind censorship is *the promotion of one's own opinions*).

Finding themselves in a bind with the current censorship legislation, the LSWAG is upset that criminal convictions are only warranted where a publication is of a sexual nature, and not warranted on the grounds of depicting violence or cruelty. But this may soon no longer be an obstacle to such groups. With federal legislation pending to *change the definition* (convenient, isn't it?) of obscenity to read '...the undue exploitation of any one or more of the following subjects, namely, sex, violence, crime, horror, or cruelty through degrading representation of a male or female person,' the LSWAG may soon have its way.

Where will it all stop? It won't--history has proven that time and time again. Censorship and media control are on the march in Canada.

We must bear in mind that 'censorship' in Canada is not just some isolated phenomenon that deals only with matters of explicit sex or violence. Remember that this is the country that has a Canadian Radio and Television Commission to control and regulate what we are allowed to see and hear on the airwaves. This is the same country that forcibly takes your tax dollars and spends them on the state-owned C.B.C., the 'arts' (whose definition of art?), and on all that government 'advertising' designed to keep us



informed of the latest bureaucratic 'services' that we all pay for, but few of us actually use.

This is the country that imposes bi-lingualism and metric, threatening its citizens with fines and jail terms for failure to comply. This is the same country that boasts an 'Official Secrets Act' and a 'National Emergency Act' that includes, of all things, the establishment of civilian interment camps as a potential 'tool' to deal with those 800,000 Canadians on Kaplan's list 'suspected of engaging in subversive anti-government activities.'

This is the same country that, in response to its R.C.M.P. 'wrongdoings', established a new 'civilian security force' with unprecedented power and privilege. This is the country that expelled 'The Way' for daring to express its religious opinions and whose 'Royal Commission on Newspapers' has led to the tabling of anti-press legislation which effectively limits the geographical field of expression to the press.

Yet, despite all these ominous trends, our censorship advocates are unrelenting in *handing to the government even more arbitrary power* by expanding the field of censorship to sex, violence, crime, horror, and cruelty.

Who will be given the god-like power of interpreting what is 'undue', 'degrading', or 'exploitative'? Who will determine the consequences and penalties to be borne by those charged with such obviously *subjective* criteria? How can one defend oneself in a court of law where there is no *objectivity*, no *victim* to press charges, and above all, where the *state* acts as prosecutor, plaintive, and sentencer for a 'crime' that affects nothing but the *thoughts of the defendant*?

I submit that there is no moral *obscenity* greater than the advocacy of such laws.

And while groups like the LSWAG are ranting and raving about the actions and reading habits of *consenting adults*, consider the implications of the sex scandal involving Quebec national assembly member Gilles Gregoire who has been *twice* convicted of having sexual relations with children, and whose position (and salary, paid by the taxpayer) in the assembly has been protected by the court by giving him a sentence of two years less a day. Consider further the comments of Judge Andre Sirois whose order to bar reporters from the court room was based on the argument that coverage of the trial bordered on 'pornography'. The *truth*, apparently, is of no concern.

Given our pending legislation on obscenity, just how long do you suppose it will take before some judge somewhere else in the country can bar reporters from a court room on the basis of reporting on cases that involve 'undue' violence, crime, or horror? It can't happen *here*, you say?

Famous last words.

There is an inescapable reality inherent in the existence of censorship powers--once established, *it becomes only a matter of time* before the umbrella of censorship is extended over not just what we may think or say about *sex*, but about every other subject as well. Like it or not, one man's freedom to read pornography, is another man's freedom to read the Bible.

Amen.

WHAT IS A RIGHT ANYWAY?

by John Cossar

The word, "right(s)", is bandied about in so many contexts, such as labour rights, women's rights, French rights, English rights, gay rights, the right to a job, the right to a decent living, etc., and yet few people stop to examine and define the key term. Frequent appeals for the rights of minority groups bombard us in the news every day. How many of us stop to ask just what these minority groups are asking for? Are they merely asking for the same recognition under the law as everyone else, or are they asking for special preferred status under the law? Most of our confusion could be cleared away if we understood the meaning of the word, "rights".

The Compact Dictionary of Canadian English can give us some help, but not much. It's definition of "right" as a noun in our context is "a moral or legal claim", special cases being "civil rights" and "natural rights". Our question is, "When are these moral or legal claims justified and how are they justified?"

Consider the world with only one human inhabitant. Let's call him Adam. Clearly, Adam's rights in this lonely world would be little more than abstract concepts in Adam's mind. Adam could say to himself, "I have the right to stay alive!" but since no-one else would share his feeling or even understand his language, his ability to stay alive would still rest on his cleverness, agility and willingness to work toward the goal of staying alive. Adam, being the only human, can have no definable moral or legal claims.

In other words, he has *no rights*.

Now let's suppose Adam has a companion. Let's call her Eve. (Why not, almost everyone else does.) With two people, the situation becomes more complicated. Each can understand the other's language and each can deal with the other in one of four ways: (1) by *trading* things (2) by agreeing on and co-operating towards a goal, (3) by *giving* without expecting anything in return, (4) by *begging* for such gifts, and (5) by using *aggressive physical force* or the clear threat of force.

RIGHT

Clearly, for there to exist meaningful rights in this world, both Adam and Eve must agree on what they are. If Adam, for instance, thinks he has a certain right (moral or legal claim upon Eve), but Eve doesn't agree, then Adam is in the same situation he was before Eve arrived on the scene. Adam can have no rights without Eve's consent, and vice-versa. Both Adam and Eve must agree, let's say, that one or the other has the right not to be disturbed while taking a bath on Sunday before such a "moral or legal claim" can have any meaning.

Some of the possible rights which Adam and Eve might impart to each other can be listed: suppose they decide that...(1) neither one shall use force to endanger the other's life or health; (2) neither one shall use force to take the other's property.

Here we have an example of what the dictionary calls "civil" or "natural rights", that is, the right to be secure in person and property from assault and seizure. These are the easiest kind of rights to delineate and to uphold, because their carrying out involves *absence* of human action rather than *initiation* of human action.

If Adam and Eve do nothing else but mind their own business, and deal with each other only by trading, giving or begging, then their rights in regard to the two categories listed above will have been upheld. Only if one or the other uses *force* will rights have been violated.

This kind of right is also the easiest and most logical to extend to a larger group of people. Such rights could easily be extended to a dozen, a thousand, or any number of millions of people as long as all of them agreed not to use force against any one of the others.

However, when more than two people are involved, the concept of third-party adjudication may come into play. With only three people, it's not likely but with thousands of people it's almost inevitable. If it's just Adam and Eve, or just them and Moses, their only court of appeal is a return to the rule of the jungle. When thousands of people share rights in

common, it becomes possible for several strong and vocal people to market their services as judges. Just as in the simple two-person case, no rights have meaning unless both parties agree on what they are, in the multi-person case, rights have little meaning unless all people agree on them and all are willing to abide by the decision of the judge in cases where rights have been violated.

RIGHT

The complications which can arise from this third-party adjudication are almost infinite in number, as any lawyer will likely admit. When a judge has an obvious conflict of interest and inspires no faith in his impartiality, the case must either go to another judge, a higher court or back to the rule of the jungle. Stacks of lawbooks have been written on the subject of these very simplest of "natural rights", the right to be free from assault and theft. Although the legal twists have grown and multiplied, most people in semi-free countries such as ours understand and have given their silent consent to the validity of these rights.

Without such understanding and consent, these rights would have no validity. They are, in effect, a contract which we all share; a trade--I give up all my claims to your life and property in order to have greater security for my own life and property. Everyone understands that to violate this contract involves grave risks. Life without such a contract (humans being the clever little apes they are) would be hopelessly unpredictable and precarious.

What about some of the other rights people claim from time to time?

One finds upon examination that either they represent a special case of our original definition of "natural rights" or that they are not justifiable rights at all. They are, instead, *violations* of natural rights: **Smokers' Rights vs. Non-smokers' Rights:** A smoker has a natural right to pollute his own body but no right to pollute other people's bodies and property unless, of course, they give their consent. This is clearly a case of natural rights which has been clouded and confused by the concept of "public property". Adam and Eve could have consented to let each other blow smoke in each other's faces but in the absence of such consent, and given their previous commitment not to use force to endanger each other's life or health, each has a legal claim to prohibit the other's smoking.

The Right to Clean Air, Clean Water and a Clean, Natural Environment: This is also a case of natural rights which has become confused by the concept of "public property". Natural rights dictate that polluters should be free to pollute their own property but not anyone else's. Unfortunately, most polluters either operate on public property (Ontario Hydro, municipal dumps and sewage systems) or chuck their wastes into publicly owned lakes, rivers and airways.

Since our government does not allow class-action suits against polluters and since it grants exemptions to the law to the biggest polluters (Inco, Hydro, large pulp and paper and mining companies) and since the Ontario cabinet sets exclusive "limits" on the amount of filth produced, no-one even bothers to sue any more. Ideally, the polluters should pay the cost of restoring the property of their victims to its original natural state or at least compensate property-owners for the loss of enjoyment of their land. Pollution is a form of assault which goes largely unpunished in our country.

RIGHT

Canada's Native Rights: There is no single legal claim which covers all of Canada's native people. Instead there is a confusing patchwork of treaties with various native bands and various provincial and federal governments. Most of these treaties were deals in which natives gave up their claim to the most productive farmland to white settlers in return for a guarantee of residence in perpetuity on certain crown lands (called *reserves*), exclusive hunting and

fishing rights on certain crown lands, and a monetary settlement which, in most cases, was also to last in perpetuity.

Natives have no mineral rights, but then neither does any Canadian landowner. This is yet another case confused by the concept of "public property". The original white settlers are long gone but the monetary settlement continues in perpetuity, and no native band yet has clear title to its land. The stalling techniques of both the government bureaucracies and the native leadership in trying to arrive at even a semi-permanent settlement of land claims is mind-boggling, and it has been dragged on for so long because no government official wants to admit that this is exclusively and issue about *property rights*. (Remember? Canadians don't have property rights, at least not in their constitution.)

RIGHT

Minority Language Rights: Canada has two official languages, so perhaps when we're talking about minority language rights, we're not talking about French or English. And yet, when we see news stories about language rights, it's always the French and the English who are complaining. What about the Italians, the Germans, the Ukrainians, the Poles and the Czechs? How come they never complain? What about the Chinese? Entire major city blocks in Toronto, Vancouver, Montreal, Thunder Bay, and Sault Ste. Marie speak another language besides English and French. (Many rural farming communities as well).

There is still another case of rights muddled by "public property", in this instance, the schools, courts, bureaucracies and other impositions of government. Natural rights include the right to speak whatever language a person wants to speak because freedom of expression is as much a part of one's life, one's health and one's property as breathing. It does *not* include the power to force other people to speak the same language, for that would obviously deny their natural rights to speak the language of *their* choice.

The French-English language war is a consequence of considering all schools and most commercial businesses as public property.

Strangely enough, I have no objections to walking into a Greek pool hall and having to listen to everyone in there speak Greek, even though I don't understand a word of it. Public institutions, however, just don't seem to be able to operate unless everyone in those institutions is forced to speak a certain language, sometimes even two languages. Why not abide by the principle of natural rights and let people support the schools and institutions of their choice operating in the language of their choice? Surely Switzerland is an example of the fact that language isn't something to go to war about.

The Right to a Job Here we have an example of a so-called right which cannot be exercised without violating other people's natural rights, as we have defined them.

Let's go back to Adam and Eve. Suppose they decide that whenever one or the other has nothing to do and is short of cash, either one can trot over to the other's barnyard and shovel manure for a few hours, write up a bill and be entitled to some kind of reward for services rendered. That would be a perfectly legitimate agreement for them to enter into. However, without mutual consent, agreed upon beforehand, any action of that kind would be an invasion of property, subject to a penalty rather than a reward.

No such agreement has, to my knowledge, ever been voluntarily endorsed by large numbers of people, and for good reason. How would you feel if a complete stranger came over to your house on Sunday, washed your windows and sent you the bill next Tuesday? Surely any such agreement must place strict limitations on your privacy rights, property rights and ability to sustain, in payments, the flood of monetary claims you are sure to receive.

Yet the NDP continues to argue for the "right to a job" and not one of our elected MPs has taken the

Womens' rights, Smokers' rights, Gay rights, Animal rights, Union right⁹

trouble to thoroughly discredit this concept, which *cannot work in practice* and which *violates the principles of natural rights*. There is, of course, one and only one way in which our government can satisfy everyone's desire for a job, and thereby claim that it is meeting a contrived statutory *right* to a job.

It is called *slavery*.

The Right to a Decent Living Suppose Adam and Eve decided that each would look after the other and sustain the other should he or she fall ill or not be able to obtain enough sustenance from the land. That would be OK as long as they agreed to it. Without *consent*, such a legal claim, or *right*, does not exist.

There is a large, nebulous, amorphous feeling in this country that maybe we'd like to guarantee such a right to all of the less fortunate people, but maybe we can't afford it, maybe we shouldn't take the risk, etc. The greatest stumbling block that stands in the way of such an agreement ever being spelled out is people's feeling "Why worry? The government is looking after it." But the government can't speak for all the people. Try and find two people you know who can even agree on what constitutes a "decent living".

Meanwhile, the trifling amount our government does out to really poor people pales in comparison to the amount it gives to really rich people--billions of dollars in subsidies to Canadair to build executive jets at a loss so that oil-rich Arab princes and multi-national corporate executive bosses can fly on the cheap courtesy of the Canadian taxpayer.

Let's face it. A general agreement to provide all citizens with a decent living, whatever that is, does not exist. It *could* exist, but not with the kind of government we have now. There is one and only one way our present type of government could claim to have satisfied everyone's desire for a decent living. It's called *rationing*.

In a very real sense, the right to a decent living is being provided now by voluntary agencies other than government. Keeping in mind that this type of right (legal claim) is not absolute but entails both risk and ability to pay for it, private insurance companies are providing death and disability benefits, home and property protection, health care benefits and many kinds of other disaster benefits.

Private charitable foundations are providing benefits to people who cannot afford to pay for it. Because they are all *voluntary* agreements, they are far closer to the Adam and Eve mutual contract described above than are the compulsory, tax-supported schemes enforced by our government, which violate natural rights in order to create new, non-legitimate rights.

The Rights Of The Unborn: In accordance with the sense of the word "rights" we are using here, the unborn can have no rights except such rights as are given by their mothers or by their mothers'

friends and benefactors. Being in the womb cannot carry any *automatic* rights because an unborn child cannot demonstrate a willingness to fight for or to pay for any rights. An unborn, or for that matter, a newborn child is a gift of nature, and it would be better for all concerned about their welfare to see them as such, rather than to have their entry into the world complicated and defiled by bureaucratic decisions.

Children are everywhere considered precious. Ill treatment is frowned upon. Abortion is also frowned upon, and for good reason: it is anti-life. However, it is insupportable to convey upon unborn children the same rights as self-supporting adults. Not only is there lack of consent from all pregnant women to grant their unborn these rights, but there is also a general lack of consent from the entire adult population, the people who would be forced to pay for policing abortionists should abortion be declared illegal.

As good chance would have it and, I believe, as individual freedom would have it, the rights of the unborn *are growing each day*; not by government decree but by the voluntary support offered by concerned people to mothers in distress and by the proliferation of private adoption agencies, some of which even risk crossing the Canada-U.S. border in violation of our outmoded, nineteenth century laws.

Many more examples of rights and pseudo-rights could have been presented. (Queries welcome!) Enough was here to demonstrate a few points about rights:

- (1) No right is absolute.
- (2) Most rights (legal claims) must be paid for, either in kind or in currency. Rights, like any other commodity, are usually a matter of trade, seldom given without expectation of return.
- (3) All rights involve consent. No right (legal claim upon another human) has much validity without the other human's consent.
- (4) so-called "natural rights", the right to be free from assault and theft, are high on the list because they are the simplest of rights to define, to defend, and for large numbers of people, to agree upon.

PARENTS PERMITTED A SCHOOL OF THEIR CHOICE

Below is a rebuttal to arguments expressed last issue by H.K. Vandezande, dealing with the question: Should parents be permitted to direct their education taxes to a school of their choice? Claiming that the arguments put forth by Mr. Wheable in our last issue were already dealt with in his original

submission, Mr. Vandezande has declined to submit his rebuttal. We wish to extend our thanks to Mr. Wheable who, despite his similar feelings on the subject, chose to honour his commitment to the *MetroBulletin* by submitting his rebuttal:

I read with interest the position of Mr. H. K. Vandezande supporting government funding of *private* education.

With due respect, most of the article is a red herring. It deals with the problem of whether or not parents should be free to send their children to private schools. In Ontario, *they already have that right*.

Mr. Vandezande says 'Family choice education should not pose a financial or other special hardship on those who exercise that choice.' This is a dangerous principle indeed. *All choices involve costs*. This principle is one of the methods we use to logically ration delivery of services. If we did not have this method, we would be forced as a people and as taxpayers to *subsidize everyone* so that costing was not a function in their choices.

For an example from the education sphere, if we had someone in the west end of this city who wishes to send their child to school in the centre (and they can and often do), we as citizens of London would be forced to subsidize the additional transportation costs of those parents. One of the important elements of individual decision making is to realize that decisions do have *both* benefits and costs.

It is a misrepresentation of the Ontario education scene and of London in

particular to say that public education supports only a single lifestyle. Insofar as accommodation will allow, we allow *free choice* anywhere within our system. We have approximately eighty sites offering education, including a number of very special initiatives and alternatives.

To complement this choice, the Province will transport its per pupil provincial school grant to other public school systems if that is the desire of the student or his or her family and has put a limit on tuition fees charged by public bodies.

It is interesting to note that Mr. Vandezande wishes the general population to *subsidize private schools*. The source of the provincial per pupil grant is a combination of provincially collected taxes such as income tax and retail sales tax. As these taxes are not collected on a per capita basis nor are they collected only from the twenty-eight per cent of the adult population who have student-aged children, this is a direct grab at the pockets of all those who do not send their children to private schools. In Mr. Vandezande's argument, individual choice has become *individual choice to tax* the general population.

If we are only concerned about the education of our own children and not of everyone's, then we cannot ask everyone to pay for that education. It is only by accepting *public* education as a necessity that we can justify *public* taxation.

-by Alan E. Wheable

TANSTAAFL

-Rob Smeenk

For those of you who think that the price of Trudeau's socialism is not excessive, let me assure you that the price to us consumers is very high indeed.

Let me illustrate with a typical example. The price of gasoline is currently around 48 cents per litre or about \$2.16 per gallon. For a twenty gallon tank, that costs \$43.20 in *after-tax dollars*.

For the average mid-sized car owner in a 20-25% tax bracket to spend \$43.20 that person would have to earn \$55.00. Seventy-five percent of the cost of fuel is directly attributed to one form or another of government tax.

On a \$43.20 purchase then, \$32.40 is attributable to tax and \$10.80 is what the producers, manufacturers, and retailers actually get paid for their product. Ergo--we must earn \$55.00 to buy \$10.80 worth of product.

Does this make any *sense*?

Is there any justification for such ludicrousness?

Do you see the consequences of government interference in the marketplace?

The American Revolution started over a one cent tea tax at the Boston Tea Party, while we as Canadians sit glumly back and accept this government rape. They steal our money for their hand-out programs and bailouts and justify it by calling it a tax. The government's fiscal irresponsibility as outlined by the Auditor-General on several occasions is second to none, yet we do nothing.

When will Canadians recognize the truth in the beautiful simplicity of this word--TANSTAAFL.

There ain't no such thing as a free lunch.

IN DEFENCE OF VARIETY STORE 'SMUT'



London Status of Women
Action Group

P.O. Box 7011
Station E
London, Ontario N5Y 4J9

July 22, 1983

Recently, my bookstore, City Lights Bookshop, received the letter on the left. The sponsor of the letter, U.W.O. psychologist Gail Hutchinson and the London Status of Women Action Group, proceed to describe sexually explicit material (in their words) that we sell, and encourage us *not* to sell it. After encouraging us, they threaten us by printing the vagaries of the Criminal Code. The ambiguous law could be enforced if enough of these feminists complain to the police (as they are doing constantly, I imagine).

They even go so far as to act as our lawyer, telling us we don't have to sell anything we don't want to.

As usual, the letter uses endless terms to describe sex magazines, including 'unreal, demeaning, and abusive,' and the now-classic 'degrades and exploits'. I'm sure if I look in my dictionary to find the definition for 'degrades', it will say 'see *exploit*' and vice-versa.

What would happen if all variety stores stopped selling explicit magazines?

First, basics that everyone buys (milk, butter, bread, eggs) would sharply rise in price.

Why? Because *independent* variety stores handle these items at a loss or break-even margin. Their losses from milk and bread are covered by the sale of high-profit sundry items like sex magazines.

For example, on a \$4.00 purchase of milk, the independent variety store owner makes eleven cents above the cost of the product, and he is required to have expensive refrigeration, electricity to keep it cool and handle it daily.

On a \$4 sex magazine, the retailer makes eighty cents to \$1.60 without any handling, electricity, and little use of space.

Now obviously if you cancel one highly profitable area in a store it has to show up in the price of other items.

In order to eliminate sex magazines to salve the paranoid anti-male bias of LSWAG, families are going to have to spend more on essentials like butter, bread, etc. This hits single parents, the poor, large families, those without vehicles (who cannot access grocery stores conveniently) across the board. Ironically, the price increase would be absorbed by those who had no disagreement with store policy in the first place; the anti-porn types would have long since stopped patronizing that variety store. (Since that is 100 or so loony feminists city-wide anyway, no skin off anybody's nose.)

Worse, this feminist 'lust' for *mind-control* (let's face it, that's what they want) will only serve to put smaller, independent variety stores out of business and reinforce the growing near-monopoly status of the Mac's Milk store chain.

Mac's sells only *Playboy*, *Penthouse* and the already censored 'international' version of *Hustler* (occasionally others), a small selection compared with many variety stores.

Why does Mac's do this? Not because they are overly concerned about any mythical 'degradation' of women (or else they wouldn't handle any of them), but because it encourages loitering (their stores are larger than most and less easy to monitor), and most importantly, they already make a much higher margin of profit than independent variety stores.

Because they are a chain, Mac's buys in huge bulk quantities, giving them a discount not available to independents who must buy at a much higher price from local distributors.

It is Mac's policy that a number of stores are open twenty-four hours, something only a chain with heavy financial resources can support in the first few years when opening 24 hours is unprofitable.

This 'ban the porn' policy LSWAG advocates would seriously impair the ability of independents to survive, it would disenfranchise their customers who buy milk *and* sex magazines, it would increase the burden on single parents, those without cars, and large families. Ultimately, the LSWAG position is *racist and sexist* as well.

Racist because most independent variety stores are now owned by Korean, Chinese, and Vietnamese immigrants who have their entire family assets sunk into these corner store ventures. These are the people who must make a regular profit in order to pay not just suppliers, but their bank loans and creditors as well.

These are the new Canadians that Gail Hutchinson and gang would like to bankrupt and say 'well, hell, that's one less porno distributor we have to worry about.'

Sending them this letter is like asking them to go out of business.

Yeah, welcome to Canada, land of opportunity and freedom.

Oh yeah.

Sexist because sex magazines are bought by women and homosexuals too. As a female caller to the Open Line (CFPL-AM talk show) remarked on the subject of 'variety store sex material': 'I'm a widower and I don't have access to a sexual relationship, so these magazines provide diversion.'

What about the handicapped who can't have a regular sexual relationship? What about the aged, the widowed, the adolescent, the divorced, the shy, those with herpes, the single person? When they have no sexual relationship, would *you* be the one to tell them 'You're not entitled to any pleasure (masturbation)! These magazines are the main source of such stimulation, and it's really nobody's goddamn business, especially that of a bunch of anti-sex feminists who regard penises as weaponry and all men as potential aggressors, rapists, etc.

And if sex magazines 'degrade' *women*, why isn't Gail and the gang ranting on about sex magazines degrading *men*? There is a goodly quantity of gay men's magazines at every variety store (*Honcho*, *Blueboy*, *Starz*, *Mandate* and about twenty other titles) and one would assume that 'degradation' is 'degradation' We must assume that it's OK for men to 'degrade' other *men*, just hands off the women-folk.

City Lights
355 Richmond St.
London, Ontario

Dear Madam/Sir:

Recently a city-wide survey was completed, documenting the distribution and sale of pornographic magazines in local stores. Some of these magazines feature explicit violence against women, and even the sexual use of children for male pleasure; all of them, including *Playboy*, *Penthouse*, *Hustler*, *Oui*, etc., cynically and systematically exploit and degrade women. It is not the explicitness of sexual material that we find unacceptable, but their unreal, demeaning, and abusive portrayal of women as objects for men's sexual use. Recent research has indicated a clear connection between pornography and real-life abuse of women.

Increasing numbers of London residents are expressing anger that the grocery, variety, drug, and department stores they shop at are distributing and profiting from pornography under the guise of "adult entertainment". There are alternatives available; growing numbers of London stores are refusing to carry pornographic magazines. Most neighbourhoods have at least one or two stores that are pornography-free, and we will be identifying these and encouraging concerned citizens to give them their business.

We are well aware that stores are not obligated by magazine distributors to buy or display pornographic magazines in order to acquire other magazines to retail; pornographic magazines that arrive as part of a package deal can be sent back to the distributor. If your store has not already done so, we would urge you to stop selling these magazines and thereby refuse to profit from the exploitation of women. If you are willing to stop selling such material please notify us at the above address and we will add you to our list of recommended stores.

Sincerely,

Gail Hutchinson

Dr. Gail Hutchinson

INFORMATION FOR RETAILERS

Some London retailers have indicated to members of our committee that they are forced by their distributors to display pornographic magazines. We have prepared the following information which summarizes the legal position of retailers in this regard.

Is it illegal to sell a pornographic magazine?

Under the Criminal Code of Canada it is an offence to knowingly sell or expose to the public view any obscene written matter or picture.

The Criminal Code defines "obscenity" as follows:

- s. 159(8) For the purposes of this Act, any publication a dominant characteristic of which is the undue exploitation of sex, or of sex and any one or more of the following subjects, namely, crime, horror, cruelty and violence, shall be deemed to be obscene.

Can my distributor force me to sell pornographic magazines?

You are under no obligation to accept any publication from your distributor which you feel may be obscene. Any person who refuses to sell or supply you with non-obscene magazines unless you also accept what you think may be obscene material is committing an offence under s. 161 of the Criminal Code. For your information that section is set out below:

Tied Sales

- s. 161 Every one commits an offence who refuses to sell or supply to any other person copies of any publication for the reason only that such other person refuses to purchase or acquire from him copies of any other publication that such other person is apprehensive may be obscene or a crime comic.

If your distributor tries to force you to accept pornographic magazines by refusing to sell or supply you with non-pornographic magazines, notify the London Police Department, Criminal Investigation Division at 679-5670.

R. Cochrane, B.A., LL.B.
Project Manager
Pornography and Violence Against Women
Research Project

What's really obscene...

But feminists would regard these gay magazines in the same light, because they involve most of the same *attitudes* (aggression, passiveness, etc.) and they'd love to get rid of these too.

But with herpes and AIDS (Acquired Immunity Deficiency Syndrome) causing widespread fear and anxiety amongst homosexuals, these magazines are more required than ever.

Homosexuals are simply far more sexually active than heterosexuals and if we *by law* or other manipulation deprive them of safe, in-house solitary stimulation (i.e., by banning gay mags), then you're advocating disease-spreading promiscuity.

And you'll pay for their health care (you pay in taxes for that). More humanely, I'd feel a whole lot better knowing that someone's alive and reading smut than diseased and dying (or worse, spreading it around).

But what the heck, I'm a 'Live and let live' sort of person; I'm concerned about people being able to say, see and do what they want amongst consenting adults. Sort of old fashioned I guess. Not like some people we know.

What's *really* obscene though, is the reality that we hard-working variety store retailers and booksellers are paying income tax, collecting sales and payroll tax for the government and then we have to watch them hand over \$10,000 to Gail and the gang so they can raise some shit in the community by *using our own money against us*.

It's bad enough she's permanently on the government teat sucking up taxpayer's dollars as a 'career consultant' at U.W.O., but then she and LSWAG get more of our money to spout these political and personal beliefs that she tries to pass off as some legitimate sociological issue.

These parasites passing themselves off as crusading intellectuals are, sadly, doing well at their loony-tune campaign. They are ably being abetted by the *London Free Press*, who have someone on staff you'd swear was a paid public relations representative for LSWAG: Helen Connell.

As though it were ritual, every two weeks or so, the latest LSWAG diatribe shows up like dirty laundry in the front section of the *Free Press*, or more recently, on the front page.

Ms. Connell rarely (though in fairness, she did on one occasion) asks anyone in the variety-store or magazine trade for the other side of the coin.

At the 'bottom' of this, Gail & Co. say it's not *sex* they're against (we must assume that even they engage in it occasionally) or the 'explicitness of sexual material', but against attitudes, interpretations, fantasies, and *portrayals*.

'Unreal, demeaning and abusive' one hundred years ago was the prevailing Protestant-Calvinist attitude towards the sex act itself.

Today, I take it, these terms mean 'bondage' (where one partner is tied up with rope or leather restraints), 'discipline' (where women or men are paddled on the bum and act submissively), 'seduction' (where women, I understand, are overwhelmed by the raw 'masculinity' of

...is having to watch the government hand over \$10,000 in grant money to these would-be tyrants so they can raise hell in the community ---using our own money against us.

their conqueror and 'submit'; sort of like a *Harlequin* romance except here they take their clothes off and go at it) and this sort of thing.

In fact, it can get pretty kinky. Here is a 'letters' magazine index for one issue; for each chapter there are two or three letters describing some act or fantasy (supposedly written by the readers, but who cares):

This covers a pretty wide range of topics, and these 'letters' magazines are popular (over thirty titles a month) and appeal to a lot more *women* than photo sex magazines generally do. (I know, I sell them.)

If you're not into *at least one* of the above subjects, then you're not normal (or you're under 21). If you object or find repulsive any one or more of the above, that's normal too.



DIGEST PRESENTS INTIMATE LETTERS

VOL. 2, NO. 5

NOVEMBER 1982.

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The issue here is choice. *The power to abolish what you don't like is the power to abolish the material you do like.*

And if I showed the above chart to 100 random people, I'd get back 100 different lists of 'preferences', and also 100 lists of 'repulsive things'. (The incest column is, incidentally, with family members all over eighteen. And these are *words* only.)

If you think variety store reliance on porn is 'a sad commentary on the world today' (as I hear from the righteously indignant), why the hell are you worried?

You don't *buy* it, and those who do are keeping your bread and milk cheap.

When anyone feels personally threatened by what other people read, then *that* is weird. The world is replete with dangerous people (they will always exist) and dangerous reading (*Mein Kampf*, *Das Kapital*, and the *Bible* have yet to be banned for the carnage they have caused). In the hands of certain weak-minded idiots, anything is possible.

Freedom is taking the risk that there will always be some abuse of it, but knowing that the environment of freedom for all is the most valuable social condition. Otherwise, you have *tyranny*, which guarantees oppression for everyone under the pretext of stopping a loony-tune fringe.

Aside from their blatant fascism, LSWAG and like feminists trot out studies that they would like us to believe prove that porn causes wife-abuse (*marriage* causes abuse, don't get married to a psycho and you won't get abused), and rape (rape was far more predominant a hundred years ago when there was no porn, and rape is far more widespread in third-world nations where porn is banned. Why?---because the men in these cultures use women as chattel in *reality*, our system allows it only in *fantasy*.) Of course, their assertions are garbage based on garbage.

Their big study, the 'Donnerstein Study' is replete with qualifications, ifs, buts, maybes, could bes, might be possible, perhaps, etc. It *proves* nothing.

This 37-page study even then concludes 'there is little evidence at this time to indicate that exposure to aggressive pornography increases a person's sexual responsiveness to such stimuli'. It also then states in another study, Malmuth et al, 'no evidence was found in changes of perception or attitudes following exposure to aggressive pornography.'

Yet, this report is so contradictory that it is virtually useless except possibly as a demonstration of the intellectual bankruptcy of our university intellectuals.

A copy of this 37-page report is available at \$1.75 (photo-copy costs), call us.

Finally, one of the most insulting things about the LSWAG campaign is that it assumes women do not enjoy a lot of the unconventional sexual activities, particularly oral sex, anal sex, light bondage, spanking, etc.

A lot of women *like* this sort of thing with someone they love or care about, or with even someone they are sexually comfortable with. Men and women alternate between passive and aggressive roles, or whatever they are into. Magazines provide some impetus and new ideas.

Implying that all women are strait-laced, missionary position only virgins is dead wrong. In the context of a comfortable relationship, women are capable of enjoying virtually anything a man enjoys, aggression and all.

Ask a *real* woman sometime.

If the NDP can be described as 'Liberals in a hurry' by their detractors, the further irony is that upon finishing two recent platform books by 'conservatives', The Progressive Conservatives can be described as 'tardy Liberals'; liberals yes, but 'slower' and with bookkeepers' spectacles on.

Both books, *A Conservative Canada* by London South MPP Gordon Walker and *Where I Stand* by Brian Mulroney - astound the reader by addressing every issue from the context of liberalism and Liberal policy. While stating the abhorrence of Trudeau policy, both authors take pains to say, more or less, 'but we'll keep all those wonderful, life-enriching social programs, but because we're *businessmen*, we'll do it more efficiently.'

Same government, same policy, same bureaucracy, same buildings, different innkeepers.

The irony is that the books break no new ground except in their attempt to show (and re-inforce to the three thousand delegates at the PC leadership convention where Walker's book was distributed by the National Citizen's Coalition) that the conservative 'movement' has

some intellectuals, and, presumably, some ideas, philosophy and policy. That it *is*, in fact, a 'movement of ideas'.

If this duo of muddled twaddle passes as ideas, policy or philosophy, then the Canadian intellectual field in these areas is indeed bleak. But for politicians, it is important to have 'intellectual' statements available to *legitimize* what is almost exclusively the domain of scuzzy political opportunism and corrupt wheeling and dealing.

That *is* politics.

Ideas and philosophy, in that environment, at best serve to temper the more *blatantly* evil elements of the political system. Consequently, these books, while no doubt sincere offerings, do not reassure us that conservatism is not really liberalism done by an avowedly more prudent bunch. (We'll have to have faith in their prudence.)

Robert Metz reviews the PC leader Brian Mulroney's book, while Marc Emery reviews MPP Walker's book, further noted by an interview with the cabinet minister.

THE METROBULLETIN PROFILES THE MEN AND THEIR BOOKS

BRIAN MULRONEY AND GORD WALKER: CONTRADIC-TORY'S

BRIAN MULRONEY - A TRUE CONTRADIC-TORY

The only way [the Conservatives] can break into Quebec is with Mulroney.

-Peter C. Newman; *Toronto Star*, June 9, 1983

For the federal Conservative Party, the choice of Martin Brian Mulroney as its leader was quite possibly the best decision that the party has made in some time. He, more than any of the other candidates offered at last June's Tory leadership convention, is most likely to lead the Conservatives to a political victory over the federal Liberals in the next election.

'The Tories reached out last night to Mulroney's experience as a lawyer and a businessman, to his image of glamour and confidence, and to his promise---as a fully bilingual Quebecer---of being able to break the Liberal party's electoral stranglehold on that province,' said the editorial in June 12's *Sunday Star*.

But the key to Mulroney's success at the leadership convention can primarily be found in the *Star's* phrase, 'fully bilingual Quebecer', clearly *the* singlemost important reason for his leadership victory. It is, in fact, his ability to speak fluent French and his French-Canadian background that will now determine the tactics to be employed by the Conservative Party. And it is *political victory in Quebec* that Mulroney has presented as 'The Conservative Challenge' in the twelfth chapter of his book, *Where I Stand*.

Says Mulroney: 'With few if any exceptions, the Conservative Party has been consigned to the Opposition benches for one reason alone---its failure to win seats in the French-speaking areas of the nation. ...Our weakness in French Canada has turned the country into a one-party state.'

But a cursory review of Mulroney's 'conservative challenge' reveals not a change in philosophical direction, but rather a blueprint for a *political* challenge that could be adopted by *any* party wanting to gain *power in Quebec*. Included in his strategy is the establishment of 'a vigorous provincial Conservative Party in Quebec', the subsidization of such a party by the national party, the launching of a membership drive, the holding of several small policy conventions, and the seeking of 'top Quebecers, francophone Ontarians, and Acadians' for all the *decision making* bodies in the Party.

Certainly, as a strategist, influencer, and mediator, Mulroney has proven his abilities in the world of 'private enterprise', most notably with his success at resolving the sometimes violent labour disputes that were troubling the *Iron Ore Company of Canada* in the latter seventies.

But when it comes to *philosophy*, Mulroney is frighteningly contradictory, evasive, and non-committal. 'I didn't get to where I am in life,' quotes the *Toronto Star*, 'by giving answers to questions

that are too complex and too difficult for immediate resolution.'

So don't be surprised if you suddenly find yourself running into various Mulroney supporters who support him for ideologically *opposite* reasons. For example, English-speaking Canadians might be happy to hear him say:

I do not believe in a theory of two nations, five nations, or ten nations. ...Nor do I believe in any concept that would give any one province an advantage over any other.

WHILE French-speaking Canadians would no doubt be delighted to hear Mulroney say:

Quebec is different, very different. ...That is why they must be protected and nurtured with a constancy and vigilance that can never be slackened.

And if you're presently on strike, or part of the ever-growing ranks of the unemployed, you'll be glad to know how Mulroney feels about *unions*:

I believe strongly in the value of vigorous trade unionism. Unions are indispensable instruments of social progress. The benefits of collective action are there for all to see.

(So are the costs! --ed.)

But take heart all you businessmen, corporate executives, shareholders, and consumers because Mulroney also believes that:

There must be a national commitment to civilizing labour relations in Canada. The adversarial system of labour relations ultimately produces just that---adversaries.

The contradictions go on and on. In an effort to appeal to all of the people all of the time, the Conservatives have certainly chosen the right man for the job.

IT'S IRON ORE ELSE

An interesting observation was made in the June 9th *Toronto Star*: 'Mulroney counters the complaint that he has not run for elected office by saying his first duty was to the *Iron Ore Company of Canada*, where he was president.' Indeed, after reading *Where I Stand*, I could only conclude that his first duty is *still* to the *Iron Ore Company of*

Canada.

Most of his second chapter, titled 'Civilizing Labour Relations,' is little more than an economic argument attempting to justify political involvement ('incentives') in the iron ore industry. After citing the tremendous competitive advantage that Brazil has in this industry, including subsidized rail transport, year-round shipping, ready access to major markets, a much richer iron ore content, cheap hydro power, no labour problems and even the weather, Mulroney argued that the 'viability of present iron ore operations' in West Labrador 'are tied directly to the ability to sell the product in direct competition with companies operating with the above advantages.'

'Our *collective commitment*,' says Mulroney, 'must be to a dramatic improvement in productivity'---at any cost, it seems. But why make a commitment to 'compete' in an industry where we don't have the advantage? Is it not the basis of *successful* competition to produce primarily only those products and services *where one has that competitive advantage*? After all, we don't see Brazil exporting hockey players, tomatoes, corn, tobacco, or any other products where *Canada* has an undisputable advantage.

Sounds like 'vested interests' to us.

And speaking of 'competition':

As...competition intensifies, ...trade barriers go up, and the vicious circle of protectionism chokes off our collective opportunities for recovery. ...Government in Canada must see its' role as creating with the private sector a greater and freer access to world markets and higher levels of trade.

But according to the *Toronto Star*, Mulroney is opposed to *free trade with the United States*. Says it's 'naive'.

More double-talk.

THE MULRONEY GAME PLAN

One of the first things that Mulroney wants to do to steer Canada towards 'economic recovery' is to create a 'national tripartite Productivity Commission, composed of labour, management, and government.' (Not necessarily in that order.) Its' immediate objective would be to reach an 'agreement' on a fair manner in which productivity increases can be measured. Haven't these 'conservatives' ever heard of the *marketplace*? No doubt this 'agreement' will have to be implemented in the same manner in which Canadians 'agreed' to the forcible imposition of metric and bi-lingualism.

The establishment of this Productivity Commission would be accompanied by a *government advertising*

'TWO WRONGS MAKE A RIGHT (WING).'

campaign designed to 'inform' us of the virtues of restraint and the 'indispensability of such productivity-enhancement programs.' According to Mulroney, such advertising dollars would be 'well spent', unlike the 'self-serving advertising campaigns' that the *current* federal government wastes money on annually. (We wonder how long it will be before our 'Ministry of Truth' will be *officially* recognized for what it really is.)

It would be the job of this Productivity Commission to dangle 'carrots' (*our* carrots, by the way) 'that will make things happen for all those who contribute to it.'

'Productivity bargaining' would be established for 'certain sectors,' a process that Mulroney expects will be 'improved upon' and ultimately spread to other sectors of the economy.

And of course, what would a Productivity Commission be without an 'Industrial Strategy'? What indeed!

Unfortunately, Mulroney's 'industrial strategy' is really nothing more than an *official* entrenchment of the already existing marriage between the state, labour, and big business. For Mulroney, 'industrial strategy' equals 'Productivity Commission' equals 'industrial strategy'. But where the Liberals would use business and labour as a tool for the benefit of the *state*, and where the N.D.P. would use business and the state as a tool for the benefit of *labour*, the Conservatives would use the state and labour as a tool for the benefit of *business*.

'First we need co-operation; second, we need capital; and third, we need human resources,' says Mulroney. Translated: 'co-operation' means 'government enforcement'; 'capital' means more taxes or fewer services (or both); 'human resources' means cheap labour or wage and price controls.

Mulroney's justification of this approach to the economy actually sounds as if it were lifted from a socialist manifesto:

...There is nothing I see that is more painful to me...than the continual fighting and bitching that is going on among and between just about every major group in our society. ...It seems the phrase 'the common good' has been struck from our vocabulary.

Now consider Pierre Elliot Trudeau's comments made at St. Francis Xavier University in May 1982:

Overwhelmed by the rush of history, we have forgotten the fundamentally moral nature of human action. ...We have come to live side by side, without giving much thought to the common good. ...We have not seized control of our era.

Both Trudeau's and Mulroney's identical observations are simply not true. The *common good* has been and *is* the moral justification of *all* governments in the world today. Their only differences lie in *what* is considered to be the 'common good.' It is at *this* point that the question that must be addressed is: Do the ends justify the means?

It is through the use of the term 'the common good' that governments the world over have come to acquire an uncommon privilege. And yet, when it comes to Mulroney's appraisal of why Canada is in such a sad economic state, he actually has the nerve to say:

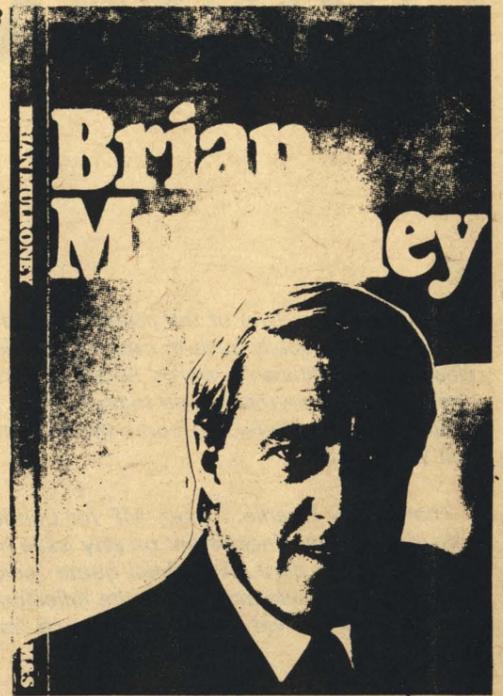
One major reason is that we have a federal government committed to a social democratic-collectivist philosophy. There is no room in its' vocabulary for words like risk, sacrifice, reward, initiative, enterprise and profit.

After praising the virtues of 'the common good' (a collectivist philosophy), it is almost laughable to witness Mulroney's criticism of Trudeau's government, whose central philosophy and justification of all its' policies has been and continues to be (what else?), 'the common good.'

Is anyone out there beginning to see *red*?

But the Productivity Commission (maybe we should more accurately call it the P.C.'s) is only half of Mulroney's 'industrial strategy.' The other half of the equation is what he calls 'research and development spending,' an area in which he feels that Canada has a 'sorry record.' But you don't even have to read *between* the lines to figure out what Mulroney is after when he talks about 'research and development.' Just read the lines themselves.

Despite his admission that 'the government, after all, has no money--it spends *our* money,' and that Canada requires a 'disciplined fiscal policy, i.e., less government spending, fewer giveaway programs, etc.,' Mulroney nonetheless calls for a 'firm



commitment to *double* the public and private funds allocated to research and development before 1985. ...It is important that the federal restraint program of 6 and 5 *not* be applied to research and development.' High technology, says Mulroney, will give Canada the competitive edge. After all,

If this country can afford to give total write-offs on third-rate motion pictures that no one would want to show even in his basement, we can certainly do no less for high-tech investments that will ensure a viable future for our children.

In other words, two wrongs make a right.

It will be interesting to observe how Mulroney might deal with the problem of 'investing' tax-payer's coercively collected money into 'high-technology,' when ultimately these same tax-payers will no doubt pressure the government to *restrict* technology, citing job losses and high unemployment as the results of its' use. And what about the reaction of taxpayers who will be forced to subsidize the research and development of companies (like the *Iron Ore Co. of Canada*) whose resulting profits will thus be earned at their expense?

But then, lest we forget, there's always that government advertising campaign to convince us that it's all good for us.

Specifically, both of these guys stand for the same nebulous platitudes as any other politician. Why would anyone buy these books?

While there is a good chapter in Walker's book, 'Victim's Rights' (ironically under the most criticism), most of this paen to 'conservative' virtues is a criticism of spending at the federal (Liberal) level crafted with laudatory sermons praising the virtue of Walker's own provincial government. Criticism of the federal government is general in **A Conservative Canada**, and has been done far more thoroughly by dozens of authors. Laudatory sermons congratulating the efficacy of the PC provincial government takes some heavy gulps to swallow, since many conservatives consider the provincial PC's indistinguishable from any Liberal party; Bill Davis is referred to by **Toronto Sun** columnists as 'the N.D.P. MPP from Brampton.'

Drawing sketchily from his experience in provincial government (where, we admit, Walker is one of the best Cabinet ministers there), Walker however makes no criticism of the provincial conservative government, despite the reality that most of his views in **A Conservative Canada** fail to be practiced by his own government. His total lack of 'complete' application of his philosophy to *all* conservative governments smacks of hypocrisy, since talk is cheap; *results* are the value of one's belief in a philosophy.

We cannot help but reflect upon Jane Fonda here.

Ms. Fonda, after championing the Viet-Cong in the war in Viet-Nam was asked by reporters in 1979 why she had not condemned the holocaust caused there by the same Viet-Cong she had earlier supported. (Since 1975, the Communists have executed over three million people.) She curtly replied: 'I don't criticize socialist governments.'

Similarly, Gord doesn't criticize Progressive Conservative governments whenever they behave like Liberals.

As to issues, the book is replete with double-standards, one for liberals, the other for conservatives; to wit:

The so-called 'progressive' tax system epitomizes the punitive attitude of government. As any factory worker or office worker knows, the incentive to work long hours, even at over-time rates, is today marginal at best. Government simply confiscates an increasing portion of every dollar earned, making overtime work a pointless exercise.

Yet, Walker's own provincial government profits enormously by this, and they have certainly made no effort to reduce any taxes within the twelve years Bill Davis or Gord Walker have been in office. Everything has risen substantially (provincial income tax revenue has risen faster than federal income tax revenue, sales taxes have jumped, plus various 'ad volerum' taxes of gasoline, manufactured products, etc. keep being added), taxwise. The provincial income tax is now an additional 51% of the federal tax, up from 38% in 1971, in addition to the fact that every incremental increase in federal income tax increases the provincial take.

Of course, the province could institute a flat tax at that level but they use the 'progressive' system because they can extort their constituents far more thoroughly, bribing them with handouts that are, of course, their own money. You can't do that with a flat tax.

Walker's observation of the destructive nature of such a tax is accurate, but it is hollow to chastise the federal government when Walker's own government is hungrily exploiting every tax opportunity it can, limited only to the political risk of future elections. When confronted directly on this in an interview, it took forever to get definite answers from Walker on *specifics*, despite his *specific criticism* of the progressive tax system in his book.

CONTRADICTORY'S

[Editor's note: One of the problems of journalism is space. You usually have to simplify, condense and clean-up a politician's words because they are so vague about everything, their fuzzy answer takes up space, goes nowhere and bores the reader. Editors just won't print it.

That is why Charlie Turner, MP for London East, who is completely incoherent on any issue has to be cleaned up for print. A garbled quote indicating a politician's true side may read quite ridiculously, and the journalist is held to blame for such 'indistinct' copy.]

I tried to get a committed answer from Walker for several minutes, but we won't condense it. Here's what kind of ordeal it's like trying to get a straight answer:

MB Do you support the 20% flat tax proposal? You criticize the progressive tax structure but offer no solution. What would you do in the federal jurisdiction?

GW Sure, the flat 20% is an attractive rate. Is it capable of being implemented? Well, one leadership candidate thought it was. Others were not so sure. I'll be honest with you, I don't know.

If it could be, well, I'll say this, most of us are not particularly happy with the current level of taxation...(60 seconds of wanderings are uttered...)...so anything that brings about a reduction has to be attractive.

MB But wouldn't the 20% flat tax do this?

GW Yes, but to a certain number of people it doesn't reduce taxes, people who are now paying less than 20%. It won't help them.

MB Doesn't it simplify the system, reduce the bureaucracy, reduce costs, create a stable investment environment?

GW No question it simplifies it, *but does it produce the necessary revenue to float the country?* I doubt it would, at the moment, without massive constraint in expenditures...does it provide the federal and provincial gov'ts with enough money?... as I said in my book, current taxes are a disincentive to work. Anyone who works overtime, half (50%) goes to the government.

MB If you're not willing to confirm a flat tax rate, do you have any *specific things* you'd like to see done in taxation?

GW You bet. There's no magic in a flat tax rate reduction, the magic comes in a flat expenditure level. The current taxes have taken away much initiative... the people who work harder should reap a greater return, but half goes to government, so the incentive is lost. So you've got to reduce gov't expenditures. The fed has phenomenally high expenditures. The fed deficit is \$30 billion this year. For a while there you didn't know if it was \$25 or \$30 billion. Those are pretty amazing rounding errors. The provincial budget was out by less than .5 billion dollars.

MB But what *specifics* would you do? I hear criticism of the fed, a guarantee that you'll do better bookkeeping and a 'trust us' attitude. What specifics?

GW I think I can make two or three observations. All of us have a litany of programs, ideas, expenditures, etc. we consider to be wasted by the federal government. They have universal programs that have no limit on costs...

MB Where would you cut back *specifically* on these universal programs?

GW Let me finish my part first. Thirdly, prove by example,...

and on and on it goes. Just to get a specific answer on what specific tax changes he, the author who plunked down \$25,000 of his own money to criticize the federal tax system, would make, I had to plow through various political meanderings lasting over 20 minutes and then I never did get any specifics on how taxes would be reduced in a Conservative federal framework. God knows it doesn't exist in the provincial Conservative framework.

Moving on, on page 17 of his book, Walker says: "

"we cannot reach our potential as a nation until we have pegged down the authority of government and restricted the meddling..."

While Walker's observation is invariably true, the PC provincial gov't has as many Boards, Commissions, by-laws, bureaucrats, etc. as the federal level. The provincial gov't regulates virtually everything the fed does not.

Indeed, it should be an ingrained ideology that the last place to which people turn to for help of any kind is government.

Yet, getting out the huge reference book, **Handbook of Grants and Subsidies** of the federal and provincial governments, the province offers 253 programs offering grants and subsidies (not including 'loans'!) to businesses in Ontario. On top of that are over 1,000 other programs of various ministries which offer art grants, heritage money, etc. And this does not include social welfare programs and the like. While Walker is certainly accurate in observing that government *ought* to be the last resort in people seeking hand-outs, the provincial government is hardly discouraging it!

If there were an epitaph for the Ontario Conservative Party, it is this indictment applied generally by Walker:

...the illusion of the reality that government has an alphabet soup of grants, loans, and other financial goodies to hand out. But in the process it has destroyed the willingness of people to strive for self-reliance and accept self-responsibility. This is a visible illustration of how invidious socialism has become.

Indeed! And under the guise of 'conservatism' yet! How invidious can you get?!

On crown corporations: Walker is vehemently opposed to crown corporations competing with private firms with unlimited taxpayer cash. Walker even walks a tightrope and *specifies* that he would sell off Canadair and De Havilland. He states that Petro-Canada should not even have come about, but stops short of saying if it should be sold off.

The problem here is that while the Ontario P.C. government does not establish as many or as monolithic crown corporations, (although Ontario Hydro is an exception), they prefer instead to invest taxpayer cash into privately owned businesses. This is consistent with conservative 'pragmatism' that states 'it's alright to intervene, just intervene efficiently.'

While this attitude can lead to one-time dollups of \$650 million for 25% of Suncor, in other cases, it leads to the irresponsible escalation of taxpayer infusions. Minaki Lodge, a tourist resort worth approximately \$250,000 in 1972, received a \$100,000 loan from the provincial government in 1974. But it wasn't enough to 'prop up' the lodge and thus ensure the 'province's investment'. So over the next eight years, the province spent an additional \$45,000,000 (*fourty five million dollars!*) to render it

WALKER
A CONSERVATIVE CANADA

A CONSERVATIVE CANADA

GORD WALKER

WITH
G.P. WILLIAMS

up to 'investment standards.' Thus a \$250,000 property receives 180 times its value in grants.

Minaki Lodge will employ possibly 25 or 30 people and costs \$120 - \$170 a night. Not the kind of place you and I are likely to use.

Walker describes Suncor and Minaki this way during our interview. It is sadly hilarious to read the justifications, and I laughed a number of times during the explanations, although to his credit, Walker plowed through the unpleasant job of defending the undefendable.

GW I'm a member of Cabinet and I took the position of Cabinet, that is, to acquire Suncor. Don't confuse a Suncor with a Petro-Can. Petro-Can is a crown corporation, operating with vast sums of money doing something the private sector is doing. It's a crown corporation not responsible to Parliament.

Suncor was a taking of shares by the province of 25% for certain stated goals.

Suncor is a profit-making firm, independently directed; I'm not sure Petro-Can can say that.

We got into it for a number of reasons. One of the reasons was to have a window on the industry.

MB Why?

GW In Ontario, we're the ones who pay twice... (Editor's Note: Including federal taxes, Alberta royalty tax, the provincial government's 20% *advolerium* tax, and the price at the pumps, we pay 4 times)

MB What does this window offer?

GW Well... it gives us a window. We didn't say it was a whole house. It's a chance to see what's going on. Secondly, it fits into the Canadianization principles that were passed by the federal government, the N.E.P.

MB Aren't you *opposed* to the principles of the N.E.P.?

GW *I'm just saying it fits in.* And people saw that as a valid reason to Canadianize an industry, in this case an American industry.

MB Isn't this *just a matter of degree* where Petro-Can is government owned and taxpayer funded, where Suncor is privately owned and taxpayer funded? Granted, different forms of management, but the source of investment is the same.

GW Three quarters of Suncor is private money.

MP But are we going to get our \$650 million plus interest back?

GW Sure. We'll sell the shares eventually.

MB We wonder if that would ever happen, whether government is ever anxious to divest itself of power or influence.

There's no room for principles or even opinions in the Conservative Party of Ontario

- GW** We think Suncor will maintain the interest we've invested.
- MB** Would you do that for any business that looked like a good deal?
- GW** I would hope not.
- MB** Where do you draw the distinction?
- GW** The distinction is drawn as to whether there is a national purpose in mind; it was getting so that when an Arab sheik sneezed, we paid the surcharge.
- MB** How does the \$650 million in taxpayer money change that?
- GW** It's simply a window. You can accept that argument or not. It is a window into the industry.
- MB** About Minaki Lodge up north, a \$100,000 loan to a business worth hardly that much over-all eventually gets \$45 million in subsidies and grants. That's been called an investment too by the provincial government. Aren't you just saying 'trust us' to the taxpayer and then you go ahead and spend?
- GW** Minaki is not particularly an easy one to justify to a southern Ontario context. It is justifiable from a northern context, a CPR railway context.
- MB** \$45 million for a \$100,000 property?
- GW** I don't particularly want to comment on the money spent.
- MB** But isn't that the issue? Inefficiency versus efficiency? Liberal versus Conservative?
- GW** Minaki started out as a small loan to protect our loan; then we had to buy out some mortgages above it...however...
- MB** But these are the dangers I'm trying to get at!
- GW** Well, nothing government does isn't dangerous. Everything becomes a question of degree.

This philosophy of conservatism basically boils down to 'trust us', 'we're businessmen (or lawyers), we know how to run businesses. We're efficient.'

But the record is not convincing at any government level. Walker observes expenses must be kept down, but provincial spending has exceeded the rate of inflation in every year of the last twelve years. It is painfully obvious that this 'conservatism' is not a movement or philosophy but a reaction (albeit a hypocritical one) to bad bookkeeping. Minaki Lodge shows that businessmen who are politicians become 100% politicians when they are spending money other than their own.

The sad thing is what does 'well, it's a window, not a whole house' say? Can they get away with spending \$650 million with 'it's a window' ferchrisst-sakes?! And 'everything becomes a question of degree' confirms my whole interview, that 'conservatism' is only a degree of 'liberalism', albeit with some tinkering here and there.

Walker's book is adamant in promoting a partnership of business and government. 'Grants can play a useful role in helping new ideas be researched...' 'provincial governments and federal governments offering seed money', 'government has a responsibility to help manufacturers, farmers and service sectors to increase the pace of change and to ensure them markets...'

How did this country ever get built without these guys? Walker yearns for a return to traditional self-sufficiency but this is not the society we see being encouraged by his government or the federal government. References to Bill Davis' god-like initiatives smother the book:

'Under the leadership of Premier Bill Davis, Ontario has continuously shown an intelligent and sympathetic approach to people who indicate they want more

of their services in French.'

...and I am pleased to say that Premier Davis has seen fit to adopt these ideas...'

'...under the Robarts and Davis governments...
'...that's what we've done here in Ontario!'

The only satisfying chapter is the one on Victim's Rights, which is specific and well thought out. It is a section which most clearly outlines the government role as 'referee' between peoples, not as an 'intervener' or 'partner' with one side or another. While it is brief, it gives needed direction to the concepts of 'compensation' by criminals to their 'victims', and refreshingly, this concept is getting more media exposure all the time and judges are beginning to use such discretion to allot compensation to be paid by the perpetrator.

Both books are overpriced, Walker's at \$14.95 in hardcover, Mulroney's at \$6.95 in paperback, and they're really shallow, non-committal tracts released to create the illusion that 'Conservatism' actually stands for something.

It's time both of these guys got out their dusty copies of Ayn Rand and find out why they were ideallists years ago.

POSTSCRIPT It seems there's no room in the 'Bill Davis' conservative cabinet of the Gord Walker stripe. Walker was seriously demoted to 'Secretary of Justice', a minor post. It seems that Walker's few stands were too much for Bill Davis.

Just goes to show you, folks, there's no room for principles in the Conservative Party of Ontario.

Things You Can Read On The Bus

MAC'S MISSING

Those of you who have expressed a desire to pick up your copies of the **MetroBulletin** at your local **Mac's Milk** outlets are in for a disappointment.

After having reviewed the first two issues of what we openly represented as a *freely distributed* journal of events and opinion, district manager Chardola decided *against* letting us distribute the **Metro** through his store's outlets.

The reason?---something to do with taking up valuable retail space for a free publication. (Wonder how much they charge for the **Real Estate Advertiser**?)

Our apologies are extended to those individually approached **Mac's** outlets who were looking forward to distributing the **Metro**, pending Mr. Chardola's approval. Sorry.

But while we're at it, our *appreciation* must be extended to all of those *independent* variety stores and restaurants who have even gone so far as to express some degree of enthusiasm about distributing our publication---good for business, they say. (Even *better*, now that these distributors will, as of this issue, receive 50% of our cover price.)

Our many thanks.

SAFETY 'NETS'

We weren't surprised when, during their membership and contribution drive last May, Stephen Lewis and Ed Broadbent gave credit to the N.D.P. for having brought into being various socialist 'safety nets' such as Medicare, unemployment insurance, and injured workers' compensation in Canada.

But to blame the failure of these 'safety nets' on the resurgence of 'right wingers of many stripes---Conservative, Social Credit, Western Canada Concept, 'Moral Majority', separatist, Libertarian, or Liberal' is going a bit too far. Which came first, the chicken or the egg?---or in this case, the *failure* of these socialist 'safety nets' or the *critics* of their failure?

Sounds like the N.D.P. is in trouble---seems that their 'higher vision of economic and social justice' is somewhat blurred.

In future we recommend that their literature lists their political and economic *successes* rather than *failures*. But then, what could they possibly accomplish by distributing *blank* pieces of paper?

NUKE TAX

Though millions here wouldn't survive a nuclear attack, the Internal Revenue Service wants to be certain to collect from those who do. Researcher Gary Robbins, commissioned by the U.S. Treasury to forecast what the tax system might look like under various nuclear war scenarios, recently revealed his initial findings...

If nuclear war is waged abroad, a temporary surcharge could be added to the existing income tax. If the USA were attacked, computerized tax records would probably be destroyed, so he's proposed a sales tax to support the government until the tax system can be revised.

---**USA Today**, April 4, 1983
---**Inquiry**, June 1983

CENSORSHIP SOVIET STYLE

(Moscow) police smashed a ring of video black marketers making huge profits copying and distributing Swedish pornography and other Western films, the newspaper **Sovietskaya Rossia** reported...

'In the pursuit of profit they committed one crime after another,' the newspaper said, expanding from innocent westerns to art films, Swedish pornography, horror films, and movies with mystical themes.

---**Buffalo News**, April 4, 1983
---**Inquiry**, June 1983

CENSORSHIP RUMANIAN STYLE

A new (Rumanian) government decree prohibits the possession or use of typewriters by Rumanians who have a criminal record or pose 'a danger to public order or state security,' according to an official publication issued today.

The decree takes effect April 28. It requires private citizens to register with the police any typewriters they own or want to purchase.

The reasons for the decree were not given, but it was believed to be prompted by a spate of clandestine typewritten leaflets, critical of the Communist government, which have circulated in recent years.

---**New York Times**, April 14, 1983
---**Inquiry**, June 1983

RACIST TRASH

If you had a nickel for every asinine remark made in the glorious name of 'human rights,' you'd be rich enough to buy the Falkland Islands, Great Britain, and Argentina lock, stock, and barrel. The latest outrage comes from John Wallace, chairman of the Fairfax, Virginia, Human Rights Committee. Mr. Wallace thinks **The Adventures of Huckeberry Finn** is 'racist trash and anyone who teaches this book is a racist.' By the way, Wallace is an administrative underling at the, you guessed it, Mark Twain Intermediate School in Fairfax.

---**Reason**, August 1982

PUNISHMENT FITS THE CRIME

'An exceptional measure of punishment'---the Soviet euphemism for execution---was recently carried out against a former deputy minister of fisheries. His crime? Vladimir I. Rytov was *believed* to have been involved in a multimillion-dollar scheme to smuggle expensive caviar to the West. Western partners allegedly arranged for the caviar to be sold at a \$100 a can, and Soviet officials drew their share from secret Swiss bank accounts when they came to the West on business. The Ruskies aren't kidding around when they say they're going to eradicate the bourgeois mentality.

---**Reason**, August 1982

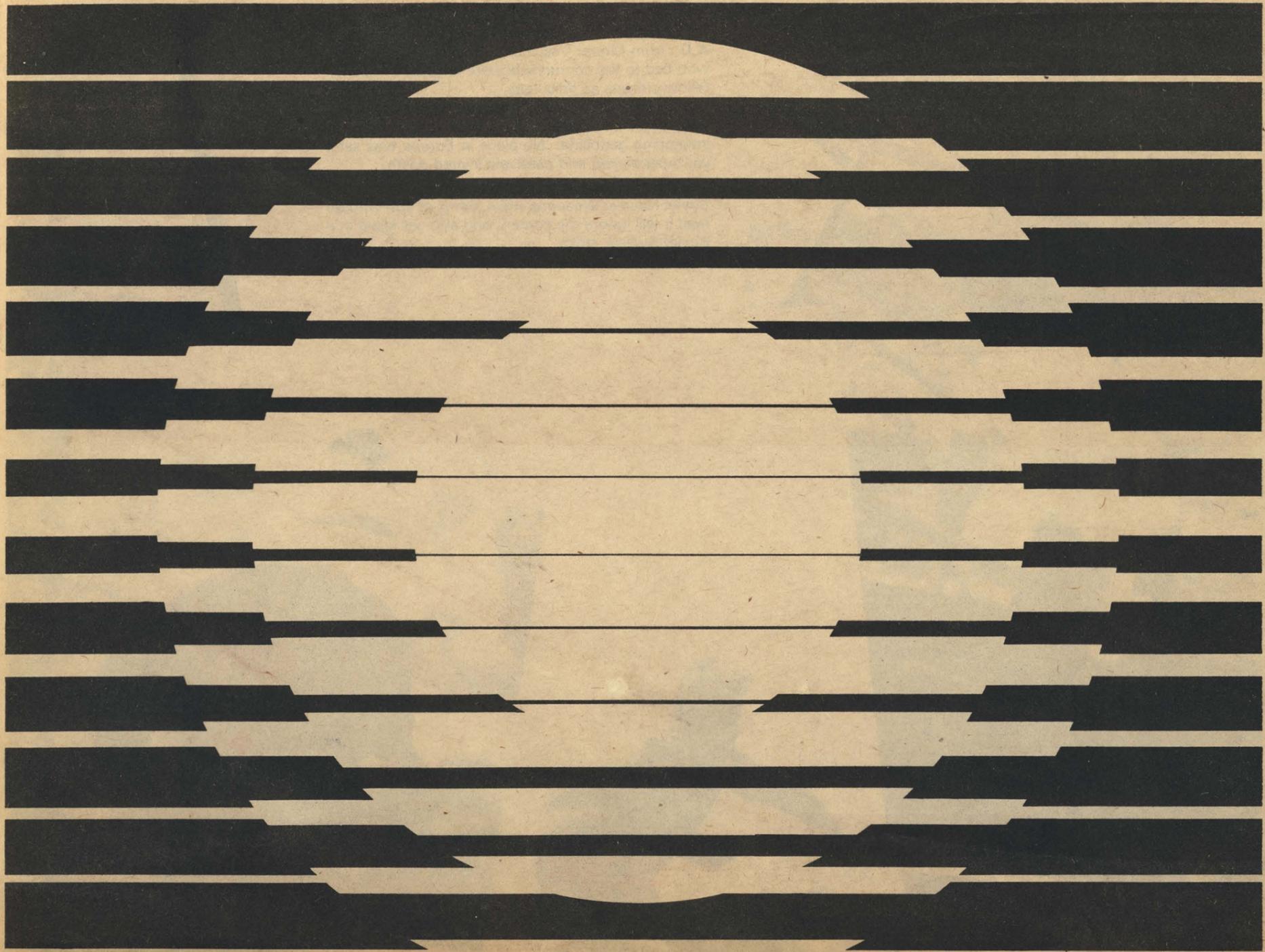
NEXT
ISSUE

IS
GEORGE ORWELL'S
NIGHTMARE
TODAY'S REALITY?



WHO COULD
ASK FOR
MORE?

ON SALE IN NOVEMBER



THE
MetroBulletin
SPECIAL
DOOMSDAY
SURVIVAL
SUPPLEMENT

The night before Pompeii was covered in lava in 79 A.D., from Mount Vesuvius, the thirty or so citizens who fled to the countryside were laughed at by their fellow citizens as ridiculous.

Six million Jews were executed in the Holocaust, yet most had years of advance warnings of impending genocide. No place in Europe was safe, yet most stayed and passively invited death.

99% of you who don't read this article will die in a Soviet Nuclear Weapons strike. Most of you who do read it will ignore the content and also get killed in a Soviet nuclear strike.

You don't have to die. But most of you will.



**79%
DEAD**
Will you be
in the living 21%?

99% will read this and do nothing. *Even then* you'll be better prepared because the knowledge you can do something will prove invaluable later on. A lot of you will say 'it would never happen' because you think nuclear war 'is too terrible'. Or you'll say 'civilization would be doomed anyway, so why survive'. Or 'all of us will die in a total nuclear war'.

And you'd be wrong, wrong, wrong---but dead.

All you need do is read this special edition on nuclear weapons and regardless of the motives of governments you will come out alive and healthy.

Prepare and you'll be OK. And likely you'll prosper.

But history shows you won't do that.

History is replete with wars, atrocities, natural disasters, riots, etc. in which scientific or otherwise reliable evidence abounds showing that Big Trouble is ahead, but 99% of the folks stick around to die anyway. They actually believe they can **will** the reality of impending disaster away.

To those people, Happy Doomsday.

To those of you who put some stock in survival, life, and a happy future, keep reading.

It is real. Nuclear weapons are the harnessing of power like you can't imagine.

The standard warhead for the over 9,000 intercontinental warheads **each** of the superpowers possess is a one megaton warhead.

One **megaton**. That's the explosive equivalent of 1,000,000 tons of TNT (dynamite).

Or think of it this way. To deliver that kind of explosive in conventional terms, you'd need 10,000 boxcars totally packed with dynamite. That's a train *52 miles long*. And the explosive part of that one megaton warhead is a round sphere only a couple of feet in diameter.

In that context, if you figure London is a target for a one megaton (there really aren't any smaller intercontinental warheads) explosion, think of it as though 5,000 sticks of dynamite were placed in every home in London. (Only five are required to destroy an average wood and plaster home).

Would you feel secure about that? Then don't feel any more secure about nuclear war until you've prepared.

Because you can survive.



LIFE AND DEATH WHEN NUCLEAR WAR COMES TO LONDON

(Incidentally, our 5,000 sticks of dynamite example is true in the release of raw energy, but as it applies to destruction of targets, there is a great deal of statistical sleight of hand involved there. see *What Is A Nuclear Weapon*).

The worst part of the disarmament movement, or any general discussion of nuclear weapons, is the doom and gloom 'no survivors' mentality reinforced in films like *If You Love This Planet* and books like Dr. Helen Caldicott's *Nuclear Madness*.

This 'end of civilization' attitude reinforces to anyone not otherwise knowledgeable that 'survival' is impossible, so why not hope you 'get killed instantly' so you won't suffer any pain. How many times in a conversation on the terrors of nuclear war have you heard someone say, 'I hope it explodes right over top of me and I'm killed instantly,' under some perverted illusion that all those who survive will be disfigured mutants burned beyond recognition, disease ridden humanoids or desperate, savage nomads like the attackers in the *Road Warrior*?

The horrors of nuclear war are indeed terrible; it need not be exaggerated to demonstrate the awesome danger a 'nuclear' exchange poses. Yet exaggeration and deception abounds, to what ultimate purpose, it is hard to say. One sure result however, is that legitimate self-survival information is never discussed or worse, the concept is derisively associated with those who advocate a 'winnable nuclear war'.

It is as though it is sinful to want to live, regardless of the obvious unpredictabilities of government. The anti-nuclear types want us to lobby for disarmament, but they are against personal survival if war comes. It is as though our preparations for post-nuclear survival flies in the face of much of what they are saying. And they are right in that observation. Much of the discussion involved in many books and films on nuclear weapons is outright hysteria.

Dr. Helen Caldicott is a leading spokesperson for the disarmament movement, an executive of Physicians for Social Responsibility, a narrator in *If You Love This Planet* and author of books on 'nuclear war'.

YOU CAN STILL SURVIVE EVEN THE WORST NUCLEAR WAR



Her book, *Nuclear Madness*, is a classic example of distortion and hysteria that attempts to convince all readers that we are doomed, doomed, doomed, in the case of nuclear war so forget about surviving.

The United States and the Soviet Union already have enough firepower in their arsenals to destroy every city on earth seven times over.

This is totally untrue. Whereas the U.S. has approximately 9,000 warheads and the Soviet Union has 8,500 (see chart in *What Is A Nuclear Weapon*), the fact is that the majority of weapons are aimed at the delivery systems on the other side. 2,500 - 3,000 Soviet warheads are directed at U.S. Minuteman-Titan silos, and vice-versa. Both sides have targeted submarine bases, military installations, fuel storage depots, weapons manufacturers, etc.

It is true that a full-scale nuclear war involving 20,000 ICBM-submarine launched-bomber launched warheads would destroy the economic and social structure of the U.S., southern Ontario, Southern Manitoba, Western Europe and large chunks of the Soviet Union.

But to say that this is the end of 'civilization' or 'will kill the world's inhabitants several times over' forgets that Australia, New Zealand, most of Canada, Mexico, South America, Central Africa, South-east Asia will be largely intact.

As Bruce Clayton (PhD. Ecology) said in his book *Life After Doomsday*, 'Civilization will not vanish because our cities have been badly used. Don't you worry about civilization. Concentrate on staying alive to enjoy it.'

Another myth promoted by the film *If You Love This Planet* and Caldicott's various material is this view from her *Nuclear Madness*:

The detonation of a single weapon of this nature over any of the world's major cities would constitute a disaster unprecedented in human history.

One bomb (one megaton) will kill anywhere from 100,000 - 300,000 people in a city. While this is a catastrophe of the highest magnitude, and unimaginable to the Canadian consciousness, 'unprecedented in human history' is not true and exaggerated.

A total nuclear exchange involving all nuclear weapons will kill 8-10% of the world's population (possibly a resulting famine will cause an additional 10-20% world deaths) but this passage refers only to one bomb.

'Unprecedented'?

The Black Death (bubonic plague) wiped out 25-33% of the world's population in 1347 - 1350; 7-12 million Ukrainians were starved in famines in the 1920 - 1937 period; 19 million soldiers and 40 million

civilians were killed in the second world war (3% of the world's population). The first World War killed 8 million soldiers and 16 million civilians (2% of the world's population).

There is no doubt that nuclear war would be a catastrophe, but it would not mean the end of man nor the end of social structures in many parts of the world.

Caldicott says 'every American city with a population of 25,000 or more is targeted, both major and minor population centres would be smashed flat.'

As guidance systems of both sides become more accurate, hitting cities for the sake of hitting cities is simply not in vogue.

The criteria of targeting is:

1) initial strike: air force bases, ICBM silos, submarine bases, naval installations, the Pentagon, NORAD, military communication points, military installations, major government centres.

2) secondary targets: all military bases, commercial airfields.

3) third priority: electrical generating plants, nuclear reactors, hydro-electric dams, oil fields.

4) fourth priority: government centres, transportation centres, industrial basins.

These targets are for nations with offensive capabilities, whether the Canadian counterparts in those categories are targets is open to speculation. On one hand, with five or six other nations with nuclear capabilities to deal with (United States, Great Britain, France, etc.), we may not be vital enough for the Soviets to use their weaponry on.

Much depends on who gets first-strike momentum.

London Ontario, despite its size, would not seem to be a target of strategic value, and there will be many more cities in the world that can be regarded as such. (See *Are We A Target?*)

Other myths about nuclear war are about 'fallout', 'firestorms', 'genetic mutations', 'massive increases in cancer', 'depletion of the ozone layer' --- dangers which, when true (because some of the above are fantasies), can, to an informed person, be rendered impotent if preparation is taken **before** a nuclear catastrophe. (like now).

'Fallout' is the most dangerous item for people who have the good sense to do something about survival now. *You Can Survive* (part 4) gives you the entire information kit on what you need to know in dealing with life-threatening fallout, how to cope with and conquer it. Most importantly, it tells you what fallout is **not**.

'Firestorms' like the ones that engulfed Hiroshima, Nagasaki, and Dresden in the Second World War aren't likely to happen in modern cities because most buildings are made of flame-resistant drywall, brick, steel, concrete, and glass. In any case, blast damage over the same area will be far more lethal.

Fires that do start are more likely damaged and burst natural gas lines, propane & gasoline storage depots, and the ignition of dry grass, wheat, etc. about 8-12 miles from detonation where blast damage will be minimal.

The 'disarmament' speakers usually suppress survival-talk options by equating individual preservation with advocacy of a 'winnable war' but failing that they'll get wide-eyed and foamy-mouthed and utter with well-placed gasps, 'Would you want to be alive in a world of mutants, genetic defects, with people dying of cancer, leukemia every day, with mutated insects roaming the earth and sweeping plagues across the continent?'

'Yep, guess I should kill myself after all. Right?'

Wrong. Even if that stuff **were** possible, it won't happen to you anyway because you're **prepared**, remember?

As for the increases in various diseases, cancer, leukemia, anemia, etc., this will only affect people who are exposed to large quantities of fallout (who will die in weeks), and the long-term casualty rate for cancer, leukemia, anemia, will be only twice the rate it is now. By today's standards, that's serious; in the post-nuclear world, hardly noticeable. Death from famine will be far more pertinent to millions in the U.S., U.S.S.R., Europe, Africa and parts of Asia.

As for genetic defects, the human body has an automatic preventative device to protect against this. Spontaneous abortions virtually always occur when the fetus is beyond recognition (disfigured). And as for future generations of disfigured mutants, let's face it, ugly people have a hard time mating. Natural selection will weed them out as it will with most of

the people with anemia, leukemia, cancer, etc., who will procreate less than those who are protected from radioactive fallout particles. While the gene pool will be damaged in various ways for 1,000 years, this won't affect **you**. And 1,000 years in the history of this planet is a long time to us, but to Mother Nature, it is merely a blip. It will not be the end of the human race or civilization.

The experience of the Japanese at Hiroshima and Nagasaki, for example, indicates there would be a surge of leukemia cases five to ten years after a nuclear war, but only amongst those who received large doses of radiation and were fortunate enough not to have died from radiation sickness. At Hiroshima and Nagasaki, these were only the people within the two cities, since no fallout occurred at the two targets. (See *What Is A Nuclear Weapon*.)

From the Japanese experience, the predicted incidence of leukemia among adults who were exposed to 100 to 200 REMs (see glossary and other sections for definitions) of radiation over the six months after radioactive moisture settled on their environment is four cases per thousand, for children under ten, eight cases per thousand or less than one percent of those exposed to moderately heavy doses of radiation.

Out of 109,000 survivors, 5,700 were heavily irradiated. Of these, in the period between 1960 and 1970 (15 to 25 years later), a total of 47 had died of cancer. The normal rate would have been 30 deaths.

As to a world of mutants, Dr. Caldicott pulled out all the stops on exaggeration:

Reproductive genes will mutate, resulting in an increased incidence of congenitally deformed and diseased off-spring---not just for the next generation, but for the rest of time.

Reflecting on the Japanese experience, some survivors produced normal children, and the ratio of normal births increased as time from exposure to the radiation passed. Caldicott cites:

In the aftermath, bacteria, viruses, and disease-carrying insects---which tend to be thousands of times more radio-resistant than human beings---would mutate, adapt and multiply in extremely virulent forms.

The rate of mutation and evolution of crop pests is extremely high under normal conditions. The radiation will hardly reduce or increase insect adaptability. The radiation from fallout could 'produce new and virulent strains' but it could also result in disease organism mutations to benign forms. In any case, insects are much less a concern regarding **mutation** than they will be when their natural predators are fewer in number, possibly causing swarms of marauding crop insects. (See *You Can Survive*.)

The ozone layer, the layer of atmosphere which filters out most of the harmful rays of the sun, will be impaired seriously for three to five years after a nuclear exchange, such that severe sunburn will result from going out on a sunny or partly overcast day for just ten minutes. (between 10:00 A.M. and 2:30 P.M.)

This will be dealt with by covering up all exposed skin and avoiding the outdoors at this time of the day, until the ozone layer reaches near normality in about five years.

A shorter growing season and the depletion of much of the ozone layer will make some crops impossible to grow, so food production will be oriented around grains like wheat, corn, alfalfa, soybeans, etc.

And the long-term radioactive by-products of fallout can bring great harm to you---unless you know what they are and how they operate. Once you know that (it's covered in this special edition) you are already 90% out of danger.

Had enough? We hope not.

Because here's the bad news **in detail** for those who plan to sit out a nuclear war **in London** at the time of a nuclear attack. To give you a perspective on how a nuclear war might begin, we have included a scenario of events leading up to an attack on London. (---because it won't be a bolt out of the blue; you'll be warned.)

The good news is if you aren't in town when the big one is detonated on London (and you shouldn't be if you are paying any attention), you'll be on your way to survival in the post-nuclear world.

NUCLEAR WAR MINUS 83 DAYS

How Nuclear War Will Likely Happen

July 6, 1983 U.S. Secretary of State George Shultz returns from Mid-East peace mission, conceding failure. Syria refuses to withdraw from Lebanon, and consequently, Israel refuses also.

August 13, 1983 Yasser Arafat assassinated by exploded device at El Fatah headquarters. Syria, Israel claim no involvement.

August 15, 1983 PLO leaders pick new leadership, declare renewed commitment to establishment of Palestinian state and defeat of 'Zionist fascism'.

August 31, 1983 Israeli reconnaissance reports increased Syrian activity and build-up of material at Syrian front lines in Lebanon.

September 8, 1983 Syrians launch tank attack into Golan Heights and Bekaa Valley simultaneously, and PLO launches raids from Beirut suburbs south into Israeli held positions.

September 9, 1983 The Syrian strike escalates after stiff Israeli resistance. Syrians use surface to air missiles against Israeli counter-air strikes, making a successful number of hits.

September 10, 1983 Syria captures 8 miles of the Golan and 4 miles from the Bekaa Valley. U.S. and U.S.S.R. urge moderation while condemning the interference of each other in the current crisis.

September 11, 1983 Mohammad Khadafi pledges aid to Syria and the Palestinians; Israel concedes a loss of 19 planes, Syria loses 39. Both ask for more aid from U.S. and U.S.S.R. respectively.

September 12, 1983 Israel launches counter-offensive, encircling entire Syrian tank units, capturing 45 tanks and 1,500 soldiers.

September 13, 1983 Iraq and Iran announce ceasefire in their war.

September 14, 1983 Israel recovers lost ground and advances from Golan further into Syria. Israeli planes make air raids on military bases in and around Damascus, 40 miles away, including Damascus airport.

September 15, 1983 Libya declares war on Israel. Israelis move toward Damascus by 5 miles. Iraq loans Syria the use of 5,000 soldiers taken from the Iraq-Iran front. Jordan martial law troops on its border points with Israel, while Saudi Arabia and Egypt urge dialogue and moderation. A special session of the UN Security Council demands all combatants withdraw from Lebanon.

September 16, 1983 Israeli armour moves 8 miles further toward Damascus, as well as dislodging Syrian positions out of the Bekaa.

September 17, 1983 Libya sends naval vessels toward Israel, announces the possession of a new weapon which will be used against Israel if it does not return to 1967 borders.

September 18, 1983 Israeli air strikes against Damascus halted, later that night, Israeli bombers raid all Libyan air bases (Tripoli, etc.) and naval bases.

September 19, 1983 Soviets announce a new military-economic assistance pact with both Iran and Iraq. Israel offers to return to borders previous to Syrian attack if American troops are stationed in buffer zones on Golan and Bekaa. U.S. says it will consider this but state a complete withdrawal from Lebanon is essential. Meanwhile, shipments of arms to Israel from U.S. increase.

September 20, 1983 Jordan declares war on Israel, demands return of West Bank and Moslem Jerusalem. Israel stiffens its troops in West Bank and prepares for Jordanian attack. More Iraqi troops arrive to aid Syrian defences.

September 21, 1983 CBS News reports that a small fleet of Libyan ships are spotted 150 miles west of Cyprus, 400 miles off the Israeli coast.

September 22, 1983 At 4:00 A.M. Israeli time, Libyan cruiser launches Exocet-like missile inland to Tel Aviv; a fantastic explosion occurs and an immense flash lights the sky as far away as Cyprus. The flash is visible through the sky in all of Israel. CBS reports on the 6:30 evening news that it is believed the explosion was a fission explosion in the 15-kiloton range. Tel Aviv suffers severe damage, over 60,000 people are believed dead. Within three hours massive Israeli raids are launched on all cities and towns throughout Libya, including an attack on the fleet where the nuclear missile was launched from. Israel demands the surrender of Libya or otherwise it will have no choice but to escalate the conflict using its own nuclear weapons, although no one is able to confirm if Israel actually has access to any.



September 23, 1983 Jordanian troops are ordered to hold, King Hussein says he is 'assessing the situation'. Secretary of State Shultz meets with the Soviet Foreign Minister in Geneva. A second emergency session of the U.N. is convened.

September 24, 1983 President meets with Cabinet and Pentagon officials to discuss satellite reports of mobilization at Soviet airfields, and the general deterioration in the Mid-east.

Night of September 24, 1983 The President orders the entire Trident-Poseidon submarine fleet to sea.

September 25, 1983 Israel launches massive drive to Damascus, approaching within 8 miles of the Syrian capital city. Israel moves heavy artillery into place and begins campaign to encircle Damascus. The U.S. fifth fleet moves toward Israel in the Mediterranean to discourage any further Libyan naval-air activity although the Libyan fleet is now in ruins from the Israeli raid of the 23rd.

September 26, 1983 President of U.S. is informed all reconnaissance satellites are silent. President orders all forces to DEF CON 2 (crisis alert).

September 27, 1983 **3:20 A.M. Eastern Standard Time:** Soviets launch massive strike on all U.S. ICBM silos, destroying 80% of the sites.

3:45 A.M. Eastern Standard Time: Soviets call for cessation of hostilities. U.S. responds by launching remaining missiles at Soviet military bases and cities. S.A.C. bombers ordered into the air and awaiting orders.

3:55 A.M.: Soviets launch pre-emptive strike into West Germany.

4:20 A.M.: SAC bombers en route to targets in Soviet Union.

4:00 A.M. - 7:00 A.M.: (10 P.M. - 1 A.M. in Western Europe) Full scale armoured battle along West German border including exchanges of tactical nuclear weapons. In London citizens wake up to emergency news broadcasts detailing the massive attack on the U.S., a rumoured counterattack and the invasion of Western Europe. Fallout from surface bursts in the Mid-west is moving easterly and there is possibility of a danger to London. It is possible fallout will arrive in twelve hours or so, around 4:00 - 6:00 P.M. Meanwhile hundreds of thousands of American refugees are jamming border points across the country from Vancouver to St. Johns fleeing fallout and general panic. By mid-morning, London roads are jammed with people leaving the city, others are still going to work. School is cancelled, and many people prepare food to evacuate if necessary. By 10:00 A.M., refugees who have illegally crossed the border pass through the city and add to traffic.

9:45 A.M.: Detroit is hit by an unknown number of airbursts, causing tremendous damage to Windsor. Ottawa is hit fifteen minutes later.

12:24 P.M.: The Bruce nuclear reactor is hit by a surface burst, failing to damage the reactor core but ending power output. Fallout begins to drift eastward by 1:30 P.M.

1:30 A.M.: Refugees stream into London in convoys seeking medical aid from burns, broken ribs, lung, ear damage. 5,000 arrive in just four hours, well beyond the capacity of all the hospitals in the city. Winds from the mid-west however, are slower than expected and it isn't believed serious fallout will arrive. In London communications are not reliable as Ottawa is no longer communicating and the safety of the Cabinet and Prime Minister is not confirmed.

The Evening: Emergency broadcasts occupy all radio channels but details on anything are sketchy because fallout, blasts, general chaos, gasoline shortages make news gathering impossible. Mostly just warnings about staying indoors in case of fallout.

6:20 A.M.: London-Middlesex Health Unit reports no perceptible levels of fallout in the atmosphere that 'are worth panicking over'. Refugees and injured line up outside hospitals, neighbours offer aid and beds to injured. School is cancelled today, but most people report to work, although many retail outlets are closed for the day.

8:02 A.M.: Soviet Delta-class submarine launches missiles with MIRV's (multiple independent re-entry vehicles) aimed at centres in the Great Lakes region.

8:11.03 A.M.: At 5,100 feet above Middlesex County courthouse downtown, a one-megaton hydrogen-fission warhead is detonated within one 300,000th of a second, a searing white light moving instantly outward in all directions.

WE'RE HIT!



Getting out of his silver New Yorker Brougham to prepare for that day's open-line show, 'Helping the refugees, what can you do?', Wayne McLean walks up the concrete steps out of the CFPL-radio parking garage. Pausing for a second to take one last look at the sky, Wayne turns round and reaches for the doorhandle on the heavy glass door of the Free Press-CFPL building.

At 8:11:03, the time of detonation, Wayne McLean is seared by the intense white rays that fill all the open air around him. His clothes immediately smoke and burst aflame, his skin 'melts' in layers, in the same ways a book's pages peel away when thrown in a fire.

Within two seconds, his entire exposed skin is melting and his body is immolated by the flames of his burning clothes.

Not yet dead, the blast wave and overpressure reach him three seconds after detonation, the overpressure of 50 p.s.i. causing his body to explode inward (killing him instantly). Blood spurts out of the 'weak' points of his body.

At the same time as the overpressure causes his body to implode (within a fraction of a second), his still charring body pieces are thrown into the Free Press building with the force of four hurricanes, while the entire Free Press building is flattened in a brief, choked-off roar---within one second! Within the next five seconds, any debris weighing under 500 pounds will be swept upwards into the winds and flung up to several miles. Cars (looking like crushed beer cans), furniture, rubble, body parts are all swept into the unimaginable force of the blast wave.

Ten seconds later, a top layer of six or seven feet of debris remain, steel-reinforced concrete slabs contortedly sticking out of the chalky bleached mess.

Henry Stackmeyer of 34 Bruce Street (between Cathcart and Wortley), a 61-year old veteran of World War II, is watering his front lawn, pensively looking skyward, and cursing the stupidity of men and governments. Henry ruled out packing up and leaving town for a few days, figuring London would be as safe as any place. Watering the lawn was just a way to pass the time.

At 8:11:03, wearing only black shorts and a white T-shirt, his aged 145 pound body instantly burns at the contact of the hot, white rays. The burns peel away his dry skin and within three seconds, his blood vessels are exposed and bursting, and then congealing within an instant. His black shorts cause the heat to char his body even more quickly, while his white T-shirt offered him a fraction of a second's respite.

At the moment Mr. Stackmeyer's bones begin to turn black, the blast wave arrives like some enormous 1,000 foot high tidal wave (four seconds after flash), and smashes his carcass to the ground, causing his whole body to collapse inward and shatter against the now charred lawn.

With the overpressure of 40 p.s.i., the 400 m.p.h. winds put out the lawn fire, crush Mr. Stackmeyer's house against the ground and then with the quick roar (like being in the centre of a tornado), his house is demolished and its parts lifted up into the air.

Mr. Stackmeyer's body is now a loose, pulpy, mass flung upward into the air with the thousands of other crushed bodies, houses, cars. The air is totally obscured by flying debris, looking like the sick joke of some science-fiction horror film maker.

Mrs. Sally Hussberger is cleaning up her kitchen at 426 Piccadilly after preparing breakfast for her husband and two children. She's too nervous to concentrate, and she is worried about her mother in Leamington, 25 miles from Windsor. The phone lines are all down, and radio reports are so vague and speculative. 'And no one knows what to do!' was

her frantic, silent plea. The emergency broadcasts couldn't even detail what points in the U.S. were hit because most communication in the world was clogged and so much radio equipment was damaged.

Her husband, Sieg, was packing the car with food, a first-aid kit. 'Be ready in just ten minutes, get the kids,' he ran in to say. They were packing to go to Seig's brother's farm near Clinton, safe from fallout and who knows what.

Sally threw the last of the breakfast plates into the cupboard when the kitchen and living room curtains were bathed in sizzling white light and were instantly set alight. Within half a second, the bedspread caught fire once the curtains burst aflame and the white light beamed into the house. Sally, mesmerized, stares in shock and covers her mouth, when two seconds later her kitchen window blasts inward at 400 m.p.h. Thousands of razor sharp shards swirl around the room, completely piercing Sally's body (killing her), her body's blood spraying about the room and mixing with the debris filled air. Within that second, the entire house is flattened faster than the eye can follow and Sally's body is buried underneath some heavy beams, the refrigerator and stove.

The curtains, carpet, and bedspread that were aflame for three seconds are choked off.

The century home at 426 Piccadilly was made of brick, but after winds had destroyed the Hussberger home, not one brick remained attached to another, the roof completely sucked away in the winds, along with most bricks. Many bricks were bleached chunks of dust, the rays of heat reaching 7,000 degrees Fahrenheit. The painted wood that decorated the peak above the veranda was charred black by the time it was splintered like kindling in the blast wave and carried off with the wind.

Half a mile further out, 1.5 miles from the Court House, MetroBulletin editor Marc Emery is awakening to the site of his bedroom curtains bursting completely aflame. Leaping out of bed, Marc grabs his glasses from his desk and puts them on at the exact moment (4 seconds after detonation) the huge 3' x 4' front window pane implodes inward into thousands of jagged razors moving with the force of bullets, piercing his body like a pin cushion but moving with such force the glass moves right through his body.

His limp body, now a loose pulpy mass of blood, falls backward but the 350 m.p.h. winds throw him backwards, smack into his dining room wall, obliterating his human features into a flat gory mass.

Within that second, his stucco and wood frame house splinters and implodes inward under the tremendous overpressure of 26 p.s.i., the 350 m.p.h. winds carrying off the roof, veranda, flattening the rest of the house. His blue van is crushed like a can, then flies over the remains of his house.



UNIVERSITY HOSPITAL TO THE NORTH...

ROCKS

2.5 miles from the Court House, the thermal flash heats up the white curtains of University Hospital, but because they are heavy material and white, they don't ignite immediately. Because it is a sunny day, however, many windows have no curtains drawn and hundreds of patients receive the complete thermal pulse, up to ten seconds of intense light; searing rays cause deep third degree burns which second by second peel away layers of skin until blood, muscle tissue and bones are exposed.

The white curtains that were drawn ignite in three or four seconds.

Ten seconds after the intense white rays beam into the 11 storey hospital, the blast wave arrives, smashing all windows inward, filling each room with thousands of swirling glass knives, winds of 300 m.p.h. whipping them throughout the entire room and down the corridors (all this in less than one second). Each patient, most doctors and nurses are riddled with them. All beds and furniture are sent flying against walls at incredible speed. Within two or three seconds, the extreme high winds strain the building's steel and concrete structural base, and like a slow motion film, it rocks to the north and then cascades apart and seems to explode to the north, collapsing entirely, killing every patient, doctor, nurse.

Throughout the area around the campus, (zone 'E'), debris weighing up to 750 pounds is landing with incredible force, although everything is already destroyed. Light cars like Rabbits and Volvos that were crimped then scrunched up near the Court House begin to careen down to Earth in this area.

The 1,000 foot high tidal wave of destruction continues to move outward in all directions.

Robert Metz, columnist for the **MetroBulletin**, is driving north to the downtown in his VW van, delivering his latest column, trying vainly to believe that London has been missed as a target and that we're all going to be relatively OK.

Bob is laughingly wondering if the next issue will go out on time or whether the Emergency Planning Order will go into effect, cutting off our access to newsprint. At that moment of his last thought, 8:11:03, Bob stops for a red light at Southdale and Wellington, 3 miles from the Court House.

Safely seat-belted into his driver's seat, nervously waiting on the red light, the all-consuming white flash of super-nova takes place directly ahead of him.

Instantly he is without vision, then a stinging heat touches his whole body instantly setting his hair on fire, burning his blue summer T-shirt. Within a second, his shirt is aflame and his hands and face begin the now familiar agony of being burned away layer by layer. If Bob could have ducked down in the first second or two of the flash, he would have been limited to third degree burns, but strapped securely in his seat he is exposed to the total thermal pulse for twelve seconds, his eyes hollow sockets, his face beyond recognition, his mouth merely a gaping hole when the 210 mile an hour winds arrive and drag his van backward in one super-powerful lurch, his vehicle bouncing backwards down Wellington Road like a television stunt wreck.

The glass windows implode inward, injuring his still alive body with glass pellets of the auto safety glass. (Auto glass does not become a guarantee of instant death since it shatters into square or rectangular nuggets.)

The van's repeated bouncing along Wellington Road for half a mile is enough to crush the van's metal chassis, snapping Bob's neck, collar, and spine as the roof collapses, pinning him into a contorted, agonizing position. In ten minutes Bob will die, but to him, it will be an infinite ten minutes.

At this point, several hundred vehicles swept up off Wellington St. (in zone A,B,C) start dropping out of the tidal wave of destruction, flattening themselves and crushing the remains of their drivers.

3.5 miles from the Court House, eighteen students are placing drainage pipes behind Fanshawe College when the one-megaton warhead detonates. Alan Hammond, a Music Industry Arts student working on the drainage project that morning, for some unconscious reason, jumps into the trench immediately; within two seconds, four others do the same. The other thirteen look into the sunburst and are dazzled. Only after two or three seconds do they realize they are 'burning up' and then they are too shocked to jump into the trench.

After fourteen seconds they are hopelessly burned



...THEN CASCADES DOWN TO THE GROUND IN A CHOKED-OFF ROAR.

beyond recognition when the blast wave of 175 m.p.h. winds arrive (with p.s.i. overpressure of 8) and whips over the trench, pinning the five students in the trench to the bottom, the winds throwing the other thirteen several hundred yards, killing them. In the trench, Alan's eardrums burst, combined with his temporarily dazzled vision, he is without sensory perception and unable to notice the student in the trench beside him has third degree burns and a concrete block seriously lodged in his back, a chunk of debris typical of the thousands of pieces being flung out of the torrent of energy rushing outward.

Fanshawe College receives extensive damage; all windows shattered, all doors blown inward, two of five roofs collapsed, the second and third floors destroyed.

Students in the basement levels are alive, as are students in CIXX, M.I.A. and fine arts who are all in windowless rooms, imbedded deeply in the building. A number of students receive eardrum rupture as a result of overpressure.

The problem for the 200 or so survivors is escaping the fabulous quantities of rubble above them with an oxygen supply that could last only hours.

A mile down the road, 4.5 miles from the Court House, the 3M factory is extensively damaged, all machines uprooted by winds of 140 m.p.h. whirring throughout the plant. Fires immediately start as chemicals, hot machines, solvents and electrical equipment get thrown about. Then electrical power is cut as local hydro generators are destroyed. The many windows on the plant blow inward killing many of the workers who chose to show up for work, and seriously (and painfully) injure most of the others in the plant. With power cut and machines flung all over, exit is slow and extremely difficult.

5% of employees also experience ruptured eardrums. Office workers in windowless rooms deep

in the plant survive unharmed. But how to get out? No light, all exits trapped, moaning bodies everywhere and fires alight throughout the plant.

Further down Oxford Street, GM suffers less severe damage as the blast wave *begins* to exhaust itself. Nevertheless, most cars in the parking lot for the morning shift get overturned and bash into other cars. All windows in the plant are destroyed and all light equipment is dislodged but casualties are low due to the reinforced structure of the building and its being 4.9 miles from the Court House. Only 10% of GM's morning shift (ironically London's only munitions factory) will die, 20% of the others will experience serious injuries.

Crosstown in Oakridge Park, the Thomson family are preparing to evacuate in a panic reaction to the emergency broadcast reports that U.S. missile silos were attacked the night before. Paul Thomson, after school was cancelled the day before, decided the family should pack as much into the family Celica a.s.a.p. and get the hell out of town, even if they just park 25 miles outside the city.

Moments before detonation, Paul had bundled his family into the car with one day's food and water, and were pulling out of the driveway when the plutonium-hydrogen weapon exploded one mile over the Court House, 2.7 miles away.

Within one second, the thermal flash was searing their exposed skin and within two seconds setting their clothes, seats alight.

After seven seconds, the entire Thomson family was hopelessly burned, at the eighth second, the blast wave arrived with 225 m.p.h. winds sending the charred car over a quarter mile across the collapsing suburban geography. All houses in Oakridge Park were completely flattened, although Paul's neighbours, the O'Connors family, were sealed away in their concrete basement shelter, a project Frank

AT THAT INSTANT A BRILLIANT WHITE LIGHT SERENELY FILLED THE STREET

O'Connor had made last year after reading an article in *Scientific American* on blast effects of thermonuclear weapons. The O'Connors were packed into their small 8 foot by 8 foot (6 feet high) concrete shelter three nights ago when Canadian government broadcasts recommended private measures be taken to evacuate high risk areas. (London was not one of them, but that was no reason to feel calm, so the O'Connors had been huddled in the blast shelter for three days now, listening to the radio to see if things got better or worse.)

While the Thomson family car was being scooped up into the 1,000 foot high blast wave, the O'Connor house, like all of them in the suburb imploded and collapsed in less than one second. The O'Connor children both suffered eardrum rupture (leaving the children deaf), and Frank's wife Erin, was having trouble breathing, suffering some lung damage from the overpressure that went through their blast shelter even though winds didn't.

Fortunately, oxygen was able to seep into a crack in the rubble so the O'Connors, while trapped, could breathe. But how to get out? Would anyone ever be able to help them out?

Mark Elms of 61 Worthington Ave. in Pond Mills was a man not prone to panic. He had missed only four days of work in seven years at GM and he wasn't starting absenteeism because the super-powers were going to war (although Canada's NATO commitments were already underway, making Canada a belligerent in war). As a sort of comfort, he contemplated the protection offered by the GM building at the edge of the city would be better protection than his split-level in Pond Mills anyway.

But although his musings about being protected at GM were correct, at 8:11:03 Mark was driving his Buick Riviera along Commissioners Road approaching the clover leaf exchange at Highbury Avenue when over his left shoulder he felt a quick stab of heat (then a blistering surge of heat immediately after) on his neck, head and hands. Before his eyes, Mark saw his hands blister, then peel away and Mark lost control of his car at the top of the clover leaf. Screaming in horror, the GM supervisor rammed into the concrete guard rails on the top of the bridge overlooking Highbury.

Over the next ten seconds, Mark's car seats are entirely aflame and his exposed skin is burned severely. Incredibly, he manages to open his door and get out of his car only in time to meet the force of the blast wave.

The 165 m.p.h. winds (3.5 miles from Court House) lift him right off the bridge and send him flying a half mile before he falls to earth in several lurching, bouncing crashes completely obliterating his external signs of humanness.

His Buick is taken over the bridge like a cardboard prop and sent rolling along the terrain for over a half mile.

At this point, many large pieces of debris, wood, brick, human limbs, and whole bodies rain down on the entire area while simultaneously scooping up lighter items and carrying them off.

Coming in on the 401 at 8:11:03 are several hundred vehicles including eight busloads of injured refugees (including burn victims) from Windsor, except now a hospital doesn't exist nor do any of the refugees who sought aid there. Many refugees were also taken from Windsor to Leamington, Chatham, and other smaller centres, but it was believed that fallout from the U.S. Midwest could reach Leamington and Chatham, so as many victims as possible were to be sent to London.

The convoy is 5.5 miles from the Court House, just a few miles from the Wellington Road junction off the 401, when the detonation occurs. The driver, upon seeing the flash, dives down into the aisleway and yells for everyone to take cover. Most are so injured and defeated that they all just lie limply in their seats and the white rays sear into their already damaged bodies. Many were in such pain already that they didn't hear the driver say anything, and others are so drugged they aren't conscious. Others are already dead, except no one had the strength or the option to do anything.

Some of the injured succumbed right away, but for others death was as far away as the 22 seconds it took for the blast wave to roll over their part of the 401, when the windows imploded into the bus, and the 110 m.p.h. winds overturned all the buses, sending them into gulleys on the side of the highway, tossing scorched bodies all over the bus.

In Lambeth, retailer Joseph Tuffins had decided to stay home ('To hell with one day's business') and watch events on television in the safety of his basement. 'Why would anybody send a missile to Lambeth?' he thought.

Indeed, while Mr. Tuffins was rolling that thought around in his mind in his Broadway Street basement recreation room, he was shocked to watch an intense white light beam through his rec room windows, literally charring the veneer of his television set as he watched it; seconds later the television sizzled out. The carpet where the light was streaming through his window was giving out smoke and then began to burn.

Upstairs, the curtains and bedspreads were on fire. His wife rushed downstairs to tell him and ran right into the last rays of the thermal pulse. Irene Tuffins ran right through the rays of the downstairs window and would later suffer isolated second degree burns. Meanwhile their house was on fire, and as the light rays faded (after 12 seconds), they rushed upstairs to put the fire extinguisher to the flames. Unfortunately, they ran into the oncoming danger.

Lambeth is only 5.5 - 6 miles from the Court House in London, and the blast wave reached the Tuffins 22 seconds after the first rays beamed into their windows. At that point, all their windows blew inward and the shards of glass raced around their rooms in concert with the 100 m.p.h. winds. Both Irene and Joe were sent flying back downstairs by the dynamic winds but miraculously the glass missed them. The roof of their brick and stone house heaved a big, cracking groan and then was ripped right off their house. Furniture was being thrown about their house with splintering force.



Joe had several broken ribs and Irene was cut, bleeding and burned but alive. And some medical help would be available in Lambeth at least within the next few days.

In Dorchester, Jim McGuffin was looking out his large window in the middle of his elegant Victorian home, wondering what the hell had made mankind so crazy as to destroy each other. He didn't feel very secure in Dorchester, he was just resigned to the possibility that if bad news would come, it would hit everybody. Still, he worked at his pipe with particular affection, realized his mortality and jammed another batt of tobacco into it.

At that moment a brilliant white light serenely filled the street outside his home in front of him and he watched the irradiated street pedestrians scramble for cover.

Although his house was angled opposite the way necessary for the rays to come through, he scrambled for cover himself.

Ten miles from the Court House, Jim McGuffin could hear his old wooden house crack under the strain of the blast 42 seconds after he first saw the white light fill the streets of Dorchester.

All his windows burst in but the shards didn't have the winds strong enough to carry the glass around the room. Jim was safe under his bed, but even after it was obvious the winds had come and gone, he was still praying. The 40 m.p.h. winds had evaporated and his house had suffered some minor shingle damage.

Many people in Dorchester had first or second degree burns and many children had their vision obscured after looking in the sky at the super-nova like flash.

Anybody who hadn't watered their lawn recently was busy putting out a lawn fire, but water pressure was very low, and within an hour was non-existent.

This caused a panic about water supplies, particularly because it was clear overhead and rain couldn't be expected for a few days. Both Lambeth and Thamesford suffered over 100 fatalities due to burns (Lambeth), flying glass, concussions, etc.

In Lobo and Thamesford, anyone looking at the sky at the time of detonation would be dazzled for several hours to three days, and several kids received first degree burns although parents generally kept children indoors to avoid that sort of thing.

Barns and wood houses at this range (10 to 15 miles from the Court House) were slightly charred, and a number of grazing land and wheat fields were on fire, which took days to put out, and a number of crops were destroyed. (Two months later, that crop would be worth 60 -100 times its present value.)

Later that week, word got out to the survivors that people as far away as Port Stanley and St. Thomas had received retinal burn spots on their eyes from looking in the sky at the time of detonation. They would have slightly impaired vision for the rest of their lives, which is better than most people in London could say.

The next day, one helicopter from St. Thomas flew over the city taking photographs of the destruction and tried to pinpoint any survivors for any rescue teams. All roads were blocked by tremendous quantities of debris. In the downtown, it was impossible to even tell where the roads once were, debris was so evenly distributed.

About the only way you could get any bearing was where the forks of the Thames met, but even then, the bridge at Stanley Street, the bridge at Queens, had fallen into the river. Hundreds of cars and houses had been tossed into the river as well.

The destruction was complete until you reached, say, Oakridge in the west, where every house was levelled flat except for the occasional brick house. Even then its roof was entirely gone and the inside was a complete mess. The same was pretty well true for Orchard Park, Berkshire Village, Cleardale, Carling Heights.

St. Joseph's Hospital and Victoria Hospital were totally devastated. The Victoria-Westminster Hospital was 80% destroyed, and with 98% fatalities, University Hospital was totally destroyed. Forty-six doctors were alive (out of 465 alive before the blast) to treat the 48,000 injured.

CASUALTIES:

214,000 dead (incl. critically injured)
22,000 seriously injured
26,000 minor injuries
12,000 no injuries
(Figures do not include refugees from Windsor, who perished.)

At the four-mile mark, there was some evidence of a civilization having existed. Most brick houses in Byron were intact although most rooves were cracked or seriously damaged. All wood frame houses in Byron were totally flattened. A few brick houses in Nelson Park remained, as did a couple in White Oaks, Northridge, and the northwest corner of Whitehills.

It took four weeks before enough bulldozers could be diverted to London to clear away one main artery (since Ottawa, Toronto, Hamilton, Sarnia and Windsor were also severely damaged). Any survivors found refuge in St. Thomas, Lucan, Thamesford, Woodstock and many just slept out in the open if they were miraculously uninjured.

Isolated fires from gas explosions gutted some of the homes that remained intact at the city's edge. Very few cars were intact, although food was not yet scarce in the city; so many houses where the occupants were dead had been scavenged for food that was still intact.

Because the weapon detonated over London was an *airburst*, there was only local fallout over the city, as opposed to the massive radioactive debris that follows a *surface* burst (the Bruce Nuclear Reactor had one of those). Still, half the survivors developed minor to moderate symptoms of radiation sickness, a few died, but most recovered within three months.

The survivors however, quickly were made aware of new dangers, including blistering sunlight in the mid-day period which caused severe burns. Sunburn lotion was, of course, nowhere to be found. Water was scarce, and dehydration became a serious spectre. Still, the Thames River water, when boiled, proved adequate.

Within six weeks, a major effort co-ordinated by a hastily formed regional government was able to gather a surprising number of volunteers to clear roads in livable suburbs with whatever machinery was available.

Nuclear power is a fantastic release of energy beyond anything you could ever imagine.

A one megaton warhead weighs less than 2,000 pounds and yet when it releases its (nine cubic feet of fusion-fission material) energy it is equivalent to 1,000,000 tons of high explosive, or 2,000,000,000 pounds (two billion) of dynamite.

A stick of dynamite weighs less than one pound, thus 1,000 pounds of plutonium (with fusionable hydrogen) is equivalent to over 2,000,000,000 sticks of dynamite.

Look at that another way. It would take a train of boxcars *fifty-two miles long* (10,000 boxcars!) to carry that much dynamite.

While that much energy from a few cubic feet of mass is truly beyond imagination, that deployment of energy has a great deal of redundancy.

Two billion sticks of dynamite evenly distributed in every structure in London would level the city flat (20,000 sticks of dynamite per building). In fact, that much dynamite evenly distributed could destroy every house, building, apartment, and structure in the entire nation. (Five sticks of dynamite will destroy a house.)

But a one-megaton warhead, while releasing the same energy, does not release it in the *same way* as dynamite. Dynamite is pure *blast* pressure; its real technical description is 'wave front dynamics', but for our purposes, 'blast' will do.

A one-megaton weapon would destroy 90% of London and cause casualties in the same range, but two billion sticks of dynamite is much worse. Why? Because in a nuclear explosion so much energy is used destroying what has already been destroyed. The core of a nuclear explosion is 1,000 times more than necessary to destroy the first half mile in diameter, but that build-up of energy is necessary to propel energy beyond the half mile radius. Much energy, since it goes in all directions, rises into the atmosphere.

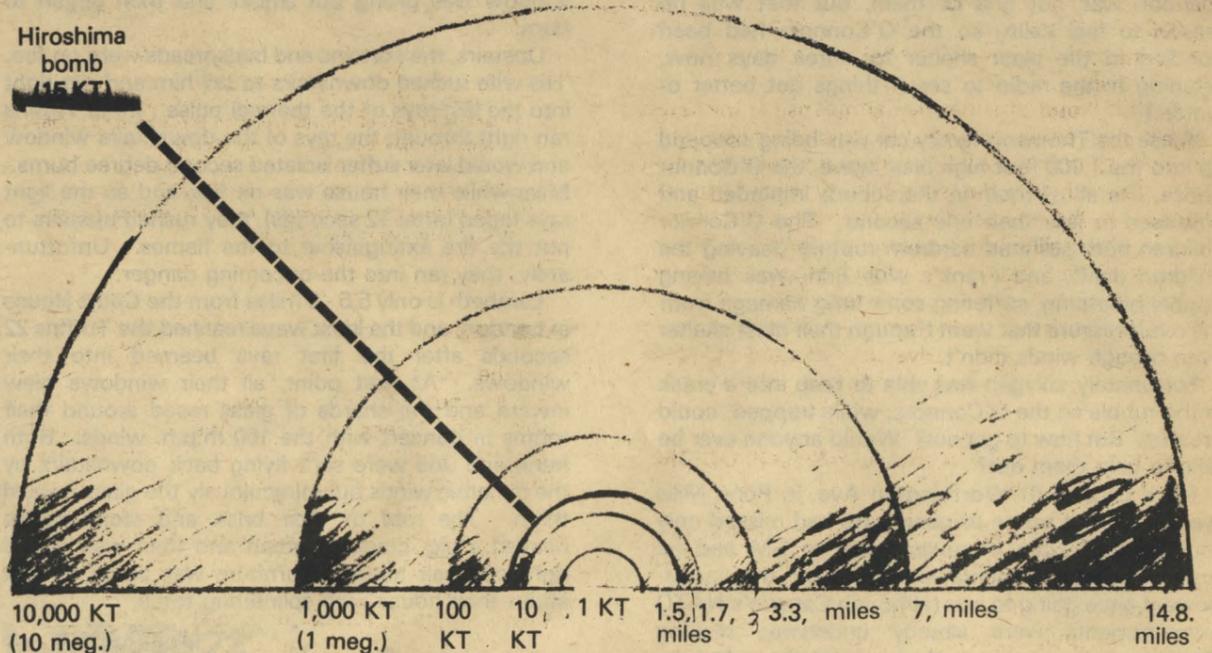
To deliver two billion sticks of dynamite in time of war would require tens of thousands of bombers—a few cubic feet of plutonium and hydrogen certainly makes delivery of the destruction much easier.

The megaton of energy released differs in effect from dynamite in that a nuclear energy release involves overkill; heat, blast, and internal radiation destroy much of the same area that another effect has already destroyed. In the immediate one and a half miles around 'ground zero' (the point of explosion), for example, the blast wave totally destroys much of what thermal radiation has already destroyed. (Thermal radiation is intense rays of light travelling at the speed of light, so concentrated with energy they burn anything combustible.) Thermal radiation is also called thermal pulse, or flash.

Above right is a diagram illustrating the various destructive capacity that each weapon size will do (including moderate - total destruction).

Notice that a one-kiloton weapon, which is one-thousandth the energy of a one-megaton weapon, destroys more than one-tenth the distance from ground zero. This is because with every ten-fold increase in energy released, the destructive radii increases by a factor of 2. As you can see, 1,000 times the destructive energy doesn't destroy a proportionately larger radius. In cubic volume however, the proportions are quite correct. A 1,000 kiloton (one megaton) weapon produces almost 1,000 times the cubic destructive power, but since

WHAT IS A NUCLEAR WEAPON?



there is nothing to destroy in the cubic area above the surface of the earth, this isn't what we're worried about (see diagram). A 10,000 kiloton (10 megaton) weapon releases energy that would destroy twenty times the radius of a one kiloton weapon.

So when you hear that a bomb is 65 times the size (energy) of the bomb dropped on Hiroshima (13 kiloton), it is 65 times the energy, but its destructive radii is only 4 times greater. Yet, you'll see this comparison all the time in misleading anti-nuclear literature, how the average weapon (one megaton) equals 65 Hiroshimas, etc. Hiroshima incidentally, was a city made of wood, bamboo, and light materials, and consequently it was very flammable. Modern cities are made of drywall, concrete, steel brick, etc. and will not be prone to firestorms, particularly in view of the destruction that can be wrought by the blast.

The explosive effect of nuclear weapons is obtained by a *fission* process only (the Hiroshima bomb), or a *fission-fusion-fission* process (hydrogen and plutonium bombs, the arsenal today).

Fission is the splitting of a uranium or plutonium atom when hit by a neutron. That's difficult to understand unless you can recollect your high school physics about unstable atoms.

Normally this neutron is sitting in an atom's central nucleus, bothering nobody. However, on larger, very rare atoms like plutonium or uranium, the neutrons can be tampered with and disturbed from its position. When it leaves its orbit, so to speak, it

smacks into other neutrons, which do the same thing, and so on. This is where the term 'chain reaction' (sound familiar?) comes in.

If the mass of unstable material is large enough or *critical* (say, a minimum of 35 lbs. of plutonium or 110 lbs. of uranium), these chaotic neutrons will perform a chain reaction that quickly multiplies and releases fantastic quantities of energy. This process from the first unstable neutron to the penultimate release of energy (the explosion) takes three millionths of a second! This is the process used in the bomb dropped on Hiroshima and Nagasaki.

The basic idea of fusion is to take two extremely light atoms of hydrogen and smash them together to form a heavier atom of helium. This process also liberates the neutrons in each and produces fantastic amounts of energy, pound for pound, three times as much as the fission process. However, the only practical way for the hydrogen atoms to fuse (that is, to smash together) is to heat them up to several million degrees.

For this they use a fission bomb as a detonator, the only known way to instantly produce temperatures of ten million degrees Fahrenheit. The fission material explodes and within the millionth of a second heats the hydrogen core ('heavy water' of deuterium & tritium, hydrogen atoms with an extra neutron-two neutrons) up to several million degrees, which releases its unbelievably combined energy in light (intense hot rays moving at the speed of light) and blast (moving at the speed of sound). Can you imagine such a simple theory producing the equivalent energy of a sun? That is why nuclear weapons are so utterly beyond imagination in the theoretical and the reality. This is why, unfortunately, so many myths, falsehoods and plain hysteria exist when a discussion of nuclear weapons is put forth.

The process above would, by itself, be called fission-fusion. However, adding even more punch to the bomb, a final cover of fission material is placed around the hydrogen container (called the 'tamper'). When the hydrogen core heats up, the neutrons hit this uranium jacket and create a second wave of fission. It is *this* fission that creates radioactive 'fallout', a subject we shall return to.

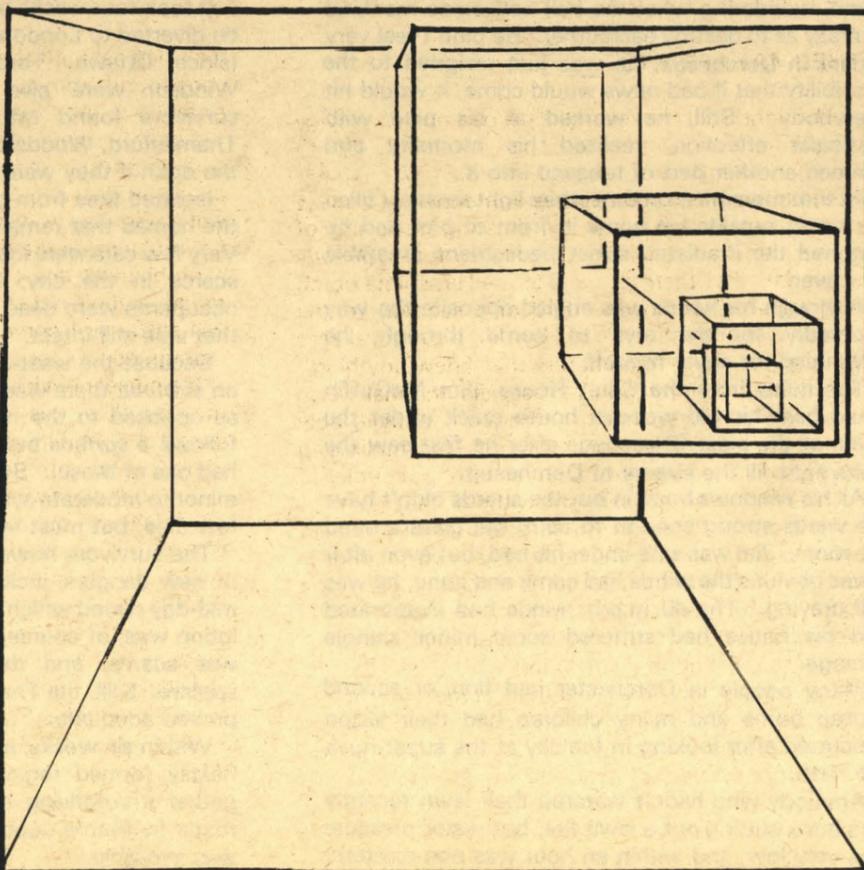
That is why fission-fusion-fission devices are called *thermonuclear* ('heat applied to atoms').

Without that outer tamper of uranium incidentally, you would have a bomb that would release large quantities of energy (with some punch removed) but no fallout, and in its experimental stages it was called the '*Neutron*' bomb.

Nuclear weapons can be exploded at ground level (surface bursts) or anywhere from 2,000 - 8,000 feet (air bursts) above ground level.

When a nuclear weapon explodes, the fantastic amount of energy released instantaneously heats a large volume of air to temperatures of tens of millions of degrees. This white hot air radiates heat intensely and gives off so much light that the one-megaton fireball exploding one mile above ground level would look brighter and larger than the sun *even fifty miles away*. (At fifty miles you would see the flash and hear nothing, a dull roar would reach you in five

The energy increase of 1 KT to 10 meg. is shown in its cubic proportions. The bottom surface represents the terrain affected.





minutes.) On a clear night you could see the flash light up the sky 400 miles away.

At the instant of detonation, the fireball of a one-megaton bomb is 400 feet in diameter expanding to 5,700 feet in diameter after ten seconds.

Like a hot air balloon (in fact, it is helium), the fireball is carried up into the air at a rate of 300 feet per second. After about a minute it has risen to 25,000 feet (if it was a surface burst, 30,000 feet if an airburst) and has cooled to the point where it is no longer giving off light.

As this cloud of super-heated gas rises, the outer edges meet cooler air and slow down their rise while the inner part rises faster, forming a smoke ring that lags around below the rising centre. This forms the famed 'mushroom cloud' with its long stem of debris and smoke trailing underneath.

At a certain point, the cloud stops rising and begins to spread out into a flatter shape. When it finally stops rising, a one-megaton burst is usually twelve miles high and twelve across; a ten-megaton burst is twenty miles high and fifty miles across!

THREE EFFECTS OF A NUCLEAR EXPLOSION

The effects of a nuclear detonation (bomb only, nuclear reactors have no potential to react like this under any circumstances) important to you are:

- 1) shock wave effects (blast)
- 2) thermal pulse (flash)
- 3) fallout.

The shock wave moves outward from the detonation in all directions at the speed of sound (one mile in four seconds), a combination of overpressure and dynamic pressure.

Overpressure is when high air pressure surrounds a body of lower pressure; in this instance it is a fabulous difference. The normal atmospheric pressure in London is 15 pounds per square inch. The concept can be described like a vise squeezing in on the sides of a cardboard box, but when there is equal air pressure in the entire environment (normal), imagine an identical vise pushing out from the inside of the cardboard on the same two sides with the same 15 pounds per square inch force. The pressure on each side is balanced and the box remains intact. If the pressure from the vise on the outside became much greater very quickly, the box would collapse. That is how overpressure works. Conversely, imagine the vise inside the box increasing its pressure greatly (at once); the box would explode outward. That is what would happen to the human body in space without a pressurized suit. This is also how an explosion inside your house would work. Minor changes that happen gradually over 15 to 20 seconds within one pound per square inch can be handled by the body---this is the phenomenon of your 'ears popping' when you are driving up steep hills and then down again. The air pressure lessens the higher you go up in altitude, then increases as you go down.

A nuclear explosion changes the air pressure instantly, much too fast for the body to adapt, and this overpressure moves out at the speed of sound. It lessens its impact with distance outward, but it (a one-megaton explosion) is so powerful as to cause all lungs to collapse (99% fatalities) one mile from detonation, houses to implode inward at three miles. That is *fantastic* overpressure, beyond your imagination.

Glass windows will implode inward as far as fourteen miles from detonation of a one-megaton weapon.

Dynamic pressure is really super high winds, and for the first three or four miles in any direction of the detonation of a one-megaton weapon, it is far worse than any hurricane. The winds one mile from detonation are 350 miles per hour, the air pressure is 60 pounds per square inch (45 p.s.i. overpressure), and destroys everything. These winds will lift a human body up and throw it over three miles and will lift items weighing over 1,000 pounds and toss them over a mile! That is *unimaginable* wind power!

The chart at top illustrates the blast effects on a city from an airburst detonated between 2,000 to 5,000 feet (the distance from detonation to ground has to be taken into account). These effects are also integrated into the **We're Hit!** nuclear disaster simulation on pages 5 to 7. Surface bursts are more destructive (if that is a comprehensible concept, 100% destroyed instead of 99.9% destroyed) at the core (the one mile from ground zero), but are much less severe 3.5 - 6 miles out. Surface bursts however, offer one significantly greater problem---fallout.

Some qualifications are in order. If you are anywhere near (within twenty miles) a target and

Arrival Time and Radius of Shock Wave Effects

SHOCK WAVE EFFECT	RADIUS AND ARRIVAL TIME			
	1 megaton		10 megaton	
	MILES	TIME	MILES	TIME
Parked private airplanes damaged but flyable; windows have light damage [0.5 psi]	21	1.5 min	45	3.0 min
Windows heavily damaged, wood frame houses lightly damaged. [1.0 psi]	14	1.0 min	28	2.3 min
Some glass shards capable of penetrating abdominal wall.	8.5	38 sec	15	1.0 min
Human body thrown hard enough to cause incapacitating injuries.	7.0	28 sec	18	1.2 min
Human body thrown hard enough to cause 1% fatalities.	5.8	25 sec	15	1.0 min
Forest roads impassable due to fallen trees.	5.7	24 sec	15	1.0 min
Wood frame houses collapse, 1% of eardrums rupture. [5 psi]	5.5	22 sec	9.5	35 sec
Brick apartment houses suffer severe damage.	4.2	16 sec	8.9	32 sec
Human body thrown hard enough to cause 99% fatalities.	3.8	14 sec	8.9	32 sec
Cars and trucks damaged too severely to drive.	3.6	14 sec	8.9	32 sec
Reinforced concrete houses lightly damaged. [7 psi]	3.5	13 sec	7.5	28 sec
Minor injury to lungs from overpressure. [15 psi]	2.2	7 sec	4.6	15 sec
Highway bridges of 250-400 foot span barely passable.	2.1	7 sec	5.7	20 sec
Highway bridges of 150-200 foot span barely passable, multi-story reinforced concrete office buildings severely damaged.	1.9	6 sec	4.7	15 sec
Multi-story steel frame office building (earthquake resistant) severely damaged.	1.7	5 sec	3.8	12 sec
Reinforced concrete houses collapse. [25 psi]	1.6	4.5 sec	3.4	10 sec
Lung injuries from overpressure cause 1% fatalities. [35 psi]	1.3	3.5 sec	2.8	7.5 sec
99% of eardrums rupture. [45 psi]	1.1	2.7 sec	2.4	6.0 sec
99% fatalities from lung damage. [65 psi]	0.9	2.1 sec	2.0	4.5 sec
Buried concrete arches collapse. [200 psi]	0.5	0.9 sec	1.1	1.8 sec

see the flash (you'll be dazzled a bit in any case), don't stand near any windows or you'll end up like Sally Hunsberger of Piccadilly Ave. in the simulation, pierced by hundreds of razor sharp glass shards. Glass is extraordinarily sensitive to overpressure; even at nine miles away, windows can implode inward with enough pressure to kill you.

At 4 - 6 miles the body could get thrown hard enough to cause fatalities on a grand scale, but this is true if a person stands stock still upright and lets it happen. From the point of flash (and you may be concealed from that, or can run within two seconds behind a tree), you have 16 - 24 seconds before the blast wave arrives. If you dive on the ground behind a large tree and grab its base, you will have a better than 50-50 chance of not getting swept away. The tree will snap surely, but likely at the point where most secondary trunks emerge, ten to fifteen feet above the ground, and winds will send that clear of you.

For a clear idea of what the blast would do to London, see our chart on the fold-out pages 16 and 17.

better or worse. Fog, rain, or black clouds will diminish thermal flash, but a consistent white cloud layer will reflect the light and heat back downward; a blue sky will produce the effects shown on charts.

For those who look at the fireball (airburst) from a distance where they won't get burned, a very small spot in the area of the retina will be permanently damaged and only those who are so unlucky as to be looking upwards at the time of detonation would suffer to the extent where their vision was slightly obscured forever; others would be dazzled for a few days (no ability to focus, flashing lights), but it would not be permanent.

Surface bursts are aimed at 'hard' targets where accuracy is necessary; these would include ICBM (Inter-Continental Ballistic Missile) silos (the underground storage places), submarine bases, nuclear reactors, hydro-electric dams.

Surface bursts cause only 60% of the damage and casualties of an air-burst.

Air bursts are used against city-wide targets.

We can examine from such information what areas would be most likely in a nuclear exchange to be

Maximum Radii of Thermal Effects

THERMAL EFFECT	RADIUS IN MILES	
	1 megaton	10 megaton
Retinal spot burns	200.0+	200.0+
Visible charring to some paper and cloth	11.0	30.0
Ignition of dry leaves	11.0	26.0
1st degree skin burns	11.0	25.0
Ignition of inky parts of dry newspaper	11.0	22.0
2nd degree skin burns	10.0	22.0
Ignition of dry grass	9.3	23.0
Visible charring of unpainted wood	8.4	20.0
Ignition of light blue cotton bedspread	8.2	20.0
3rd degree skin burns	8.0	19.0
Ignition of dry pine needles	7.0	16.0
Ignition of cotton venetian blind tape	6.5	16.0
Ignition of brown cardboard box	6.2	13.0
Ignition of khaki cotton shirt	6.0	15.0
Ignition of new blue denim	5.4	15.0
Ignition of new white typing paper	5.3	11.0

THERMAL EFFECTS

The light from the thermal flash of a nuclear device is so hot it will set things aflame instantly, or to cinders. A ray of white hot light from a one-megaton weapon reaches 5,000 degrees Fahrenheit at 2 miles (if the light lasts 4 seconds), creating coals out of stones, bricks, etc. (though only surfaces *directly* affected). The thermal pulse of the Hiroshima bomb was released within one third of a second, so the people within three miles of Hiroshima's ground zero were hopelessly burned before they knew anything. A one-megaton weapon releases its thermal pulse over 5 - 20 seconds. Although unbelievably dangerous, there is more potential for minimized burns because the skin can absorb a couple of seconds of intense heat-light without causing third degree burns as the blood carries a lot of the heat away to other parts of the body. That two seconds is enough to dive behind something solid blocking the thermal light rays. The chart above indicates the worst case scenario for thermal flash, also incorporated into our London simulation.

Depending on the weather, type of bomb, accuracy, target, surface or air burst, the effects are hard to predict for certain.

The thermal flash affects only what it hits *directly*. It declines in intensity as it moves outward, as the rays separate further. Weather conditions affect the thermal flash, although it is 50-50 whether it will be

regarded as 'hard targets' and the fallout that would correspond from them. (See Fallout map of North America, S.W. Ontario.)

Common materials may burn at distances of even 5 - 8 miles from the detonation point if they are dry and in direct flash. Wet pine needles, wet grass, etc. will not ignite. A winter snow will eliminate outdoor fire problems at the five to ten mile range (it won't be a problem at any point from the zero to five mile range---rubble doesn't burn). Most of the fires a city will suffer will come from exploding gas lines, gas storage depots, etc.

If a nuclear device is exploded in the driest summer months (like this summer, for example), forests would burn and it would be difficult to say when they could ever be put out in a total nuclear exchange.

Another phenomenon in addition to thermal flash and blast effects is the burst of electro-magnetic energy produced in the radio-radar portion of the spectrum. This is called the electro-magnetic pulse (EMP).

Air bursts (city busters) and surface bursts will not produce a significant EMP, but extremely high altitude explosions (say, 150 miles up, at the edge of space) produce spectacular EMP.

A strong EMP can induce a current of electricity to flow in *any large metal object*, such as an automobile body, a power line, a radio tower, transmitter, even air conditioners. The *longer* the object, the more powerful the surge of induced current.

This current could damage TVs, radios, micro-computers, telephones, power networks, *vital military satellites*, radio transmitters, etc. High altitude tests in the Pacific in 1964 knocked out emergency communications and all city power on the Hawaiian Islands, 750 miles away!

Calculations show one 10 - 20-megaton bomb exploded 150 miles over Omaha Nebraska would disrupt equipment coast-to-coast, including possibly missile co-ordinating systems. (Hoo boy!)

FALLOUT

Fallout is a very complex problem but one that has been exaggerated by various hysterical anti-nuclear spokespeople.

When a nuclear explosion occurs at ground level (surface burst) or within 1,000 feet of the ground, the fireball picks up millions of tons of smashed earth, concrete, human ash, debris (caused by blast and flash) and raises it into the rising gases of the fireball. These debris particles become covered with molten droplets of radioactive material.

When the explosion finally cools out, this radioactive debris is taken down to earth by gravity and winds. Fallout is radioactive dirt. It is not poisonous like nerve gas. Life threatening fallout consists of particles large enough to see in the air around you (although smaller particles accompany the larger ones) between one to twenty-four hours after a ground-burst detonation.



The radiation given off by fallout takes three forms: alpha, beta, and gamma rays. Alpha is harmless on unbroken skin (it is dangerous on third degree burns, but that won't be a worry to anyone burnt by the flash). Beta rays cause superficial burns if the particle actually comes in contact with the skin for several hours. If fresh particles are on your open skin, a superficial burn will be the least of your worries. That's because the deadly part are gamma rays.

Air bursts however, produce little or no fallout. Nagasaki and Hiroshima, for example, had no fallout casualties downrange of Hiroshima.

Radioactivity in fallout as it affects man is called 'roentgen equivalent man' or REMs.

If the Soviets use air-bursts to destroy cities, then 80% of North America will be fallout free. If all bursts are surface bursts, most of North America will be in fallout danger, but damage to cities will be substantially less.

After a surface burst, fallout gradually settles to the ground over the next 24 hours. This is called 'local fallout' and consists of particles large enough to see and smaller 'dust' particles which will give the air a hazy appearance for a number of days, but particularly as it is landing. The largest particles fall first, within one to four hours, and these would fall 15 to 60 miles downrange of detonation. By 24 hours, only very fine radioactive dust is falling. After the first couple of days, particles so small as to still be

in the air take weeks, months, and possibly years to come down to earth, usually carried by rain or snow. This is *delayed fallout* and will be responsible for an environmental cooling of about three degrees Fahrenheit for the next three years or so. Otherwise, delayed fallout poses few other problems; any major ones are dealt with in **You Can Survive**.

Since we cannot determine what month or season the Russians would attack, or what the winds would be like at detonation, we can only anticipate the most *likely* paths of fallout. Almost all wind patterns in South Western Ontario 8 - 13 miles up are moving due east.

The speed of the wind carrying fallout is very important in determining where fallout will land (see map). Since all significant fallout will fall in 24 hours, higher winds will distribute fallout over a greater area, increasing the areas in danger, but reducing the intensity of the danger to those affected.

Crosswinds may widen the path of fallout which could normally be expected to carry fallout east from detonation for about 300 miles in a width of 20 - 25 miles at 15 m.p.h.

Rain or thunderstorms at the point of the mushroom cloud will bring 10 to 30 times the fallout down to that area (within 15 miles of ground zero) but drastically reduce the fallout for everyone else downrange.

The charts below show idealized fallout distribution at various times after a ground level detonation of a one-megaton bomb, winds blowing in one direction.

To see how radioactivity builds up, here is some material taken from **You Can Survive**:

The dose of radioactivity absorbed by humans is called REMs; once these gamma rays are absorbed, you never lose them---they accumulate permanently in your system.

Let's say you're in direct line of the heaviest fallout from the Soviet attack on the Bruce Reactor, and consequently the most dangerous fallout caused by a one-megaton surface burst will land in your area within 60 - 90 minutes. These particles are most dangerous because the volume deposited will be the heaviest particles (containing more radioactivity as a result) and in greater volume. You're twenty miles downrange in Dobbington (or with a slight variation of the wind, Chesley).

Your house has survived minor blast effects at this range, only one window broke in fact, and the thermal rays had no effect on your moist lawn and painted house. Fallout arrives in sixty minutes. The rate of radiation exposure when particles *begin* falling is 10 REMs per hour for an exposed person (in the open). But fallout continues to arrive and in two hours the quantity and potency peak, and the rate is 1,000 REMs per hour. By six hours after the explosion, fallout stops arriving and decay has already set in, bringing the rate of exposure back to 300 REMs per hour.

But in *six hours*, the total accumulated dosage for a person standing outside (unlikely, but...) has accumulated to 3,000 REMs!

By 18 hours, the rate falls to 80 REMs per hour, the total dose is 4,800 REMs. After one week, the REM per hour is 5 and total dose is 6,700 REMs.

At the end of one month, the rate of exposure is down to one REM per hour and total accumulated dosage is 7,300 REMs.

It doesn't matter though, if you were living in Dobbington, you died three and a half weeks ago, if

you went about your business as usual.

At 100 miles from the Bruce in the path of fallout, it arrives in six hours and at first the dosage is one REM per hour, but three hours later the fallout has all arrived and the exposure rate is up to a peak of 12 REMs per hour (what a difference!).

By eighteen hours, the rate has decayed to five REMs per hour and the total dose is 80 REMs. At the end of one week, the rate is .3 REMs per hour; accumulated dose is 240 REMs. At the end of the month, the rate has fallen to .07 REMs per hour and the total-dose is 300 REMs.

300 REMs in one month is very risky, but you wouldn't die. You would get sick, and about ten to fifteen years might be shaved off your life, but what a difference that is between the folks in Dobbington (80 miles away) whose monthly dose was 7,300 REMs (24.25 times greater exposure). 300 REMs incidentally is what you'd get if you stood stark naked out in the open for the month. Even if you stayed indoor in a flimsy wood frame house for the month, you'd cut that 300 REM down to 100 REM, and you'd feel no ill effects at all (although five to ten years might be shaved off your Canada Pension).

Even as gamma, beta, and alpha particles decay, they create other by-products, some of which are equally dangerous (though avoidable): strontium-90, cesium-137, iodine-131, yttrium-90, xenon-90, barium-140. Many of those radioactive elements will advance bone cancer, leukemia, anemia, and failures of certain organs if ingested in sufficient quantities.

Another long-term consequence of a massive nuclear exchange is the depletion of the ozone layer, causing much plant damage and very difficult crop management. (See **You Can Survive**). The damage to the ozone layer is limited to five years as for practical purposes, but it would be thirty years before it was completely back to normal.

Other myths of nuclear weapons concern worldwide mutations (nonsense), worldwide disease, etc., and these are dealt with in our introduction.

THE NUCLEAR ARSENAL

Here is a breakdown of what the 'two sides' are believed to have in nuclear weaponry and warhead size. Explanations of terms are at bottom.

	U.S.	Soviet Union
Land-Based Intercontinental Ballistic Missiles (ICBMs)	1,052	1,398
Submarine-Launched Ballistic Missiles (SLBMs)	520	950
Long-Range Bombers	348	150
Total Delivery Vehicles (Launchers)	1,920	2,498
Total Warheads	9,400	7,500
Total Megatons	4,100	7,100

American arsenal of strategic weapons

Type of Launcher	Number of Launchers Deployed	Number of Warheads on Each Launcher	Yield Per Warhead (TNT Equivalent)
<i>Intercontinental Ballistic Missiles (ICBMs)</i>			
Titan II	52	1	9 megatons
Minuteman II	450	1	1 megaton
Minuteman III	550	3	170-350 kilotons
<i>Submarine-Launched Ballistic Missiles (SLBMs)</i>			
Poseidon	304	6-14	40 kilotons
Trident I	216	8	100 kilotons
<i>Long-Range Bombers</i>			
B-52 (1955)	90	4	1 megaton
B-52 (1962)	260	12-20	200 kilotons-1 megaton

The Soviet strategic arsenal

Type of Launcher	Number of Launchers Deployed	Number of Warheads on Each Launcher	Yield Per Warhead (TNT Equivalent)
<i>Intercontinental Ballistic Missiles (ICBMs)</i>			
SS-11	520	1	1-2 megatons
SS-13	60	1	600 kilotons-1 megaton
SS-17	150	4	700 kilotons
SS-18	308	1-10	500 kilotons-2 megatons
SS-19	360	6	700 kilotons
<i>Submarine-Launched Ballistic Missiles (SLBMs)</i>			
SS-N-6	416	1	1 megaton
SS-N-8	280	1	2 megatons
SS-N-18	176	3 or 7	200-500 kilotons
<i>Long-Range Bombers</i>			
Bison	35	4	1 megaton
Bear	105	4	1 megaton

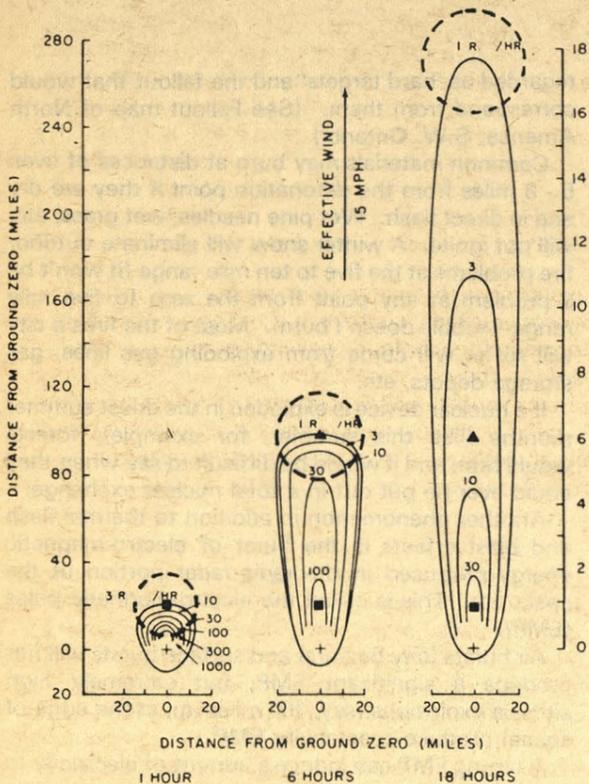


FIGURE 3: Dose Rate (R per hour) of Fallout Radiation. Figure indicates dose rate measured at three times following a 1-megaton fission ground burst.

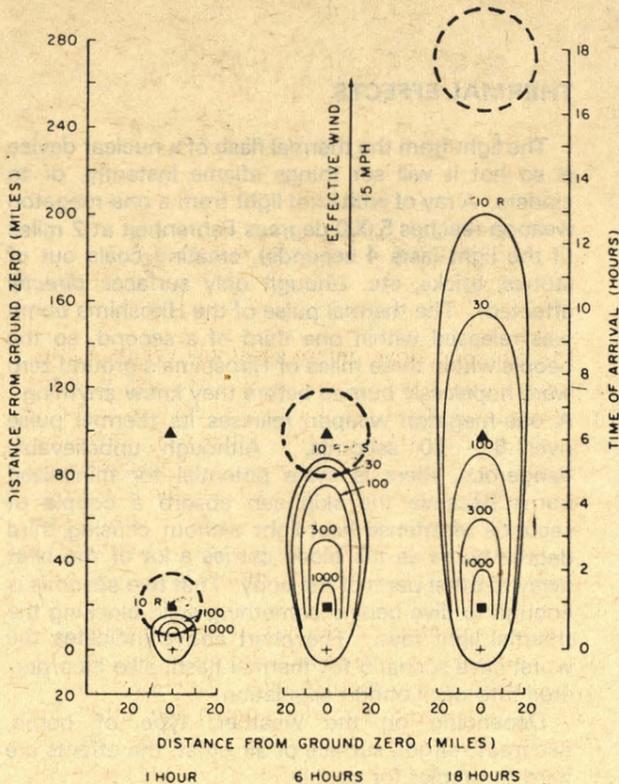
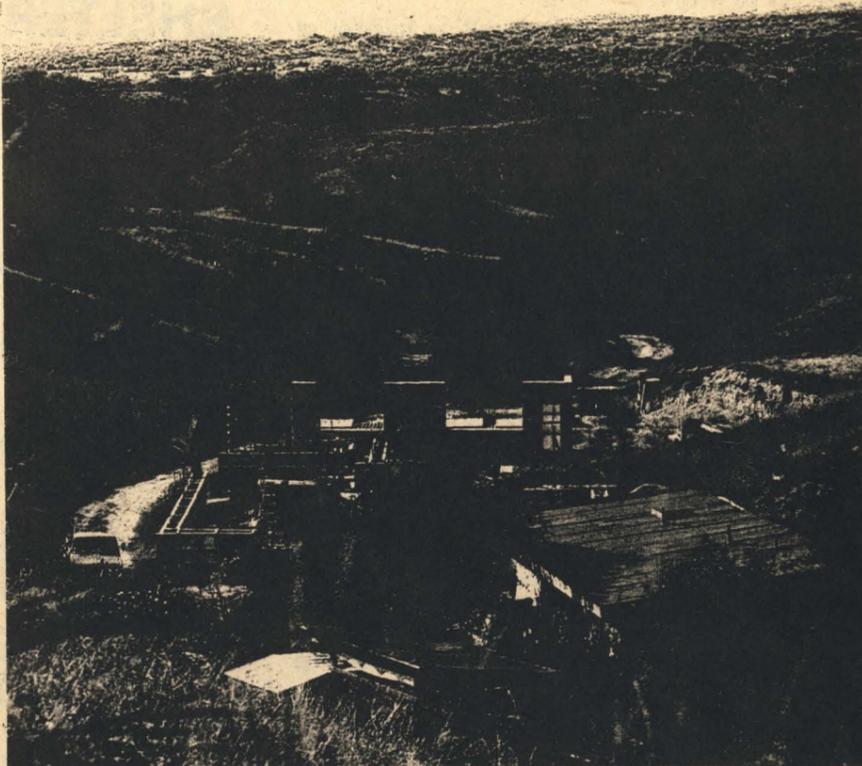


FIGURE 4: Total dose (R) of Fallout Radiation. Figure indicates total dose measured at three times following a 1-megaton fission ground burst.

Sounds Bad? YOU CAN SURVIVE!



Nuclear War will not strike like a bolt from the blue, nor will it be over in 30 - 60 minutes, especially if you live in London.

It could well be a long war, with long-term planning necessary, and yet it won't be a sudden war; the signs will be in the offing weeks prior to any nuclear exchange, as indicated in our scenario. The areas where a nuclear war is likeliest to evolve from are areas where both the United States and the Soviet Union regard (and have stated) a vital interest. Places like the Persian Gulf, the Middle East, Cuba and Germany.

The local Emergency Planner for London, D.P. McCracken received numerous inquiries about nuclear war escalation during the Falklands crisis, and yet that incident was over non-vital, non-superpower, non-strategic reasons. There are several major wars going on in the world today, Iraq and Iran, Libya and Chad, The U.S.S.R. and Afghanistan, Viet-Nam and Cambodia, El Salvador, to name a few, but none involve the interests of *both* superpowers. Afghanistan isn't worth one military advisor to the U.S., and El Salvador isn't receiving anywhere near the degree of arms that it would if the Soviets regarded it with true client-state potential. The other wars are serious but are not considered vital (economically essential) or strategic (does not threaten the military strategy of either superpower).

Will nuclear war break out? If I knew for sure, I'd be in the dried food business. One thing is certain, nuclear weapons will be *the* weapons for the next fifty years, and a large scale war is extremely likely in that time.

Will London be a target? Our interviews with the regional director of Emergency Planning Canada, David Francis, indicated there were ten sites more strategic to the Soviets in this country than London, but with 10,000 warheads on each side and London being Canada's ninth largest city and Canada being a member of NATO, do you want to take that chance? (Besides, when have you believed your government in the past?)

If you are truly concerned about surviving a nuclear war *intact*, then you have to contemplate a *worst case scenario*.

A worst case scenario is all that could possibly go wrong *does* go wrong, and you *still* are prepared to survive. This way, if anything turns out a little better than expected, then *you* are a little better off than expected. This worst case preparation takes the 'Murphy' out of Murphy's Law.

You've read what happens to you if a one-megaton air burst hits London. You don't want to be here or *anywhere* in London. Other likely targets in S.W. Ontario will be a surface burst at Douglas Point Nuclear Generator, an air burst at Chemical Valley outside of Sarnia (Corunna), Toronto, Hamilton, and the equivalent damage of a 500 kiloton air burst on Windsor.

Incidentally, we are only likely to be a target if the Soviets get the advantage of a first-strike (think about that at your next disarmament rally) and have the luxury of 2,000 - 3,000 warheads after eliminating most U.S. nuclear weaponry.

Much of the American Mid-West will be severely hit, including up to 300 one-megaton surface bursts per flight (150 silos) of silos, producing catastrophic amounts of fallout (see fallout map), and the fallout from this area *could* produce serious problems for the area from Windsor to London in the February-May period.

Any other place we haven't mentioned as receiving a direct hit will be safe from blast effects and heat radiation. Despite any myths you have heard, *any* place not directly hit (within a 10 mile radius) will be habitable, but treacherous (excluding any area within fallout danger 40 miles downrange of a surface burst). There are many serious obstacles one would have to overcome over the next five years, and many people just won't be up to it. This article is not for them. Yet, with foresight and determination, all nuclear war challenges can be overcome.

Where should you be?

Ideally, you want to have a retreat where there won't be any blast, heat, thermal flash or radioactive fallout. You have to combine this with the relatives you might have in these areas whose basements would be suitable as nuclear survival shelters (for one month). If you don't have relatives out there in the boonies, perhaps you'd like to consider buying a cottage or homestead *with a concrete basement* in it.

However, if you have a retreat that is in line of moderate or light fall-out, you will emerge after one month in your shelter unscathed and unharmed.

Remember, we have established the *worst* possible case scenarios drawn from four very reputable sources (we took *their* worst case assumptions) and then added our own.

Look at the full-size map of Southwestern Ontario.

First, we are assuming points hit in this area are Windsor (Detroit), London, The Bruce Nuclear Reactor (Port Elgin), Oscoda Bomber Base in Michigan, Sarnia, Toronto, and Hamilton.

You don't want to be anywhere near London come Doomsday

The Canadian government sees only Windsor and Toronto getting hit, so we have *worst cased* it to include an air burst on London, Hamilton, Sarnia, and a surface burst on the Bruce reactor (which, in a full scale exchange, seems likely). The Oscoda site (called Wurtsmith Air Force Base) is a primary target and would receive an airburst (it is a 'soft' target) but we have worst-cased it to a surface burst (producing fallout), because it *might* happen and you should be prepared.

For determination of fallout, you need to know the wind patterns in the troposphere, the area eight to twelve miles above ground level. These winds are much different from the winds down here on earth, but generally for Port Elgin, they come in from 220 degrees to 320 degrees, and most often between 260 degrees and 300 degrees. This means they are arriving from the west - west-north-west and going east - east-south-east. (See map.)

To worst case the situation, we have indicated in

heavy red the 30 mile wide swatch downwind of the reactor most likely to get fallout but have included other possibilities, depending upon the winds in the troposphere. Since we cannot anticipate the exact day, month, season or year that an attack is likeliest to arrive, you should be prepared for *all* possibilities when determining your 'retreat', though some possibilities may be very unlikely.

Radiological expert Sidney Drell, in the classic piece on fallout (*Limited Nuclear War? - Scientific American*-Aug. '76) has indicated that area C on the map might receive some, or potentially substantial fallout (200 REMs *indoors*, hospitalizing up to 50%, if we take the rosy assumption that hospitals will be around).

This is assuming a massive 300 missiles on each 'flight of silos' in the U.S., which would require the Soviets to use 3,000 warheads (not an unlikely case) on the ten 'flights' in the continental U.S.A.

So even if London was *not* struck by a direct burst, fallout moving at March wind speeds in the troposphere could produce serious fallout in this city, and most of us would get very sick (though not die) because we wouldn't be prepared for it. March winds are, however, three times faster on average than August winds, and twice as fast as November winds, so it too is a worst-case scenario because we simply wouldn't get any fallout except from February to May--but why chance it?

The area in white is our determination of the best places to be *with* a fallout and survival shelter. These are areas where you can expect little (less than 200 REMs total dosage outdoors) or no contamination.

Our second best areas are in light red and mean an outdoor dose of 200 REMs to 2,000 REMs in one month, still survivable without health problems *if* (and *only* if) you adhere to our shelter routine. Other areas are simply not recommended and you better not be there come the nuclear war.

Most of you are there now, in danger, that is.

Ideally, your preparations should be put in place in a time of no immediate danger, like *now*. We don't expect you to up and move into a small town; it is quite reasonable to want to live in a city or potential target despite the danger. But you have to be ready to evacuate to your 'retreat' quickly (by the safest method) and expect all your supplies and preparations to be intact when you get there.

We don't expect you to change your lifestyle, your work, or where you live. We think it's just a good investment to spend three or four weekends getting together this survival 'home' in case you ever need it. History proves your life *will* depend on it. Preparations made in panic will cause you to miss most essential items, and there is no way you could pack everything you needed to survive for a month in a few minutes panic.

Surviving 'a day or two' could turn you into a desperate person who'll stop at nothing to survive further. (Mind you, if you feel a bomb is coming to London, pack up and leave anyway; you can still use a lot of this information even surviving in a vehicle.)

Another advantage to preparing far in advance of any apparent danger is that martial law (Emergency Planning Order) will be declared and you might find a lot of roads off-limits, especially main highways. Have a few county maps on hand for the back roads.

Because London is one of the last targets on the Soviet kill list, if it is at all, this means you will know of other sites already hit before London gets hit, so

you will surely have a few hours to leave town. But any perceptive person should know two to three weeks in advance, as world conditions deteriorate. (See **We're Hit!**)

Because there will be a tremendous number of refugees from the U.S., Windsor, Sarnia, Toronto, and Hamilton if they are hit before London, you can bet that the 401 will be jammed and chaotic. Weigh these possibilities in mind when you plan your evacuation route.

Don't expect any gasoline at the pumps for three or four days before a strike; supplies probably won't be delivered. You won't be the only one watching world affairs deteriorate. Drivers will be hard to find to ship fuel, there will be hoarding, the military will requisition a great quantity, government centres will get priority status, particularly if martial law goes into effect weeks in advance.

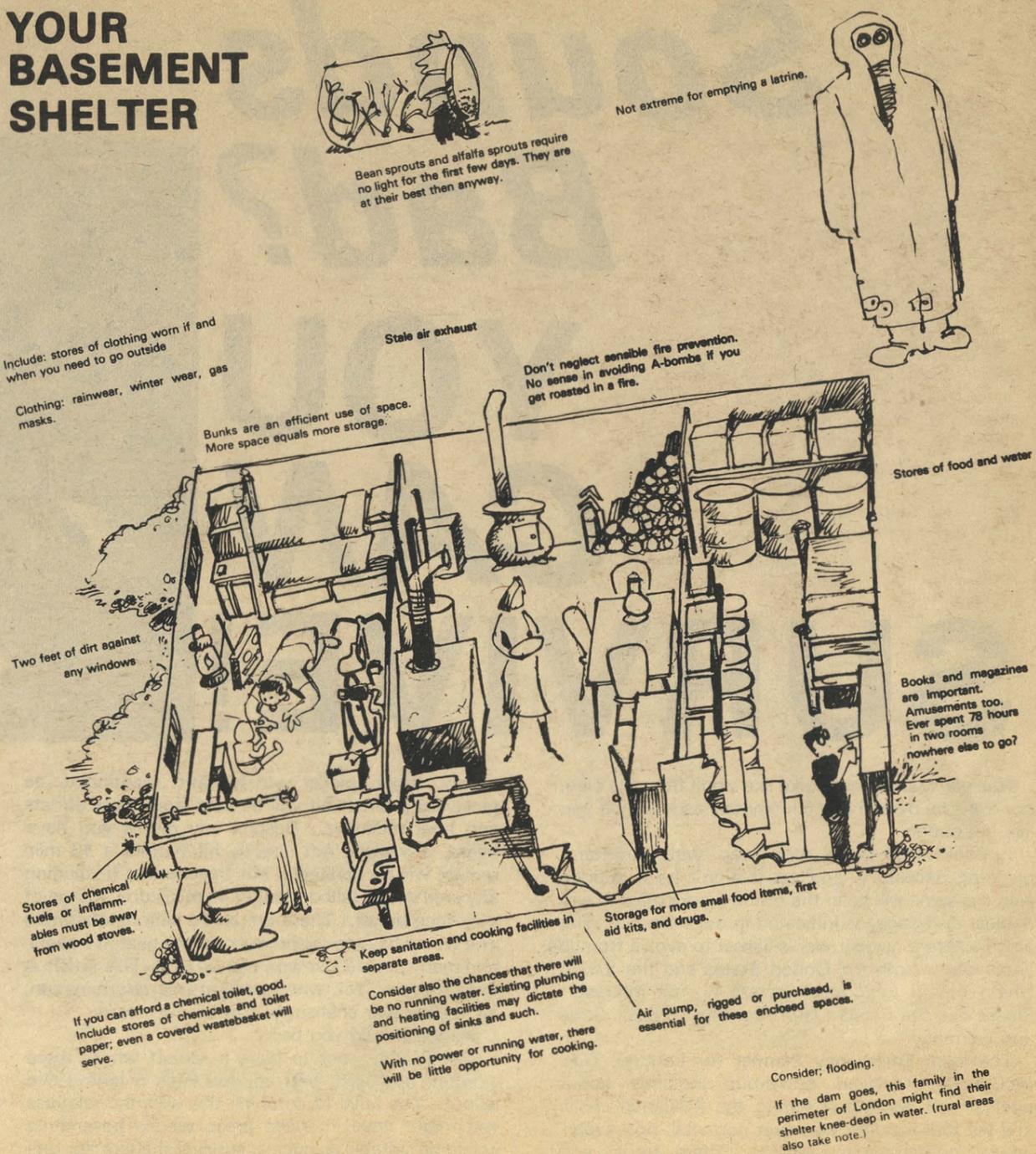
Food on the shelves will be scarce, people will just buy like crazy anything that looks like it'll last—especially toilet paper, canned goods, powdered milk, medicine, etc. Production will be down as more workers take holidays, but on the other hand, the government may order factories, packers, canners, etc. to work around the clock. Most people will consider their work expendable for two or three weeks in the face of possible nuclear war (you should too), and it's hard to predict what will and won't be available, legal, and possible.

Plan now.

Your retreat home should be a brick or stone house with a concrete basement almost entirely below ground level. A cottage is risky because it usually doesn't have a basement and thus offers a 'protection factor' of '3' against fallout (not nearly enough for security). It can receive damage from blast from up to fifteen miles away and windows can shatter up to eighteen miles away. Remember, most doctors in Ontario will be dead, the rest will be treating millions of injured refugees and will never make it out to the cottage to treat you for glass cuts, broken ribs, radioactive fallout. Your phone will be dead and you'll have no heat, light, or power. Do you really want to slowly, painfully, bleed to death from shards of glass imbedded in you? You might be alive and in agony for days before you die.

Do it right and prepare in a basement in a rural area, any area with a population of 50 to 15,000, or within five miles of these areas. Total isolation in a mountain retreat is dangerous because after a severe nuclear exchange, forest fires will be pretty widespread and there will be little hope of man-made efforts to put them out. Your food sources out there will burn up if your shelter doesn't, and you'll be

YOUR BASEMENT SHELTER



isolated without any transportation or passable roads.

Any basement in area 'A' or 'B' will be fine as long as the windows are covered with two feet of earth

(see drawing above). Now you are protected from blast and heat rays any distance over seven miles from detonation and you have begun to prepare against fallout.

ALL YOU EVER NEEDED TO KNOW ABOUT FALLOUT [But we're afraid to know!]

Life-threatening fallout is a product of *ground level* nuclear explosions such as those directed at ICBM silos, the Bruce Nuclear plant (assumably any other reactors), submarine bases, military installations, and air force bases.

Airbursts, the type used against 'soft' targets like London, Detroit, Sarnia, produce *no fallout of any note*. They are, however, 65% more thorough in ground level destruction on habitable areas (like cities). The only dangers posed to Southwestern Ontario as far as radioactive fallout is concerned is the serious fallout from a detonation on Douglas Point, moderate fallout from the Strategic Air Command base in Oscoda, Michigan, and improbable minor to moderate fallout from ICBM bases in the U.S. Midwest. All these fallout dangers are covered in maps in this issue.

(A digression: To damage the reactor core, the Soviet guidance systems would have to be more accurate than they are at present, but a near miss will still produce substantially the same fallout.)

That breaks the first myth of 'fallout'; that it will ravage 90 - 95% of the continent with its radioactive dust and particles. Most targets will be airbursts from 3,000 - 8,000 feet. Ravage it will, but only those who are *completely* unprepared and in the heaviest dose areas.

Fallout would be heaviest in the American Midwest, particularly the Dakotas, Iowa, Missouri, Illinois, Kansas, Minnesota, and Northern Ontario north of Lake Superior, southern Manitoba (including Winnipeg).

Fallout is radioactive dirt. It is not poisonous like nerve gas. Life threatening fallout consists of particles large enough to see in the air around you (although smaller particles accompany the larger ones) between one to twenty-four hours after a ground burst detonation.

This dust is millions of tons of human ash, incinerated concrete, dirt, wood, chemicals, all elements that were destroyed at the point of detonation, and these are sucked up from ground zero to a half-mile radius into the rising fireball. (See **What Is A Nuclear Explosion**). The particles are coated with molten residue that is produced by the *fission* part of the explosion.

The radiation given off by fallout takes three forms: alpha, beta, and gamma rays. Alpha is harmless on unbroken skin (it *is* dangerous on third degree burns, but that won't be a worry to anyone burnt by the flash). Beta rays cause superficial burns if the particle actually comes in contact with the skin for several hours. If fresh particles are on your open skin, a superficial burn will be the least of your worries. That's because the deadly part are the gamma rays.

Fallout is most potent within one hour after detonation, when it begins to fall back to the earth about five to twenty miles from ground zero. From that time on, the radioactivity begins to reduce or *decay*. Whenever you first *see* or become aware of fallout, it will be most dangerous over the next hour.

After the initial explosion, this radioactive debris rises to a height of eight to twelve miles where winds in the troposphere guide its movement, while gravity pulls it back to earth.

Winds in the troposphere do not behave the same as they do at ground level, and while it is impossible to always predict the exact pattern on any given future date, winds at forty to sixty thousand feet are fairly reliable in *direction*, but speeds are much greater in late winter and early spring than in the summer and fall. Winds at forty thousand feet above the Bruce Nuclear Reactor move at about 15 m.p.h. in the east to east-south-east direction (see map). Winds are higher from February to May: 22-28 m.p.h.

On our map, several possibilities are indicated. Even in the troposphere, crosswinds happen and so a swatch of area fifty to sixty miles wide will receive some fallout, but the main deposits are twenty to twenty-five miles wide, widening slightly further downrange. While we have indicated a fairly wide range of *possibilities*, only one possibility *will* happen, lessening the over-all danger. For the art of *survival* however, we must consider all the variables in order to deal with anything that *might* happen.

Radioactivity is not good for the human body. Any amount is not a good idea if it can be avoided. However, getting down to the nitty gritty, there are levels of radiation that you can absorb with no short term ill effects. (If you get cancer at age 62 instead of 68, well, write me after the nuclear war and tell me if *that* worries you.)

Most levels of radiation in the unprotected environment can be effectively reduced by 40, 30, or even 100 times with adequate protection. This represents the difference between sure death and complete (well, relatively) health.

A faster wind will spread fallout over a greater area, bringing danger to more people, but proportionately reducing that danger to each person. Chart 3 shows the difference of distribution of fallout by total dose in the case of a 15 m.p.h. wind (August) or a 30 m.p.h. wind (March).

The dose of radioactivity absorbed by humans is called REMs (roentgen equivalent man); once these gamma rays are absorbed, you never lose them, they accumulate permanently in your system.

Let's say you're in direct line of the heaviest fallout from the Soviet attack on the Bruce Reactor, and consequently the most dangerous fallout caused by a one-megaton surface burst will land in your area within 60-90 minutes. These particles are most dangerous because the volume deposited will be the

heaviest particles (containing more radioactivity as a result) and in greater volume. You're twenty miles downrange in Dobbington (or with a slight variation of the wind, Chesley).

Your house has survived minor blast effects at this range, only one window broke in fact, and the thermal rays had no effect on your moist lawn and painted house. Fallout arrives in sixty minutes. The rate of radiation exposure when particles *begin* falling is 10 REMs per hour for an exposed person (in the open). But fallout continues to arrive and in two hours the quantity and potency peak, and the rate is *1,000 REMs per hour*. By six hours after the explosion, fallout stops arriving and decay has already set in, bringing the rate of exposure back to 300 REMs per hour.

But in *six hours*, the total accumulated dosage for a person standing outside (unlikely, but...) has accumulated to 3,000 REMs!

By eighteen hours, the rate falls to 80 REMs per hour, and the total dose is 4,800 REMs. After one week, the REMs per hour is 5 and total dose is 6,700 REMs.

At the end of one month, the rate of exposure is down to one REM per hour and total accumulated dosage is 7,300 REMs.

It doesn't matter though, if you were living in Dobbington you died three and a half weeks ago, if you went about your business as usual. Here is what the average adult (16-50) can withstand and the consequences:

EXPOSURE — VISIBLE EFFECTS	
Short-term Exposure	Visible effect
50 R	No visible effects
75-100 R	About 10% of the group* may experience brief periods of nausea on day of exposure.
200 R	As many as 50% of the group may experience some symptoms of radiation sickness, although only 5% to 10% may require medical attention. No deaths are expected.
450 R	Serious radiation sickness in most members of the group followed by death of about 50% within two to four weeks.
600 R	Serious radiation sickness in all members of the group followed by death of almost all members within one to three weeks.

The term "group" as used in this chart refers to a number of people large enough to include individuals from the most sensitive to the least sensitive to radiation exposure.
source: Radiological Monitoring, HS-3, April 1980, Federal Emergency Management Agency.

The elderly and children are more sensitive and would have to be protected even more strenuously than adults. Standing out in the open, a person at twenty miles downrange receives the full dosage pointed out above.

You need protection.

Factors involved in fallout protection are:

- 1) distance from detonation (further away, more decay and less volume of particles)
- 2) barriers to gamma rays
- 3) physical distance between you and the nearest fallout particles.

Examining the first factor, let's say, knowing as we do that the Bruce is a likely target, you set up retreat one hundred miles from the Bruce but unluckily you still end up in the main fallout path. (It is obvious that given this choice now, you would try first to find a spot in the 'safe areas' indicated on our maps, but just for demonstration, you're staying with Aunt Tillie in Collingwood.)

At 100 miles from the Bruce in the path of fallout, it arrives in six hours and at first the dosage is 1 REM per hour, but three hours later the fallout has all arrived and the exposure rate is up to a peak of 12 REMs per hour (what a difference!).

By eighteen hours, the rate has decayed to 5 REMs per hour and the total dose is 80 REMs. At the end of one week, the rate is .3 REMs per hour; accumulated dose is 240 REMs. At the end of the month, the rate has fallen to .07 REMs per hour and total dose is 300 REMs.



300 REMs in one month is very risky, but you wouldn't die. You would get sick, and about ten to fifteen years might be shaved off your life, but what a difference that is between the folks in Dobbington (80 miles away) whose monthly dose was 7,300 REMs (24.25 times greater exposure). 300 REMs incidentally, is what you'd get if you stood stark naked out in the open for the month. Even if you stayed indoors in a flimsy wood-frame house for the month, you'd cut that 300 REMs down to 100 REMs, and you'd feel no ill effects at all (although five to ten years might be shaved off your Canada pension).

And this is a worst-case scenario. For the example above, we've assumed the winds are travelling in the

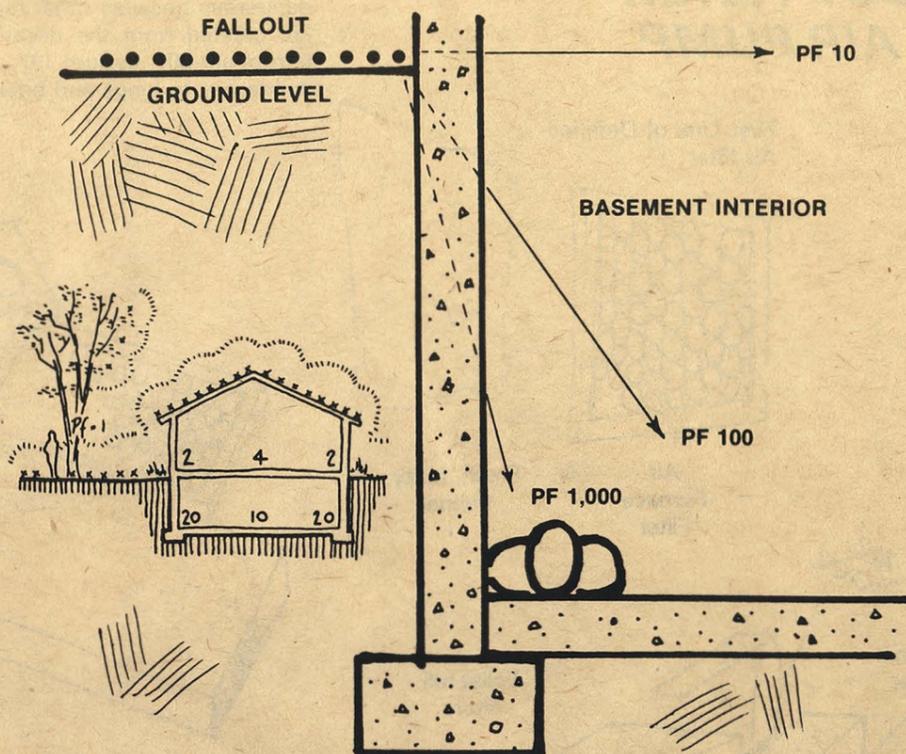


FIGURE 16: Geometric Shielding in a Basement. The PF provided by a concrete foundation wall increases greatly as the basement floor is approached. Radiation must pass through several feet of earth and concrete to penetrate the wall at such a steep angle. The insert shows

overall PF values within a one-story wood frame house. (Insert after *Shelter Designs in New Buildings*, Office of Civil Defense, TR-43, March 1967—D119.9:43.)

same direction, but it is more likely that cross-currents will throw fallout outside the rigid pattern of a 20-25 mile swath. A faster wind will drop less in your area.

But for total protection that assures you minimum risk and maximum health, at 30 - 350 miles from any surface burst, you need a fallout shelter.

When you talk to people about fallout shelters, they'll think of the Cold War, the RED Scare, air raid sirens. And that's natural, because the only real push for fallout shelters was just after the Cuban Missile Crisis in 1961. Shelters then were a good idea, although many designs suggested were flawed, and like today, understanding of nuclear technology was fraught with myths, errors, distortion and hysteria. Some shelters presented in the Sept. 15, 1961 issue of *Life* were treacherous and lethal, of no protection whatsoever. Many however, were quite relevant. The reason fallout shelters were seriously pursued is because they will work and the danger of a Soviet strike seemed real. However, with the relaxation of Soviet military supplies to Cuba, the Beatles, Viet-Nam, detente, Watergate, etc., the commitment to civil defense disappeared. Eventually the concept of protecting *yourself* from nuclear fallout became associated with the 'winnable war' concept promoted with sneers by disarmament flunkies determined to convince everyone that we will all perish in the inevitable nuclear catastrophe. Fallout shelters guarantee a 'survivable war' for you personally. Whether the war is winnable will not be up to you, but your *own life and survival* is up to you, because the Canadian government has no protection to offer you.

A concrete basement will act as a very efficient fallout shelter, and although we say prepare it now, even with a few hours notice, all you need do is cover all windows with two feet of dirt, fill as many containers with water as possible, grab some food and haul your family downstairs. You will be able to stay there four or five days, when the worst part has passed. Still, it's bare bones at best, but while you were in that basement, you were 20-40 times better off than being outside, and 8-15 times better off than being in any other part of your house.

Exposure protection is referred to as a PF (protection factor) with a number. PF 40 means it is 40 times safer than outside. PF 20 means 20 times safer, PF 1,000 means 1,000 times safer. PF 40 means the REM dose absorbed will be one fortieth of that which would be absorbed outside.

Our ideal fallout shelter is nothing more elaborate than a *dry* concrete basement.

A few principles on gamma rays: they are electromagnetic rays very similar to light except that they are invisible, contain extremely high amounts of energy and can *freely penetrate* most objects.

The key to protection from gamma rays is to get the *right* protection between you and the fallout. For gamma shielding, you need a mass barrier with a density of 150 pounds per square foot between you and the radiation source. This means that if you drew a one square foot on the surface of the wall and cut it out, it would have to weigh 150 pounds to totally block the gamma rays. The thickness of the

wall doesn't really matter, nor does composition. A foot of concrete or twenty feet of snow or three feet of dirt or a twenty gallon drum of water (150 pounds per square foot of shielding) will protect you to the same extent.

The second principle is distance, as space between you and the particles increases, the rays spread out, becoming less effective.

It works even more remarkably because if you increase the distance between yourself and fallout particles by a factor of 2, the gamma exposure falls off by a factor of 4. At three times the distance, you will get only one-ninth the exposure; at ten times the distance only one one-hundredth the exposure, the ratio always being determined by the distance squared.

Geometry also affects the effectiveness of gamma rays, since like light, they travel in straight lines. Corners (floor-wall angles in a cement basement for example) are very difficult for a gamma ray to get to from outside the basement wall; it has too much earth to go through and if it does penetrate the house it moves in a lateral line (see graphic). Thus a deep (8 foot) concrete basement can offer a protection factor of 1,000 in the crevices where the wall and floor meet!

In our first example, instead of a REM dose of 6,700 after one week (at Dobbington), it would be 340 REMs with a PF factor of 20, very risky and causing sickness, but you wouldn't die. But you'd have to evacuate after five or six days if that was the best PF you could get. PF 40 should be obtainable in a good concrete basement, and with effort, PF 60-80.



In Dobbington, a PF factor of 60 should be a minimum in order to avoid any illness or sickness.

However, if you had the average basement shelter with a PF of 20 at Collingwood, the outside total dose of 240 REMs after one week (300 after one month) would be reduced to a harmless 12 REM total (one week) or 15 REM total (one month).

All windows into your basement would have to be covered with brick or dirt (preferably both), and all your windows, doors in the rest of your house should be thoroughly closed to prevent particles from blowing into your home with normal air circulation and settling on the floor above your basement.

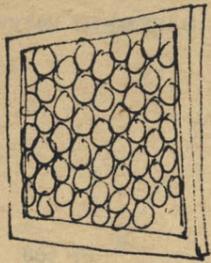
It will be necessary to spend 99% of your time sheltered (100% if possible) and you'll need serious preparations, particularly if this survival involves family or friends.

One problem with sealing your house airtight and sealing your basement airtight is that you won't get any oxygen unless you provide it. If you don't want particles seeping into your basement, you'll need an air pump and fallout filter to draw filtered oxygen into your basement. With only minor effort you'll be able to make an exhaust pipe that will allow humid and stale air to escape. To totally insure the lowest possible REM dose, plan to stay sheltered for 28 days.

HOW TO MAKE YOUR OWN FALLOUT FILTER AND AIR PUMP

Here is a very effective air draw pump and filter that would take you only four or five hours to make and is very effective. Breathing fallout particles is dangerous because other radioactive elements that are created from the decay stage of the particles (strontium-90, cesium-137, iodine-131, etc.) are dangerous to lungs and bones if ingested.

First Line of Defence
Air filter

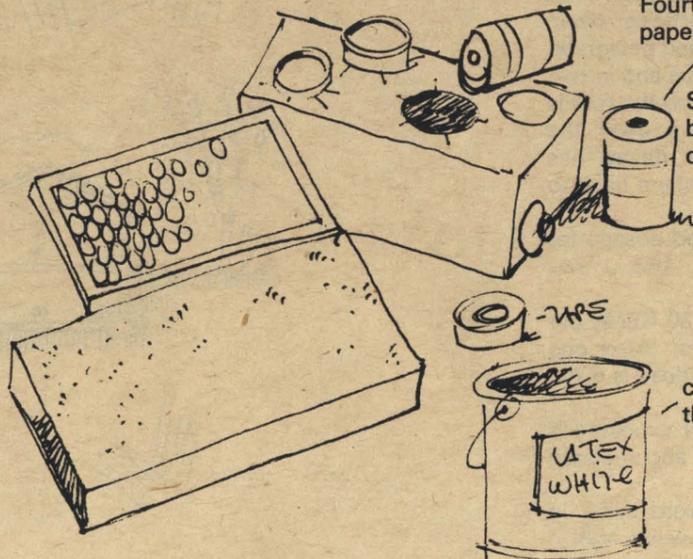


Air Furnace Filter

or Fresh, fuzzy flannel

Forty ounce juice cans with a toilet paper roll inside the cardboard tube.

Should be stuffed tightly with what has been rolled off the role to sit inside the can. Open at both ends.

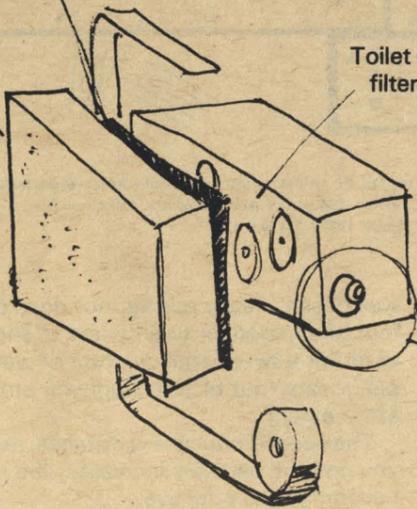


cheap and effective to seal the pores of the corrugated cardboard



Flannel filter

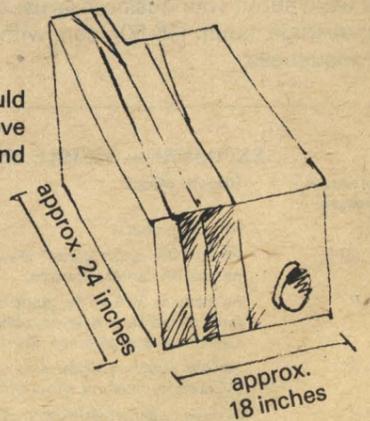
Toilet roll filters



a can inserted taped to seal

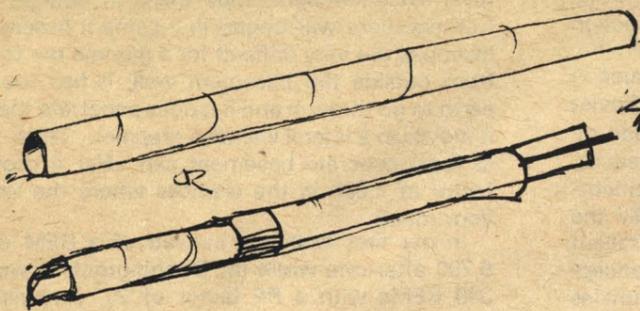
from this, we run a hose to the bellows

Filter unit (outside your shelter) should be in some waterproof place and above ground level away from rubble and heavy fallout particles.



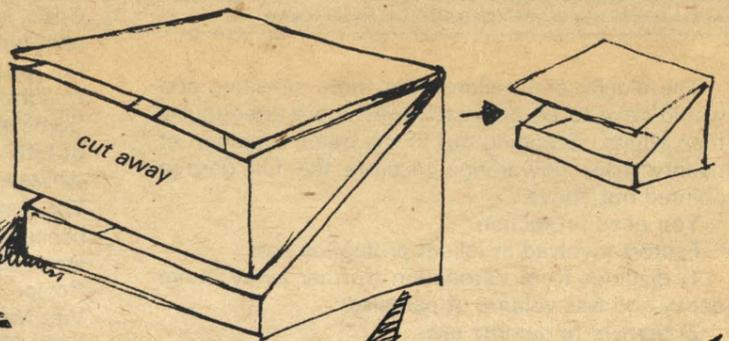
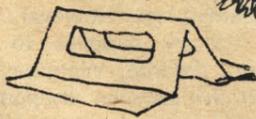
Before we make the pump, the conduit from the filter to the pump should be made. Assuming this is a last minute job, a three inch cardboard tube will do. If you don't have one, rolled newspapers should withstand the vacuum pressure if reinforced from the inside.

THE PUMP



Stiffener

Cardboard for handle



CAN

MORE TAPE

Plastic about 4 m

THE VALVES

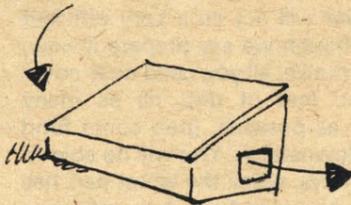
Inlet, inside
outlet, outside

from filter

to pump

air in when bellows is lifted

draws air IN and lifts intake valve inside the bellows

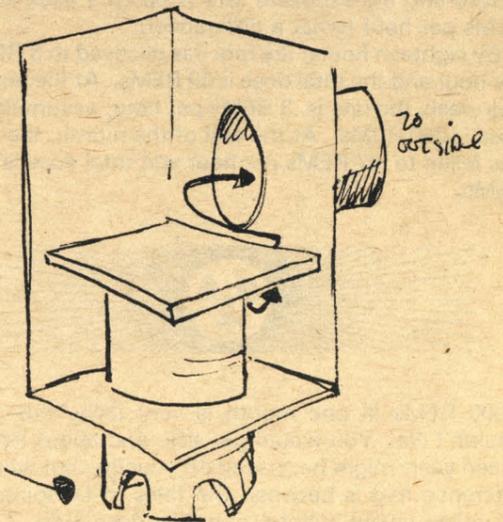


outlet valve

When the bellows come down, the air pressure inside pushes open the outlet valve. The flapper should again, be larger than the hole. You want do draw air through the filter, through the intake and push it out of the exhaust valve.

When minutes count, we should build the stale air pump last. This should of course be airtight.

heavy stale air



The flapper should be larger than the hole so it clips down and shuts the hole when the bellows comes down

This is an EMERGENCY MINIMAL SYSTEM air exchange. Invest in good commercial equipment before the alarm sounds! This is a far cry from 100% effective and assumes two to four persons in a shelter using this device almost constantly.

Once you have your air pump, filter, and exhaust, you should have a fallout meter to allow you to determine how radioactive your environment outside and inside your shelter is. You can buy a fallout meter (shown) from Survival Inc. (address in appendix) or make one of your own (see plans) for under five dollars.

It is important to be able to determine your hourly fallout dosage and record it. Such records will be valuable if you ever need medical help, consider X-rays in the future, or need to account for any nausea you might get. Recording the dose level in your shelter will alert you to any leaks in your pump

or exhaust valves. A fallout meter will tell you when it is safe to go outside, or whether fallout is still serious after 28 days. (You don't know for sure *when* and *where* the bombs will fall, do you?)

That completes your protection against radioactivity.

The world will be much different after a nuclear exchange, and more so in your shelter. It is likeliest that there will be no electricity (no refrigeration, light, heat), natural gas (heat), running water (or clean water running in the taps), natural light (your windows are covered), no flush toilets and no milk deliveries once S.W. Ontario has been under a

nuclear attack.

In short, you will be entirely on your own.

As well, don't count on any food on the shelves even a few days *before* a nuclear exchange, as panicky people will hoard 'just in case' (and that's smart) and grocery shelves will be empty.

Gasoline will be unavailable after you emerge from your shelter; penicillin, insulin, any kind of medication will be available only at exorbitant black market prices. The particular needs of your group have to be considered in preparing your survival shelter as well as general needs.

This survival section is divided into two sections: Part One: Survival In Your Shelter; Part Two: Survival In Your New World.

SURVIVAL IN YOUR SHELTER

WATER:

The average adult human uses up to twenty gallons of water a day for drinking, bathing, sanitation and cooking. But you won't have running water any more (while you're in your shelter anyway, although it might be restored in three to four weeks) after a nuclear catastrophe.

You'll need to store water in advance. Twenty gallons a day per person would require your own personal water tower. What you really need is half a gallon a day per person for drinking, and half a gallon per day for bathing. So you'll need a gallon a day per

person; for four people for 28 days you'll need 112 gallons stored in plastic containers holding 20-25 gallons each.

You'll have to ration water over each day in six 10-ounce servings. You can exist on a quart a day but you're pushing your luck. Remember, you can live without food for five to seven days, but water is required daily.

You'll have to ration out water for toiletry, bathing, laundry, cooking and decontamination (if, for an emergency, you have to go outside). If desperate, water from rain can be used for laundry and the toilet

if the water is filtered through a bucket of earth to clear out the particles.

Have as much water as you can contain stored away for this emergency. Fortunately, there are so many chemicals in tap water that micro-organisms will be unlikely even if water sits in your basement one to two years. Algae and other impurities are unlikely but if there is any doubt you can boil the water or add tiny quantities of iodine.

(Storing water is good advice in the city now, just in case a terrorist decides to strike at a municipality's weakest point---its water supply.)

FOOD:

Food choices ideally should reflect enough nutrients and variety to continue life as close as normal; but considerations such as shelf life (you don't want to change your shelter's survival food supply more than once a year), preparation ease and nutrition, dictate.

Some do *nots*: Do not store frozen foods for a nuclear aftermath. You could have no power for up to several months after a major exchange. Foods stored have to be viable at room temperature.

A stockpile of food for surviving after the 28 day

shelter period is necessary too, so your long term food supplies must be viable at room temperature. (See Part 2).

Here is a list of a balanced diet for four and its current cost at the A & P:

FOOD	DAILY AMOUNT FOR 1 person	DAILY AMOUNT FOR 4 persons	FOUR WEEK SUPPLY IN STANDARD CONTAINERS	SHELF LIFE (months)	COST
Crackers, cookies					
Candy	4 oz.	16oz.	6 packages	36	\$18.00
Sugar	1 oz.	4 oz.	4 1-pound boxes	18	\$ 6.00
Salt	2 tsp.	8 tsp.	2 pounds	36	\$ 3.00
Instant coffee, tea	2 tsp.	8 tsp.	2 pounds large box of tea bags - two large jars instant coffee	indefinite	\$ 0.75 \$18.00
Hot chocolate	2 cups	8 cups	two jars instant	indefinite	\$ 5.00
Milk [non-fat, powdered]	2 cups	8 cups	large box	indefinite	\$10.00
Evaporated milk	half cup	2 cups	16 cans	48	\$ 5.60
Juices	1 oz.	4 oz.	10 bottles	48	\$12.00
Fruits [peaches, pears, prunes, apricot]	half cup	15 oz.	30 cans	36	\$45.00
Vegetables	1 cup	48 oz.	15 cans	36	\$15.00
Soups [not tomato]	half cup	24 oz.	30 cans	60	\$20.00
Meats and substitutes [canned stew, salmon, tuna, baked beans]	1 cup	48 oz.	30 cans	36	\$60.00
Cheese - Peanut butter	1 cup	48 oz.	6 jars	24	\$17.00
Jam, jelly, marmalade			3 jars	24	\$ 7.50
Cereals			4 large boxes	24	\$12.00

These could constitute your whole 28-day survival provisions at a cost today of \$255.00. And as their shelf life expiry approaches, you can simply consume them and buy fresh provisions. This way, your investment is a one-time thing.

Vitamin supplements are handy too, but would be better saved for the post-shelter period when food

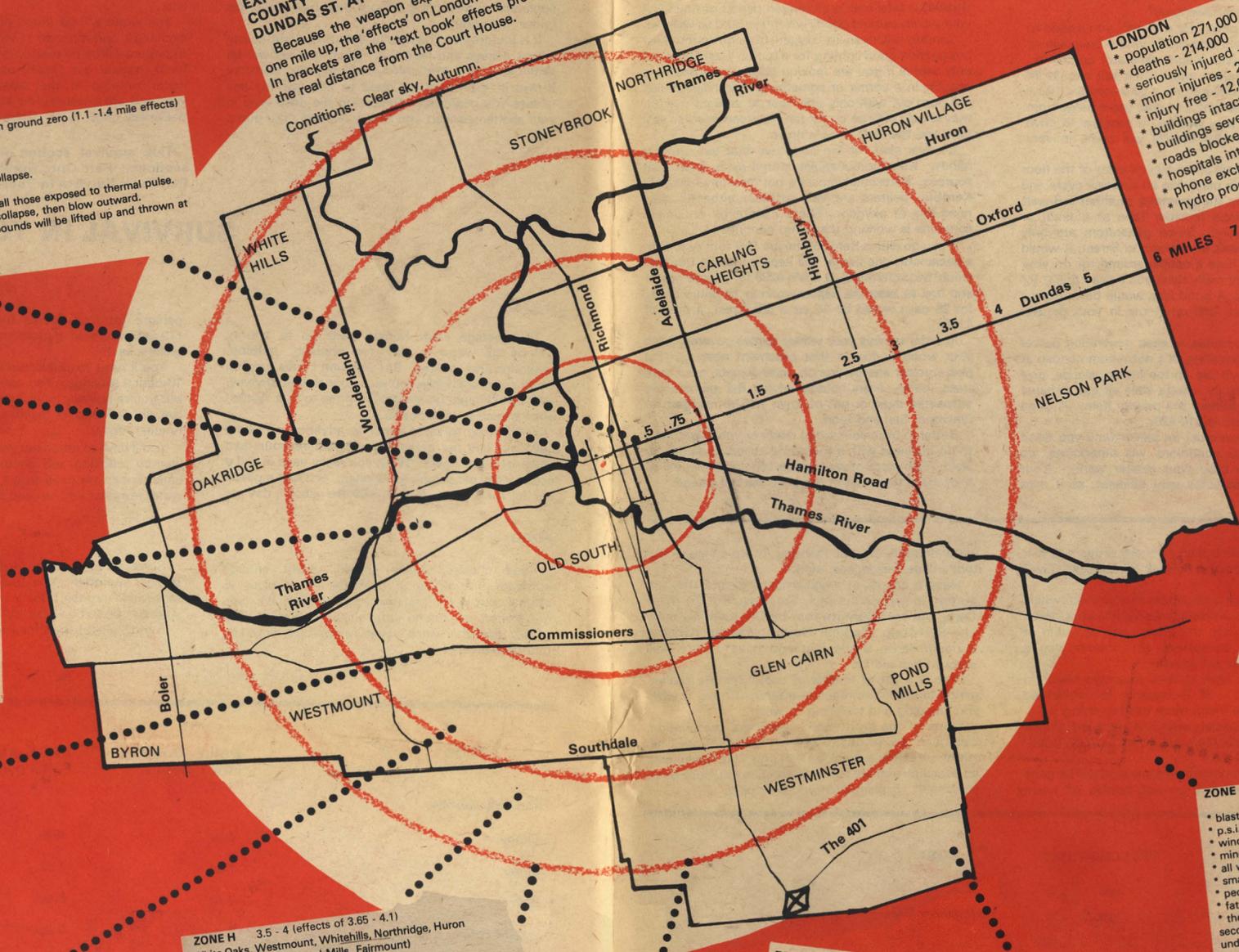
may be scarce for long periods of time.

The group leader will have to keep a very strict eye on the rationing out of supplies; no one must get anymore than anyone else unless they are ill. Situations in close, constant quarters can get ugly if anyone suspects others of receiving more than their share. This is a real problem of human nature.

A ONE-MEGATON WEAPON EXPLODED ABOVE MIDDLESEX COUNTY COURTHOUSE ON DUNDAS ST. AT 5,100 FEET

Because the weapon explodes at approximately one mile up, the 'effects' on London include this fact. In brackets are the 'text book' effects preceded by the real distance from the Court House.

Conditions: Clear sky, Autumn.



ZONE A ground zero (Court House to half-mile) Downtown London

- * p.s.i. overpressure - 50-60
- * winds - 400 miles per hour
- * all lungs and most bodies implode from overpressure
- * all charred skin or melted skin on all bodies exposed to thermal flash for more than 2 seconds
- * all combustible materials set aflame in direct rays of flash until 3 seconds later blast renders everything to rubble (total destruction)
- * 100% fatalities (immediate)
- * all buildings, cars, implode from overpressure and then collapse from winds, flattening, and then blowing pieces outward for several miles.
- * 100% FATALITIES

ZONE B half mile - mile from ground zero (1.1 - 1.4 mile effects)

- * p.s.i. overpressure - 35-45
- * winds - 350 m.p.h.
- * 10% fatalities from lung collapse.
- * 99% eardrums rupture.
- * charred or melted skin to all those exposed to thermal pulse.
- * all structures implode or collapse, then blow outward
- * all debris less than 1,000 pounds will be lifted up and thrown at least half mile.
- * 100% FATALITIES

ZONE C 1 - 1.5 (effects of 1.4 - 1.8)
(Old South, Old North, Oxford Park)

- * p.s.i. overpressure 22-30
- * winds - 320-350 m.p.h.
- * thermal flash - total charring (exposed less than 1.5 sec., third degree burns).
- * eardrums ruptured 60%.
- * lung collapse fatalities - 1%.
- * debris less than 750 pounds swept and thrown at least half mile.
- * heavy debris from zone A & B starts landing.
- * 100% FATALITIES

ZONE D 1.5 - 2 (effects of 1.8 - 2.2)
(Hamilton Road District, Old South, University Heights, Kensal Park, Carling Heights)

- * p.s.i. overpressure - 17-22
- * winds - 300 m.p.h.
- * all buildings destroyed.
- * debris less than 500 pounds swept up and thrown at least half mile.
- * charred bodies if in line of thermal pulse for longer than 2 seconds. (third degree burns under that.)
- * minor lung damage.
- * 50% ears ruptured.
- * 99% FATALITIES

ZONE E 2 - 2.5 (effects 2.2 - 2.7)
(Orchard Park, Oakridge Acres, Berkshire Village, Lockwood Park, Carling Heights, Broughdale, U.W.O.)

- * blast wave arrives in 7-10 seconds.
- * p.s.i. overpressure - 13-17
- * winds - 225-300 m.p.h.
- * charred bodies if exposed 4 seconds or more, third degree burns if less than 4 seconds.
- * total building collapse except for reinforced concrete & steel buildings (rare in London); even then windows, doors will be blown inward and furniture will be flying through the air.
- * cars collapse and thrown hundreds of yards.
- * human body still thrown hard enough to cause 100% casualties.
- * debris of 750 pounds falling.
- * 98% FATALITIES

ZONE F 2.5 - 3 (effects 2.7 - 3.15)
(Medway, Orchard Park, Oakridge Park, Norton Estates, Glen Cairn, Hamilton Road, Carling Heights)

- * blast wave arrives 10-12 seconds after detonation.
- * p.s.i. overpressure - 10-13
- * winds - 175-225 m.p.h.
- * thermal flash third degree burns fatal over 6 sec. exposure, third degree burns over 2 sec., under 2 sec., second degree burns.
- * minor lung damage.
- * eardrums rupture 60%
- * reinforced buildings still standing with severe damage.
- * reinforced brick houses still standing with roofs caved in.
- * reinforced concrete structures ignite until blast wave arrives.
- * human body thrown several hundred feet.
- * debris of 300-500 pounds landing.
- * 96% FATALITIES (survivors would be in reinforced basements although exit might be difficult).

ZONE G 3 - 3.5 (effects of 3.15 - 3.65)
(Stoneybrook, Masonville, Whitehills, Westmount, White Oaks, Westminster, Glen Cairn, Fanshawe College)

- * blast wave arrives in 12-14 seconds after detonation.
- * p.s.i. - 7-10
- * winds - 150-175 m.p.h.
- * cars and trucks received total roof and glass collapse, seats on fire.
- * light cars thrown several dozen yards, possibly more.
- * debris of 100-250 pounds landing.
- * 40% eardrums rupture.
- * human body thrown hard enough to cause 99% fatalities.
- * charred body if exposed 8 seconds, fatal third degree burns under 8 sec.
- * all trees snapped or uprooted items under 80 pounds swept up in winds.
- * all reinforced buildings (concrete & steel frame) stand, but windows, furnishing, etc. thrown about causing fatalities in rooms
- * all houses flattening.
- * 93% FATALITIES (4% injured).

ZONE H 3.5 - 4 (effects of 3.65 - 4.1)
(White Oaks, Westmount, Whitehills, Northridge, Huron Heights, Argyle Pk., Pond Mills, Fairmount)

- * 14-16 seconds after detonation.
- * p.s.i. overpressure 6-7
- * winds - 125-170 m.p.h.
- * thermal flash, charring if exposed 8 seconds, third degree burns (99% fatal) (1.5 sec. or under - second degree burns.)
- * 80% fatalities from human body being thrown (20% injuries)
- * debris of 100-300 pounds landing.
- * things under 50 pounds swept up.
- * all trees cracked or uprooted.
- * 80% of houses flattened.
- * 100% of roofs collapse or fly off.
- * 20% eardrums rupture.
- * bodies dropping out of air.
- * 90% FATALITIES (6% injured).

ZONE I 4 - 5 (effects of 4.1 - 5.1)
(Byron, Whitehills, Whitlow Estates, Nelson Park, Trafalgar Heights, Huron-Village)

- * blast wave arrival 16-20 sec. after detonation.
- * p.s.i. overpressure - 5-6
- * winds - 100-140
- * thermal flash third degree burns fatal over 6 sec. exposure, third degree burns over 2 sec., under 2 sec., second degree burns.
- * degree burns survive, all wood houses still collapse.
- * brick houses damaged.
- * all roofs damaged.
- * 5% eardrum rupture.
- * apartments, industrial buildings, reinforced buildings intact but windows, doors blown in, furniture thrown about injuring people inside.
- * debris under 100 pounds landing in great quantities, causing fatalities.
- * human bodies still thrown several yards causing 10% fatalities.
- * cars blown several yards.
- * people lying down will not be swept up.
- * wood surfaces charred, other exposed combustible elements alight (and may stay that way even after high winds have passed).
- * 85% FATALITIES (10% injured).

ZONE J (Lambeth, Arva, Fanshawe Dam) 5 - 6 (effects of 5.1 - 6)

- * blast wave delay 21-26 seconds.
- * p.s.i. overpressure - 3-4
- * winds - 70-125 m.p.h.
- * all wood surfaces charred.
- * 80% of wood frame houses collapse.
- * all light combustible items alight.
- * human body thrown hard causing serious injuries, 5% fatalities.
- * thermal flash causing third degree burns over 5 sec. exposure, second degree burns under that.
- * debris landing heavily (25-50 pounds)
- * items under 20 pounds thrown several hundred yards.
- * 1% eardrums rupture.
- * 20% FATALITIES (20% injuries).

LONDON

- * population 271,000
- * deaths - 214,000
- * seriously injured - 22,000
- * minor injuries - 26,000
- * injury free - 12,000
- * buildings severely damaged or destroyed - 75,000
- * roads blocked - all
- * hospitals intact - none
- * phone exchanges operating - none
- * hydro produced - none

ZONE M (Dorchester,) 8-10

- * blast wave delay 32-42 sec.
- * p.s.i. overpressure - 1.5
- * winds - 30-50 m.p.h.
- * wood houses lightly damaged.
- * flying glass from windows still fatal or serious.
- * 5-10 pound debris landing.
- * second degree burns if exposed 10 sec., first degree if exposed 4-10 sec.
- * bare wood charred.
- * window curtains could alight.
- * 5% FATALITIES (10% injuries).

ZONE L 7-8

- * blast wave delay 28-32 sec.
- * p.s.i. overpressure 2
- * winds - 40-60 m.p.h.
- * farm houses lightly damaged.
- * dry grass and leaves will ignite.
- * curtains could alight.
- * thermal flash, third degree burns if exposed 10 sec., second degree if exposed 4-9 sec., first degree if exposed 1-3 sec.
- * debris landing, little damage to rural area.
- * charring of bare wood.
- * glass fragments imploding still could be fatal.
- * 10% FATALITIES (12% injuries).

ZONE K 6-7

- * blast wave delay 26-28 seconds.
- * p.s.i. overpressure 2-4
- * winds - 50-100 m.p.h.
- * minor damage to houses.
- * all windows shattered.
- * small trees uprooted.
- * people still thrown several yards, causing serious injuries.
- * fatal pieces of debris still falling.
- * thermal flash causing third degree burns over 8 sec. exposure, second degree burns over 2 sec. exposure, first degree burns under 2 sec. exposure.
- * retinal damage if looking at detonation of flash.
- * all exposed wood surfaces charred.
- * 15% FATALITIES (25% injuries).

ZONE N (Lobo) 10-15

- * p.s.i. overpressure .5-1
- * winds - 20-40 m.p.h.
- * first degree burns possible.
- * in the case of surface burst, serious fallout arrives in the east within one hour. (Thamesford)
- * windows could still shatter.
- * dry leaves could ignite.
- * wood could be charred in spots.
- * 2% FATALITIES (5% injuries).

ZONE O 15-100 miles

- * if a person is looking to sky at time of detonation, will have retinal burn spots causing minor vision damage.

ENERGY

One of the culture shocks of the post-nuclear world will be the disappearance of such familiar, all pervasive sources of energy such as electricity, gasoline and natural gas. Having no heat, light or power could cause panic if you had to go 28 days in total darkness (all windows are blocked) and your survival attempt would be short lived.

Still, with some preparation, this can be handled.

You will need:

- A) a car battery
- B) a bicycle and bike generator
- C) a woodstove
- D) 2 cords of wood (minimum for winter)
- E) 12 dry cell batteries
- F) several dozen candles
- G) several dozen 5 & 10 watt bulbs
- H) several flashlight bulbs
- I) a flashlight
- J) a fire extinguisher.

Without light, you can't see any of the essential things you'll have to do (feeding, drinking, checking fallout meter, etc.) as well as groping in the dark will be scary and time-consuming.

The average car battery has enough energy stored in it to operate a small light for a week to ten days. A small 6 watt bulb gives off tremendous illumination

compared to no light whatsoever.

Go into your basement in the dead of night some time, on a cloudy night away from street lights, etc. You don't feel so comfortable, do you? Now strike up a match---at its brightest point it is still less than 6 watts, but doesn't it look much brighter? And didn't your fear immediately disappear?

Still, if you want power for a month, you'll need to recharge that battery and that's where your son or daughter's bicycle with a light generator comes in. (Two points: No parent worth their salt should let their 9-15 year old children on a bike unless it has a generator for a night light; and after you emerge from your shelter, there may well be no gasoline to drive your car with and that bicycle will come in very handy.)

Jack the rear wheel of the bicycle clear of the floor so you can pedal in place like an exercise cycle and lead the wires from the generator to either a 6-watt bulb, a radio, a tape recorder (one at a time) or recharge the battery. Since generators are only \$10-\$16 at *To Wheels* on Richmond Street, it would be a wise idea to have a couple around (or on your kids' bikes until you really think you'll need them) for multiple purposes. A good idea would be to have a few clips, adaptors, and whatnots in your general survival tool kit.

Although it is possible to keep generating power 24 hours long by pedalling, it's not recommended at all. The cyclists will use up too many calories, give off too much humidity, create stale air and exhaust your family. The battery is a priority item. A good used one at *Zubicks* is \$10-\$20.

Woodstoves are a must for winter (and you don't know when world conditions will deteriorate, do you?) in order to keep your shelter warm. Your exhaust for this must be very efficient, as it uses

fabulous amounts of oxygen which will require a large heavy duty bellows and regular pumping. However, if it is winter, working on the pump will create body warmth for that person. And it's a lot more preferable to freezing. Having temperatures below 45 degrees Fahrenheit is dangerous, below 32 degrees is fatal over a prolonged period of time. All your water, canned goods will freeze, and so will you.

Candles also use up oxygen (though much less) but provide good lighting for a room. Flashlights are only useful if you are looking briefly for something specific in a corner or something. Flashlight bulbs will burn out with only one hour of straight use, so they should only be on for ten to fifteen minutes at a time and then left to cool down.

Be ever alert for fire and have that extinguisher handy. Keep combustibles stored away from heat sources. Kerosene lamps are not recommended but KeroSun heaters are very efficient although they need lots of oxygen. These cannot be on unless someone is working the pump continually.

If you go with a KeroSun heater (for four people in a basement, one heater will keep you alive but two would be preferable), it costs \$269 for a large heater and fuel to keep the heater working 18 hours a day for 28 days would be 14 cans (25 litres), a cost of \$168.

In order to have your winter tactics covered, have your wood or fuel in that basement now. In the post-nuclear energy crunch, local forests, your own trees, parks, even houses where the owners are suspected dead or out of town will be ravaged for firewood, fuel and food.

Better to have your wood ready or you might have to do business with a mob (and absorb radiation as well). Two cords of wood costs \$50 right now; it'll be a lot more than that in the post-disaster period.

HEALTH CARE:

In the post nuclear period for up to six months, there may be no doctors available; those doctors alive may be near the cities, euthanizing many of the four million people wounded by third degree burns, lung-collapse and hopefully saving those with less serious injuries. Any rural doctor will be busy treating those with fallout sickness (who, unlike you, didn't prepare), but lacking adequate medicine, blood stocks, etc. to really be of any help. Medicine will be impossible to get unless you are in the military. The military will simply seize all stocks in virtually every pharmacy in the nation to deal with the cataclysm of pain and agony; demand will be 10,000 - 100,000 times the norm on tylenol, aspirin, narcotics, penicillin, gauze, etc. Simultaneously,

production and distribution of these drugs will halt until factories get back to normal. (One week? Two? Four? Fifty?)

Even if there were ambulances in your area (which there won't be), the phone lines won't work, there won't be any gas left, the drivers will be afraid of fallout or be sick themselves, and besides, you're number 650 on their list anyway.

You're going to have to take your own health in your own hands. (If it weren't for socialized medicine, you'd be much more used to doing it.)

If you need special medicine (insulin, ritalin, thyroid supplements, etc.), get a year's supply now! Otherwise you will die.

Tranquilizers and narcotics of any kind will be gone for some time, so buy several bottles of tylenol

extra-strength for your survival future. (-good for toothaches, headaches, etc.)

Have a couple of medical texts around that are written in layman's terms, like *How To Be Your Own Doctor Sometimes* by Dr. Keith Schnery and *Self-Help Medical Guide* by same. General common-sense is the rule and have a very well stocked first aid kit.

Here is a list of medicines useful for the shelter period and your emergence afterward (take it with you camping and travelling as well):

Some of the drugs listed below are prescription items and if your doctor doesn't know you well he might get rather suspicious that you have developed an addiction and are trying to con him into supplying your habit. Explain what you are doing.

SUPPLY	SHELF LIFE (YRS)	WHAT IT IS	PRESCRIPTION?	COST
<i>Achromycin Caps</i>	2-5	ANTIBIOTIC	yes	
<i>Ampicillin</i>	1-5	ANTIBIOTIC	yes	\$10.60 per 100
<i>Aspirin</i>	2-4			
<i>Bacitracin Eye Ointment</i>	2-4	ANTIBIOTIC	yes	\$3.45 per 25 gr.
<i>Benadryl</i>	2-4	ANTIHISTAMINE		\$10.80 per 100
<i>Bronkaid</i>	2-4	ASTHMA RELIEF		
<i>Cepacol Gargle</i>	2-4	SORE THROAT RELIEF		\$3.15
<i>Darvon Compound</i>	5	ANALGESIC	yes	
<i>Di-Gel Liquid</i>	1-2	NAUSEA		\$4.75
<i>Debrox Drops</i>	1			
<i>Dome-Boro Tabs</i>	2-4	SUNBURN OR BURNS		\$3.38 [10 tabs]
<i>Gravol</i>	2-4	CONTROLS VOMITING		\$3.95
<i>Fleet Enema</i>	5			\$3.78 [adult]
<i>Lomotil</i>	5	ANTI-DIARRHETIC		\$6.75 per 100
<i>Marezine Tabs</i>	5	ANTI-NAUSEANT	yes	
<i>Neosporin Ointment</i>	1-2	ANTIBIOTIC	yes	\$2.97 [25 gr.]
<i>Neosynephrine Nose Drops</i>	1-2			
<i>Robitusson Cough Syrup</i>	2-4			\$4.48
<i>Seconal</i>	5	SEDATIVE		\$4.43 per 100
<i>Senakot Granules</i>	1-2	ANTI-CONSTIPATION		\$5.09 [100 gr.]
<i>Sudafed Tabs</i>	5	FOR COLDS		\$3.18 [24 tabs]
<i>Syrup of Ipacec</i>	5			
<i>Triaminic Syrup</i>	1-2			
<i>Tylenol [Extra Strength]</i>	5			
<i>Vaseline</i>	forever			
<i>Amino Acids</i>				\$6.00 per 100
<i>Vitamins</i>				\$7.99 [1 lb.]

SLEEPING:

For sleeping, air, rubber or foam mattresses placed at the junctures of floors and walls (PF factor of 100 to 1,000 while you are sleeping) and three blankets per person will provide for cold winter nights or cool summer nights.

SANITATION:

One of the most under-rated of all modern conveniences is the flush toilet (and toilet paper).

First off, store 24-48 packages of toilet paper. It will last about a year but in a pinch, toilet paper will have the barter equivalent of a Kruggerand in the rebuilding period after emergence.

You know how discomforting it is when you 'rough it' at a provincial park and have to use a pit toilet. Do you want to be that uncomfortable, surly, etc. in a 28-day shelter situation?

A portable toilet for only \$79.99 at Sears (cat. no. 063144019) will allow 22 flushes on just one gallon of water. You'll need deodorizing chemicals as well for an extra \$5 per bottle (buy three).

Your toilet should be in a private spot, far away from food preparation and near your exhaust and ventilation unit.

Always wash hands in this kind of shelter environment as flu and diarrhea must be avoided vigorously.

If infants are in the shelter, this poses a great problem as a child will create 200-400 dirty diapers a month, not to mention a rather foul odor. Washable diapers would be a must and laundry facilities (a tub, detergent, warm water) necessary.

For general hygiene, several bars of soap, laundry detergent, toothpaste, mouthwash, hair shampoo, tampons and deodorant are essential. It will be hard to work co-operatively if anybody reeks, which you certainly will without at least soap and a mouth rinse.



Our objective is to survive without any serious effects from the fallout; but as well it is important to maintain a sense of continuity, normality and comradeship. Sure, these are going to be strange times, but a good collection of games, pre-recorded music cassettes, cards, musical instruments, etc. will go miles in reaffirming the desire to live. It will relieve tension, create laughter and pass time.

In this close quarters environment, relaxation will be essential. Radio stations will eventually be re-broadcasting (and some won't have gone off the air at all) music as well as a large chunk of emergency broadcasts. A radio should be quietly left on at all times unless other music is being played.

Since the remains of the Canadian government will be exercising whatever censorship they can physically enforce, take certain gov't announcements with a cautious grain of salt. **Government advice that it is safe to come out and "get food" or something like that may be their way of securing (press gang-style) labour with or without your consent (it is in the Emergency Planning Order).**

If your fallout meter says things contrary to government claims, believe yours and stay put.

Other items worth having are gas masks (the filter will stop you from ingesting radioactive particles) in case you have to go outside in an emergency (or for waste disposal). Have a raincoat handy for brief outdoor excursions, they are easiest to clean particles from.

LEADERSHIP AND SCHEDULING

Leadership & scheduling in your shelter will be very important. A leader must inspire people to work together harmoniously and impress the group he can make decisions (whether right or wrong).

He must delegate tasks; one person to man the air-pump for 2 hours, then so-and-so the next 2 hours etc. All this should be written down so everyone knows what is expected of them. Another person measures fallout in the shelter, another to cook, another to do laundry, another to provide power, etc.

Develop rules for your shelter, outlining when & under what circumstances people can leave or enter the shelter, how much food and water is to be allotted medicine distribution, enforcing quiet hours (for recreational things like reading, cards, games, etc), and making sure all shelter occupants pitch in equally.

Finally there are special rules on smoking, alcohol, sex, etc. The cardinal rule is to eliminate anything that interferes with the survival goal. Eliminating smoking would keep the air cleaner but a person in a shelter after a total nuclear exchange might *need* a cigarette or two more than ever. In a stress situation, a compromise could be reached and a ration of say, 5 to 7 cigarettes a day for smokers allowed.

Provide a special area of privacy for intimate discussion, sex, grief, fear, etc. where these things can be dealt with without disturbing or alarming others. The lack of privacy can be very dehumanizing in any circumstance, moreso in a close-quarter 28-day survival situation.

Once you have made the rules, stick to them.

The golden rule of shelter organization is "keep them busy". Keep them from getting bored, depressed & defeatist.

BEFORE WE GET TO PART 2

There are two items of extreme importance that you must have in your shelter (aside from food-water) for your emergence into your new world and these are *books* and *weaponry*.

It is important enough to have quantities of reading material in your shelter to pass the time but when you emerge you will have to become an expert in at least a dozen practical subjects, including:

- 1) food foraging, identifying plants & animals
- 2) hunting
- 3) food preparation
- 4) tanning of leather
- 5) food storage (canning, drying, curing)
- 6) alcohol distillation (gas substitution)
- 7) engine repair
- 8) house repair
- 9) gardening & crop production
- 10) fishing
- 11) farming
- 12) electrical generation principles (who knows, you might have to build windmill generators)

You will need as many good reference books packed away as possible.

One thing you will want to do is teach others in your community survival skills & production once you emerge, not out of altruism, but because the sooner your neighbours produce their own food & goods, the more secure they (and you) will be.

They won't be coveting your food, fuel, water, etc. if they know how to produce their own. It also offers you a greater degree of choice in trading commodities if more and more people are involved in the production of food, alcohol, water, milk, etc.

If you are extremely knowledgeable such that you inspire confidence in your immediate neighbours, *you may find yourself the local government.*

That may be good or bad. Good, because you may be able to impart skills, get people busy and deter panic-looting-chaotic behaviour. *Bad* because it will impose a tremendous burden on *your* short term recovery program. It will allow you less time to grow food, repair the vehicle, produce power, etc.

A GUN AND LOTS OF AMMUNITION

A good gun and lots of ammunition is also of paramount importance. Civil defence planners in Canada do not like this one bit, but the **MetroBulletin** is adamant in recommending you have one on hand.

Incredibly, director of regional planning David Francis in Toronto still believed that after a nuclear exchange, taxes would still be collected as normal, pension cheques would still be going out, police would still be walking the beat, water, power and gas would still all be running.

Mr. Francis would not even comment on if he foresaw shortages of anything. *In fact* everything will be scarce or completely unavailable for months after a nuclear catastrophe.

This will be nothing unexpected to those who have read this issue of the **MetroBulletin** and have prepared, but to 99% of the nation it will be a nightmare to end them all. They will simply panic.

In fact, any moderate, bad or worst case scenarios offer no persuasive evidence or assurance that there won't be hundreds or thousands of roaming desperados; hungry, thirsty, burnt and sick (including radiation sickness). They'll be cold, homeless and quite irrational, looting for food or *whatever*. They will be armed and ruthless.

Virtually every doctor, policeman, etc. will be called to areas of greatest needs (areas of blast damage, thermal burns, heavy fallout). The military will be out of the country meeting our NATO commitments. The police today hardly have a handle on local crime. If the 10 likeliest targets in Canada get hit (Canadian gov't estimates), you will have 4,000,000 to 5,000,000 dead, 3,000,000 to 4,000,000 injured.

You will have *all* food transportation halted for 15 days *in summer, 60 days in winter!* (you think food from Florida is going to make it here?)

Clean drinking water to over 2,000,000 survivors around Toronto and Montreal will be unavailable, up to 4,000,000 homeless and freezing (if winter), possibly no electricity, natural gas, the danger of blistering sunburns during mid-day, *and most ominous of all*, you'll have millions and millions of American refugees streaming in at border points across most of the U.S.-Canada border. Since they'll have guns, they'll be forcing themselves at gunpoint, dispensing with the formalities of immigration inspection. They'll be *looking* for food, water, shelter.

And civil defence planners want us to believe that *you*, protecting your family, food & shelter, in a total social collapse, won't need protection? *Jeezus!*

Worse, *you* could be a target of these desperate people, because if it is winter, the smoke from your woodstove will be readily visible, indicating to anyone desperate enough to notice *you* are warm-- *they* are not. And if you're warm, you probably planned other things too. *You had better planned on an excellent automatic rifle.*

Never buy that crap you are *morally* obligated to share or help others. Yes, you should help them, *but never* at the expense of *your* health, your survival or that of your family. Once you take someone in, you'll have to continue to feed them, give them water, etc. *and you just won't be able to afford it unless water is still running in the taps.*



A bit of an editorial here. Canadians recoil at the thought of gun ownership, but this is simply smugness. Canadians have been secure from invasion throughout the entire history of the nation. It is the only group *in the world* that hasn't been invaded, looted, massacred or taken over. Virtually every European country has, every Asian nation has, every African nation. Even the U.S. was invaded and damaged in 1776-1783, 1812-1814, and 1861 -1865. Only Australia and Canada haven't, but Australia was bombed in the Second World War.

Have we earned this unprecedented freedom from violence? Certainly not.

We have the outstanding good fortune to be established with the British civil & legal tradition, protected by American military strength and our geographical isolation that makes invasion difficult and untenable. *It's certainly not anything we've done as people!*

In a nation like ours, with unbroken civil order as we have come to take for granted, guns seem pretty irrelevant.

But that will not always be the case. If you think nuclear war is even remotely possible, then our civil order will disappear.

Massacres do not take place against a well-protected & armed populace. Read any history and you'll see that the most havoc was wrought upon unarmed or dispassionate peoples (the 'it can't be possible' or 'the enemy could never be that bad' crowd).

Canadians have never had to defend the concept of private property, family survival, etc. in a time of major civil disaster. In the post-nuclear world, the old rules won't apply (ethics and morals are *always* relevant, but circumstances of enforcing your moral claim to your property and right to live will certainly change.)

The kind of weaponry available in Canada is quite limited, and the most recommended models from the book **Life After Doomsday** (the Heckler & Kock HK91 heavy assault rifle and the ArmaLite AR-180 light assault rifle) are illegal in this country.

For a Canadian equivalent that you can buy locally, you'll have to scale down your firepower. The MINI-14 semi-automatic is an all-purpose rifle very useful for self-defence, survival game hunting, etc. It retails for \$400 - \$500. Twenty rounds of ammunition is \$6.95.

A heavier calibre model is the navy surplus 762-NATO (the FN) semi-automatic rifle, available for around \$500.

You will be required to register your gun ownership and fill out some forms. It is very important to say you wish to use it for hunting or, incredibly, that *you won't use it at all [you're a collector or something]*.

If you put down 'self-defence' in civil emergency, the police regard this as a potentially dangerous use and could refuse your right to own a weapon. If you keep trying however (barring any criminal convictions), your application will be approved.

Once you buy a gun, get supervised training from a skilled and qualified instructor. An unskilled person with a gun is more of a menace to himself than he'll ever be as a protective factor. The Crumlin Sportsmens' Club on Gore Road has rifle ranges and handgun training.

EMERGING INTO YOUR NEW WORLD

At the end of one month, the fallout factor outside will not be serious, probably .07 - .03 REM per hour at 100 miles downrange of a serious surface burst.

Even so, it is advisable to be outdoors only 3 hours a day in the first two post-shelter weeks, then maybe 6 hours outdoors the next week, 9 hours a day the next week, etc.

This means the total dose from day 29 to day 60 will be an extra 6 REM on top of that absorbed in your shelter. This is acceptable if you accumulated less than 175 REM in your first 28 days (if you followed our advice, you absorbed much less than that).

In successive months, normal outside exposure will cause you to absorb 2 REM in days 60 - 90, and less each following month.

There are however, additional hazards that must be avoided.

Although it is most dangerous to your thyroid gland in the first 8 days and moderately dangerous from day 8 to day 60, radioiodine (Iodine-131) in water must be rendered inactive if you are going to drink from streams, rainwater or even taps (if they are running, you can't be sure that the reservoirs have eliminated the radioiodine yet).

This is where a charcoal filter is handy (or a bucket of earth) to filter particles out of found water. Then drop an iodine or potassium iodide tablet in the water.

Iodine renders iodine-131 harmless to your thyroid, as well as clearing out any other micro-organisms (potassium iodide neutralizes the radioiodine, a different process but equally effective). A kit called the WaterPik Portable Instapure (model PI-1) costs \$3 which will cleanse several quarts of water (see appendix for address).

After two months iodine-131 is not a problem because it has decayed to ineffectuality.

Strontium-90 is a dangerous radioactive element that is a decay by-product of fallout also. Its danger is that it is absorbed in the digestive system (from breathing particles in or eating contaminated water-food).

Since it will fall to the surface in fallout, shallow rooted plants will absorb some of it. When an animal eats the plants (or you do), the strontium is absorbed in the body and deposited mainly in the bones. The bones produce your blood, and the destructive effect of too much strontium will induce damage. It isn't really the strontium that does the damage, because strontium-90 decays slowly, releasing low energy beta radiation, which does little damage. Unfortunately, the decay product is Yttrium-90 which decays immediately and produces high energy beta radiation.

If enough strontium-90 is deposited (major fallout areas), bone cancer, leukemia, anemia will increase over the next 20 years.

This will produce an incidence rate about twice the normal rate of these cancers and blood sicknesses; high, but not substantially large compared with other tribulations one will have to overcome. It will kill those who unwittingly consume large quantities of it. (You will, we trust, not be one of them).

Any area that you intend to plant food should be stripped of the top 3 inches of soil and deposited in your own nuclear fallout storage dump.

Do not camp out or sleep near the ground for several months or even a few years, as strontium-90 is most dangerous at ground level.

Cesium-137 is another radioactive element of fallout but it tends to stay in the soil and not get absorbed by plants.

It enters an animal's body by being on the plant surface when an animal eats it (those animals who survived the initial weeks of fallout). Humans can avoid this by thoroughly washing all plants.

Cesium-137 concentrates in meat and not the bone and therefore eating the meat of such animals is hazardous. Cesium-137 ceases to be a life (organ) threatening element after 13 - 16 months.

At this point, plant vegetation and animal life may well be inedible for a year to 18 months. So you have to ask yourself, *should I stay or should I go?*

If you can manage at your retreat for about 1 year without needing local plant & animal life, then stay. At least you have a home-shelter, you know the area and you have a number of material provisions. By leaving (to where?), you can probably find some fallout free areas, but so will millions of other refugees.

Much of what is known about internal radiation incidentally, comes from the studies of radium wristwatch dial painters who used to lick their brushes to keep them pointed. They unknowingly swallowed enormous quantities of radium (acts as a 'bone seeker' like strontium-90). Most of these people were still around decades later. They had serious bone damage, but they hadn't been wiped out either.

With much less ingestion, you certainly won't either.

IT'S AN ECOLOGICAL NIGHTMARE...

How else will your environment be different?

The over-all temperature of southwestern Ontario will drop by 3 degrees Fahrenheit for about 5 years, shortening the growing season by ten days on average. Very few years are the average however, so possibly it won't be noticed.

Ten fewer frost-free days in the growing season could inhibit the success of crop production in this area. It will be particularly dicey for the prairie wheat farmers.

The ozone-layer which shields us from harmful ultra-violet (UV) rays will be severely impaired for about three years, moderately impaired for 2 and lightly impaired for 25 years. What will that mean to you?

In areas without serious fallout, no damage will result from delayed fallout, but the temperature change and the ozone depletion (by anywhere between 30% - 70% for the first 3 years) will intensify the harsh qualities of the ultra-violet rays from the sun and this will have serious effects on plant life and crop production.

If the UV effects are worldwide (and we suspect they will be), it could mean the extinction of a number of sensitive plants, although greenhouses can be made impervious to these effects, so we will have to hope some Australians, New Zealanders, Southwestern Ontarians will think of planting some in their greenhouses. The chart below indicates which are most sensitive to destruction by the harsh UV rays expected if the ozone layer is depleted 30 - 70%.

EXTREMELY SENSITIVE

Peas
Tomatoes
Beans
Pumpkin
Onion
Endive
Watermelon
Cucumber
Turnip
Beets
Spinach
Lettuce
Eggplant
Potato
Cabbage

MODERATELY SENSITIVE

Cantaloupe
Cauliflower
Collards
Parsnip
Radish
Chicory
Carrots

RESISTANT

Wheat
Corn
Rye
Soybeans
Barley
Alfalfa

.. time to learn gardening!

This has severe Canadian and worldwide implications if the first or second year crops fail.

Crops in the 3 or 4 post-catastrophe period will be predominantly corn, soybeans, wheat, barley, alfalfa because they are highly resistant to UV rays. The more delicate 'flavour' plants will perish without greenhouse protection, so don't expect tomatoes, peas and onions on the market for 15 to 20 years if ever.

Animals that survive direct fallout will not have much trouble dealing with delayed fallout or UV rays as most animals are nocturnal food hunters or can be. The deaths from cesium-137 and strontium-90 etc. will only be in areas of high fallout.

However, if ozone depletion causes UV rays to kill off sensitive plant species (as is likely), wildlife such as squirrels could be wiped out, with implications all the way up the food chain.

It will take about 5 years before things become more favourable viz. the growing season and the ozone layer, and, in search of food, man will become more nomadic. This could prove a tight squeeze for some species of plants, animals and in some extreme cases - humans.

Birds are helpless at night and will suffer severe depopulation. Bears that search for food in winter will die of starvation and snowblindness.

Domestic animals (cows, pigs, etc.) in areas not affected by fallout who will be guided by humans will suffer no significant problems.

Some people will die from this new environment, but only because they won't know what is happening and why. Humans, once informed, can take action to prevent these hazards. (If you don't heed these words, don't blame us).

...IF YOU'RE NOT AWAKE!

The 'On The Beach', 'Fate of the Earth', 'If You Love This Planet' hysteria of total annihilation of the whole human race is nonsense. Only those who don't understand what is happening will suffer.

The delayed fallout, the dust in the atmosphere that takes weeks, months, and years to settle down to earth, will have the effect of adding 10 REMs of radiation over a thirty year period, not enough to make any difference to really anyone except those severely irradiated initially.

We have shown you how to survive a thermo-nuclear war by sheltering in s.w. Ontario (although much of the American mid-west and mid-east, western Europe, East Germany, much of the Soviet Union will be completely uninhabitable for 5 - 10 years), but areas without nuclear conflict, like Australia, will get only one tenth of one REM in a year (delayed fallout).

Skin cancer will increase by 10% - 50% for forty years after the war but this is not significant on the whole; for every 100 people who would invariably get skin cancer anyway, 110 to 150 will get it after the war.

And this assumes that people will be spending time basking in the sun, which they absolutely won't (as we will show). And the skin cancer problem will only be a problem for 3 to 5 years after 'the war'.

The economic consequences in southwestern Ontario have been discussed in this section and others, and you will see an end to civilization and commerce as we know it. Trading will be far more localized, and initially, far more agricultural.

But within 5 years, many industries will be back at full steam, and all technology will be preserved (the knowledge exists if only one of us survives, and knowledge is technology).

North America is the breadbasket to the world and we will have trouble providing for the 20,000,000 Canadians still alive. We won't be much help to the starving millions in the U.S., or especially the starving tens of millions in Africa, the U.S.S.R., China, western Europe who now depend on us for their survival.

In the first three years alone, 250,000,000 will die worldwide from famine (two hundred and fifty million!). 300,000,000 will probably die in a full-scale nuclear war, with about 100,000,000 injured or homeless.

You can expect Africa, the U.S., the Soviet Union, and western Europe to be thoroughly depopulated.

Southwestern Ontario will have food crises too, and it is possible famine will be here and we might lose 10 - 30% of the population that survived the 'war'. If you've prepared you won't be amongst the statistics.

The political apparatus of the U.S. government and western Europe will be destroyed. The Communist Party in the U.S.S.R. will have a better time of it because there are 300,000 party members, many of whom will survive. Ethnic rebellions, depletion of their military, famines, devastation will

make rebuilding painful in any case.

All paper currencies will be useless (banks and their assets won't exist), all trade will be barter.

But we will not be thrown into savagery or a pre-industrial society because books will allow us to quickly overcome the deficiencies of the post-catastrophe period. Knowledge, talent & experience will be in plentiful supply.

A fabulous quantity of abandoned vehicles, machines, tools, engineering will exist; properties of those now dead now taken by those alive to use or trade them. Road systems, once cleared of minor debris, will offer excellent networks of transport between areas not hit directly.

Humans have rebuilt cities, nations, civilizations up from the rubble and they will do it again.

You just have to make sure you're prepared to be there to enjoy it.

PLANNING FOR YOUR NEW WORLD

Planning survival for the post-shelter period also must be done now.

What you need is a year-long basic food supply that will provide you with basic nutrients, keep you full, can be stored and is cheap. This is because, as we have mentioned, when you emerge from shelter, food availability just can't be guaranteed.

One fundamental food storage plan (the Mormons currently advocate it for their 'end of the world' preparations) is only 4 items: wheat, powdered milk, honey & salt.

Simple, cheap, almost everlasting shelf life.

A family of 4 for one year would require:

WHEAT	1,000 pounds	\$200
POWDERED MILK	250 pounds	\$800
SUGAR or HONEY	240 pounds	\$360
SALT	25 pounds	\$15

Total cost \$1375

The wheat should be stored in large airtight trash barrels, and can be bought in 100 pound bags at the ARVA Flour Mill. The honey can also be bought at a local apiary.

Since wheat (and its by-product, flour) would be central to everything, it is a boring diet. But this is designed to prevent starvation and malnutrition. You can add whatever you are *able* to come up with. Wheat can be served up in many ways that are not dull, but this will mean a few cookbooks in your shelter library.

The basic Four contain pretty well everything except some vitamins and amino acids, these supplements you should have on hand.

Other supplements or alternatives are dried fruit, meat, and vegetables, etc. Dried items have a long shelf life but they are so expensive. One year's supply for 4 people would be \$4,500.

You'll need to plant crops, even if you've never grown so much as a weed in your life before.

Once you've stripped off the top 2 to 3 inches of soil to rid the area of fallout particles, you'll be trying to grow hardy corn, or wheat, or soybean crops.

Seeds cost \$20 an acre (corn), \$15.30 an acre (barley), \$16 an acre (wheat). Those prices are today's. If you try to buy seeds after the catastrophe, they'll be 100 times that price.

Rain from the sky will contain delayed fallout, but this will not contaminate your crops to any worrisome degree unless your area received heavy fallout initially.

Your daily habits after emergence will centre on work from 6 a.m. to 10 a.m. outside, then inside work from 10 a.m. to 3 p.m., then outside again to work from 3 p.m. to sundown.

The ozone depletion and the UV rays will be so intense from 10 to 3 that exposed skin will get *blistering sunburn* after only 10 minutes exposure to skin. (And will you have sunscreen lotion or sunburn treatment? I doubt it.)

Between 10 to 3 we will all look like Arabs, all skin completely covered with white cloth (deflecting sun best) with sunglasses, *particularly* in winter.

Hydroponics will be a popular (and life-saving) method of indoor plant growth in the post-catastrophe period because both insects and sunlight can be controlled.

Once food is harvested, you'll need to learn canning and containerization to preserve all you've grown.

Identify edible, non-edible and poisonous plants, combined with what you know about fallout decay by-products.

Growing corn might be important for another reason other than consumption -distilling alcohol. Almost any car, though not diesel engines, will run well on alcohol with a slight adjustment to your carburetor. It may be a while before you see Petro-Can trucks hauling fresh supplies to your neighbourhood. Distillation methods are available in a number of reference books.

IT MAY BE A WHILE BEFORE YOU SEE PETRO-CAN TRUCKS HAULING IN FRESH SUPPLIES

Electrical power may be restored in 10 days if some dams and stations remain intact, but likely it will be 60 to 90 days, or possibly much longer. Who knows? And what will you pay for it with? In fact, paying for any utilities will be difficult. If the Canadian gov't has been destroyed, paper money will have little value.

Other questions abound such as 'Who now owns these dams?' Who pays the employees? With what? It will be interesting to see all that sorted out.

But not all oil fields will be damaged, much natural gas pipelines and wells will be intact, and many hydro-electric wires will be fine. It'll be a rough adjustment, but technology *will* return.

Insects are going to be a problem, no doubt about it.

Much of the insect world will survive fallout and they will cause much damage to crops in the first couple of years. They are also resistant to UV rays. Many of their traditional predators will be severely depleted (birds) but many won't (frogs, fish).

However, goodly quantities of nasty chemicals like SEVIN, DDT, etc. will still abound and these can and will be manufactured in quantity as food production will be the greatest priority on the planet. Most of these chemicals are now in rural areas and there will be no blast damage there. Supplies of pesticides should not be low during the needed period.

Many factories will still be completely intact and manufacturing within 2 weeks. Many towns with less than 25,000 people have one or more large manufacturers and many smaller ones. And although we have assumed larger centres like London will be hit directly, it is not a foregone conclusion. Employees on industries still operating (for that matter, the shippers, retailers, etc. will be paid...) in barterable products of manufacture if gov't money was indisposable.

A big problem will be medical supplies. These will be stretched to the limit and virtually unobtainable in quantity for up to ten years. It would be 20 years before the shelf quantity of medicines ~~is restored~~ is restored.

Trained doctors and nurses will be far fewer. Medical schools will be largely in ruins as these are in major centres. Skilled medical help will be very scarce for ten years.

To avert panic, you and your neighbours, in this period, will get together to establish a voluntary council to set up a barter exchange, a code of law and mutually agreed enforcement. You'll be restructuring your own local economy and social structure. Your old government may not exist.



THINGS THAT COULD BE MORE TROUBLE

A nuclear war could be a 3 or 4 day flurry of death dealing missiles and then the aftermath. Or it could be a protracted war where each side launches missiles selectively and intermittently, never wanting to be without sufficient back-up (this is not such a likely scenario though). If this were to happen, you would have to be *even* sharper and better prepared.

Conceivably, if famine in the U.S. is bad enough, they (or what's left of 'they') might invade Canada to loot our grain supply to feed their people and military. This is why we should still trade with *both* the U.S. and Soviet Union without sacrificing ourselves so they don't feel inclined to militarily help themselves. We will be too vulnerable.

Another problem will be millions of American refugees that would flood into Canada fleeing terrible fallout in the central and eastern parts of the country.

Don't Procrastinate! Start Today!

In planning your 'retreat', think about it carefully, but don't procrastinate. Do a bit each weekend until after 6 months, without any real effort, you've established a survival shelter, properly stocked in a 'safe' zone.

Good luck.

IS LONDON A TARGET?

By any standard description of strategic priorities in war, London, despite its size, would not be a primary or secondary target.

Primary targets are military installations, air force and naval bases, commercial air strips, major ports, major weapons production centres, major government centres, hydro and natural gas generators.

Secondary targets are heavy industrial basins that produce significant quantities of manufactured goods.

At first look, London is certainly not an industrial centre, the military presence is skeletal, the only military-industrial item of note is the tank manufacturing at GM, our airstrip is too small for military transport, and London isn't an atomic, hydro and natural gas producer.

The government of Canada also does not regard London as in the top ten likeliest targets (see Part 6 'What Your Government is Doing -Nothing!')

The only strategic justification for one small (1 to 10 kiloton) nuclear weapon would be the area bounded by 3M, GM, the airport, the military depot on Highbury between Oxford and Dundas, and Wollesley Barracks.

Russian ICBM weapons at that low range don't exist however, although a submarine could launch a 200 kiloton warhead (still severe devastation). It seems likely that such missiles would be directed at the 3,000 more strategic sites in North America.

While the myth that every city of 25,000 population is going to be hit is not necessarily true, it does depend on what's there.

Though London is unlikely to be a primary or secondary target, with 8,000 to 10,000 Soviet warheads aimed at North America, London as a victim in a total war is likely, although it could be 1 - 7 days after initial attacks on primary targets.

The motives of the Soviet war strategists are not known, and circumstances depend much on the type of escalation preceding nuclear weapons involvement.

It is possible that the Soviets, upon launching a successful first strike and have, say, an 8,000 to 2,000 warhead advantage after sending over 2,000 warheads to destroy 80% of the U.S. ICBM & SAC Bomber bases & submarine ports; it is possible they could demand the surrender of North America or they will send over, one by one, the rest of the 8,000 missiles. That's not so far-fetched. It is, after all, what the Americans did to the Japanese to end World War 2.

Those 8,000 warheads could kill an additional 140,000,000 people in North America. Pressure to capitulate under such a disadvantage are tremendous. It is, however, impossible to say whether the U.S. gov't (what's left) would give in to such an ultimatum.

Alternately, each side could be launching nuclear

weapons at each other for days, weeks, or months afterward, one missile avenging the next. Who knows? *You* don't, so you can never assume London is not a target.

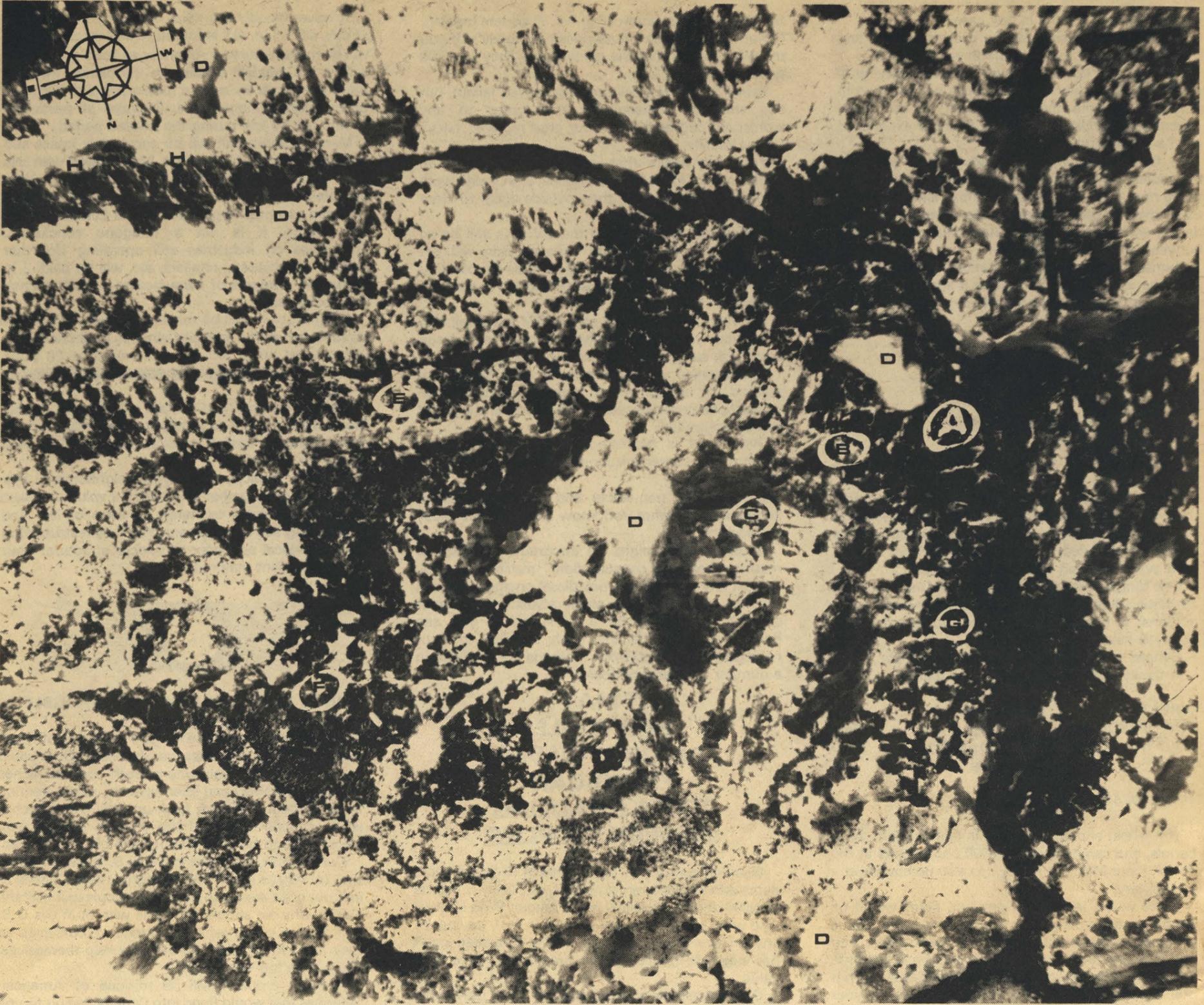
Russian military material describes the nuclear exchange as the 'nuclear battle', not a nuclear war, and it is certain that invasion of western territories (western Europe, Alaska, etc.) will follow if a *substantial* advantage is gained.

That argument is often countered with one that determines the Russians have a vested interest in preserving the prairies of Canada and southern Ontario (farm producing areas anyway) because the Soviets would suffer severe famine without it, as the Ukraine (the Soviet breadbasket) would be heavily contaminated with fallout. Today the Soviets must import massive amounts of grain to stave off starvation.

Between Canada and Australia, those two countries will be the only large scale producers of grain in the post-nuclear world. Eventually, that will be the priority of the nuclear battle, *get food*.

So while London might not be annihilated, we might have to surrender all (or 80%) of all food produced or they *will* annihilate us (and then use the land themselves, except then -and they know this - it wouldn't produce nearly as much food).

Not a pretty picture.



LONDON DEVASTATED AFTER ONE MEGATON BOMB

The above photograph is London one day after a 1 megaton detonation at approx. 5,100 feet above the Middlesex County courthouse.

This photograph will be taken at about 2,000 feet, looking south at 6 p.m. The initial one mile radius shows a high ridge of debris (15 to 40 feet), possibly the result of blast pressure smashing down on ground zero at almost a 180 degree angle.

Where the Court House was is indicated by A, City Hall - B, Central Avenue just north of Victoria Park is faintly visible - C, a number of exploding chemicals were causing fires and explosions even the next day, indicated by high rising smoke (D).

Adelaide St. can be seen, though totally blocked by several feet of rubble at

most points (E), and the intersection of Oxford & Adelaide (F) is distinguishable.

Heavy debris from the collapsed bridge at Oxford St. and the Thames is barely visible (G), and an earth slide has given the river a muddy, debris filled appearance at the Thames intersection of Adelaide (near GSW plant). H

Most of the surface has a white, bleached look because of the layer of heavy dust that settled over everything, and the only items not sucked up the blast winds were bricks, concrete, etc. The thousands of black pock marks are buildings that have been gutted with debris.

This aerial view covers the downtown east to Quebec, old South to as north as Huron St.

What can you do to help Avert War and Ecological Disaster?

1. *Support* anti-ballistic particle beam research and deployment. These would be satellites in space that would direct high intensity light rays (like thermal flash, only concentrated further and very specific) at missiles as they are launched or are ready to be launched. This beam would destroy the guidance systems or fuel systems and the warhead would remain undetonated.

This program should be vigorously supported as it is a truly defensive weapon that offers legitimate security.

A successful series of tests was just conducted in late July where lasers knocked out 6 in-flight Sidewinder missiles moving at over 2,000 miles per hour. ICBMs move at 12,000 miles per hour, so more testing will have to go on before it is successfully used against ICBMs. The best hope is that a neutral nation will put one of these satellites into space and knock out *any* missile launched of *any* nation.

2. *Never* let the Soviets have any kind of edge in warheads. The greater the gap, the more likely the Soviets will emerge with a blackmailable advantage. The greater the gap, the more confident the Soviets can be of a 'winnable war'.

Don't be convinced by arguments that the Soviets don't want their own people killed so 'of course they'd never contemplate a nuclear war' where millions of their own people will die.

The Soviets have massacred their own people from day one of the Revolution and will continue to sacrifice humans for political advantage, in *any* quantity necessary. The death toll so far is 30 - 35 million since 1917 (mass executions have taken 10 million, enforced famines approx. 15 million, genocidal incursions 4 million; concentration camps: 2 million, among others).

Leaders of the Soviet Union have always put politics and communist ideology above people, *otherwise they would be a free, capitalist nation with some semblance of individual freedom.*

3. *Oppose* any land-based missile program which invites Soviet responses on the continent of North America and Europe, causing fallout. ICBM silos are such sitting duck targets, it encourages the concept of a winnable first strike. If all missiles were in Poseidon & Trident submarines, they could never be detected and could never be destroyed to obtain a decisive upper hand. This would go far in eliminating 'winnable war' scenarios.

With undetectable submarines, massive 'launch on warning' is unnecessary because there is little risk of one side's weapons being destroyed by sneak attack. It reduces drastically a total nuclear exchange possibility.

4. *Oppose* the Cruise missile, *support* the Neutron bomb missile. The Cruise uses hydrogen-

fission warheads; the Neutron is a smaller, *sub-kiloton* weapon and produces no fallout. It is a tactical weapon designed for tank group attack. Hysteria against the neutron bomb ('destroys people, leaves buildings intact' was the common denouncement). The Cruise is far larger, more devastating and produces great fallout for the targets in Europe and the Soviet Union. We have a self-interest in making sure that, even *after* a war, the Soviets can still grow their own food *so they won't invade Canada to take ours*. If that happens, we'll have 'lost' the war for sure.

5. *Support* any civil defence activity that informs people about fallout, fallout protection & survival preparation.

6. *Support* improved guidance systems. The next batch of Minutemen missiles are expected to drop a warhead within 30 feet of a Soviet silo. If this can be done, sub-kiloton weapons or even conventional weapons could do the job of destroying silos, other missiles, etc. with drastically less or no fallout.

The idea is to support any rational ideas that allow post-war ecological & human survival, while minimizing the temptation of either side to perceive a first strike as a 'winnable war' option.

CIVIL DEFENCE

Our government is well aware of the danger of nuclear war and fallout to Canadians; in fact, the Civil Defence document EPC 2-81 (Planning Guidance in Relation to a Nuclear Attack on North America in the '80's), lists ten cities in Canada most likely to get hit in an all-out nuclear exchange that could incur four million Canadian deaths, four million additional injuries (and those same four million injured also homeless) from one-megaton bursts on their cities.

In view of this, you'd think your government would have extensive civil defense preparations, right? Or

at the very least, a pamphlet of shelter-survival in non-strategic areas would be sent by mail to all Canadians. Right?

No---nothing but some fallout shelter blueprints that haven't been updated or reprinted in fifteen years!

Here are the likeliest Canadian targets according to Emergency Planning Canada; the casualty figures are supplied by us from the information supplied in **We're Hit**.

TARGET	TYPE OF DETONATION	WARHEADS USED [no. of one-megaton weapons]	DEAD-INJURED [based on fewest bombs expected]
Halifax	surface burst	1	65,000 - 60,000
Saint John	surface burst	1	45,000 - 50,000
Montreal	air bursts	2-5	900,000 - 700,000
Ottawa	air bursts	1-2	100,000 - 100,000
Toronto	air bursts	2-5	700,000 - 500,000
Windsor	air bursts	1	80,000 - 50,000
North Bay	surface bursts	1-2	40,000 - 20,000
Winnipeg	air bursts	1-2	300,000 - 150,000
Edmonton	air burst	1	90,000 - 90,000
Vancouver & Victoria	air and surface bursts	2-3	1,000,000 - 500,000

Those places of high population that the government expects would receive serious fallout are:

Winnipeg	30% probability of fallout	greater than 2,000 REMs
Brandon	30% probability of fallout	greater than 2,000 REMs
Regina	15% probability of fallout	greater than 2,000 REMs
Saskatoon	8% probability of fallout	500 - 2,000 REMs
Edmonton	2% probability of fallout	500 - 2,000 REMs
Calgary	1% probability of fallout	greater than 2,000 REMs
Windsor	10% probability of fallout	200 - 500 REMs

What is Your Government Doing? **NOTHING!**

Quite frankly, the government information is quite at variance with some of the latest scientific studies on fallout and is limited in considering fallout to Canadian cities from American sources, but not Canadian fallout from Canadian targets (like the Bruce Nuclear reactor, North Bay, Vancouver, etc.). Yet, with all this potential disaster, you'd think the Canadian government would have some big civil defence program.

Or you'd be very wrong.

Civil Defence in this country doesn't exist!

You are completely on your own.

We asked Regional Director of Emergency Planning Canada, David Francis, during a 'briefing' in Toronto, repeatedly for some details of *any* program the Canadian government would employ in any nuclear danger. He said he doesn't really have any specific plan of action, and that much of the details were the responsibility of other departments and were 'classified' anyway!

Mr. Francis said the War Measures Act would probably be declared giving the Cabinet absolute powers (see Emergency Planning Order) to direct all facets of the social fabric in the event of an 'emergency'.

Mr. Francis said that the government would require thirty days advance 'notice' in order to prepare an effective civil defence response. He didn't have any idea what that response might be, which is odd considering that he is emergency planning director for Ontario. And the citizens need to be informed of dangers *now*, not at the point of an emergency (when it will do little good).

In other words, the Cabinet would have to recognize a 'serious' deterioration in international relations thirty days prior to an anticipated nuclear exchange. This might be possible under ideal circumstances, but three to ten days visible warning in world relations is more likely, especially since government will be the *last* to concede that things are deteriorating to the point where a civil emergency exists (they don't want to 'panic' us). Remember this is the same Cabinet that brought you the MacEachen budget, the post office and this bare-bones civil defence program in the first place. They don't take civil defence seriously and they have no detailed plans to protect any of us at this time.

The most valuable service the government could provide for the Canadian citizen would be an up-to-date comprehensive booklet giving details on what gamma rays are, where fallout will fall, how to build a shelter, what areas are safe, what to provide, etc.

David Francis says this would cost a great deal and 'the Canadian public is just not concerned with nuclear dangers; they are more interested in tornados taking off their roofs or flooding in their neighbourhood. They wouldn't want to pay for civil defence preparations. They just don't care.'

Instead, and only if you ask for them (it's rare that anyone is going up to the ninth floor of a Toronto office tower to ask for fallout information), you can get pamphlets (3) the government has available on 'protection' against nuclear war.

One is called **Your Basement Fallout Shelter**, with a forward by Prime Minister John Diefenbaker, and printed in 1961!

The information is largely accurate and contains a good blueprint for making a convenient basement shelter against fallout. Considering how little attention government pays to civil defence, it's no wonder these are left over from 1961. It's a good little book, although limited to the one subject, and could be updated with a fallout map and many more preventative measures could be incorporated. It also doesn't alert people to the dangers of fallout decay by-products that require special knowledge.

An updated version of this should be sent out to all Canadians with an explanative text pointing out why such information is essential and should be used.

In 1961-1963, the governments of the U.S. and Canada found that civil defence heightened fears about nuclear war in the public, which is normal but *politically* undesirable. The Civil Defence Program invited political opposition (to nuclear weapons) to be directed at the government. In a very real sense, this contributed to the loss of power by the Diefenbaker government in 1962-1963. The Liberals recognized in those years an issue that was politically treacherous without any political benefits, and dropped the promotion of civil defence, particularly when the Cuban Missile Crisis became a faded memory.

Anti-civil defence critics pointed to Viet-Nam as evidence that full scale wars could be waged without nuclear weapon dangers and thus a civil defence program was unnecessary.

Civil defence in recent years has been associated by its detractors as a component of a 'winnable war' strategy. Anti-nukes love to promote the complete mythology that all mankind will be wiped out in a total nuclear exchange and therefore civil defence is hopeless and its mere mention is like preparing for war.

The opposite is the case.

Unfortunately, the innocent Canadian is held ransom by the apathy of government and the hysterical inaccuracy promoted by the anti-nuclear appeasers. And worse, Civil Defence spokesman David Francis showed himself to be incompetent, ambivalent, uninformed, or at best, reluctant to state that his department was prepared to do anything in case of a nuclear emergency.

And American counterparts in Civil Defence are most famous for their remark that in order to protect yourself against fallout, all you need to do is 'cover yourself with three feet of dirt, it's the dirt that does it.'

David Francis and I discussed many of the government assumptions in the literature he provided me. I immediately disputed the government's fallout predictions; using definitive studies printed in **Scientific American**, **Life After Doomsday**, **Effects of Nuclear Weapons**, **Survive** magazine, all generally uniform in *their* agreement but significantly different from the Canadian government map.

Worse, Mr. Francis could not recollect ever seeing or reading any of the material I had, particularly the November 1976 **Scientific American** article by Sidney Drell, which is a classic on the subject. Indeed, Mr. Francis had not read much about the problem at all. What the hell does he do with his time? (He had nothing else to do in the time I was there; his desk was completely empty and there were no reference books in his office except for one map and that's it.)

'YOU'RE ADVOCATING ANARCHY!'

He said, and I kid you not, 'You're a bright young man. You could make quite a contribution to the military on this. You're better informed than I am.'

Now isn't *that* reassuring!

Mr. Francis said that Canada's 83,000 Canadian forces would be overseas meeting their NATO commitments, leaving the local police, O.P.P., Q.P.P., and R.C.M.P. (that are still alive) to handle up to eight million casualties and fatalities, supervise refugees, maintain law and order, keep roads clear, etc. He said it might be difficult but he didn't expect any drastic change in the social fabric.

I said bluntly that *that* was an absolute fantasy. The complete social-economic fabric would be destroyed on a national scale (localities on their own might be alright). I asked who will pay these police? With what? Where will the money come from? (No taxes would be collected.) Most banks won't exist. How will you handle millions of refugees from the U.S.? Doctors, medical supplies...

Complete lack of government services had to be envisioned, I said, and I told him we were recommending that a retreater own a weapon in order to protect his home, food, and home-made energy against desperate people (of which there could be millions).

Incredibly, he said: 'Saying that (buying a gun) is irresponsible. We can't have gun nuts taking the law into their own hands. *You're advocating anarchy!*'

My response: 'Me?! I'm advocating anarchy? In a small town, there won't be a cop for miles, food and gasoline non-existent, medical supplies all taken to the city, fallout coming down. You don't believe that millions of homeless, sick, and injured people plus millions of American refugees won't be desperate?!--that they won't steal or do anything to stay alive when there are no police around?!

Francis: 'Well, I don't know about all that. I'm a gun owner but I don't believe in taking the law into your own hands.'

Me: 'Then you'll die. People who haven't prepared, who are exposed to fallout, have no uncontaminated food or water, with all gas, electricity, heat and light out, are certainly going to be looking for places that are going to provide *life*, and you'll have to defend your food and shelter or it will get taken from you. Can't you see that?'

Francis: 'I think telling people to buy a gun is irresponsible.'

Me: 'What scenarios do *you* see after a nuclear exchange? What about refugees, food shortages, civil disorder, etc.?'

Francis: 'We haven't considered any scenarios dealing with the aftermath.'

Me: 'What??!!'

Francis: 'Well, we haven't.'

'Crisis relocation', that is, mass evacuations to the countryside, are not part of the Canadian 'civil defence' program. This is good, because that would only impair the ability of the people forced to accommodate refugees to survive. If *you're* not prepared to survive, we don't feel someone *else's* survival chances should be jeopardized feeding, keeping, and sheltering others.

Besides that, it's plainly impossible to evacuate the eight million people in the ten likeliest targets; where would you get transportation, accommodation, food, etc.?'

'Individual evacuation to planned spots, like a two week stay to Aunt Tilly's place in the country is encouraged however,' the regional director added.

Canadian Intelligence has never definitely been able to determine if any Canadian sites are targets, so the ones the Canadian government prints is a hypothesis based on perceptions of Soviet strategy, Francis said.

The government report says fallout from surface bursts on Minutemen silos could hit London and be considerable; we feel it is an unlikely possibility but possible in February to May.

The biggest irony of our discussion was on the Emergency Planning Order. I asked, 'Is it really necessary to institute a totalitarian state to protect our 'freedoms'? It seems that in order to protect our freedoms, we have to give up our freedoms.'

Mr. Francis responded, 'Of course.'

Me: 'What do you mean, *of course?*'

Mr. Francis: 'Well, of course.'

Me: 'Well, why not surrender in advance to the Russians and save all the bloodshed if the result in either case is the same?'

Mr. Francis: 'Would you recommend that?'

Me: 'No, but complete martial law is not a future I'm prepared to die fighting for, Canadian or Russian.' (I would fight *against* it, Russian or Canadian.)

We reprint at right some of the interesting parts of the Emergency Planning Order:

Minister of
Agriculture

National Emergency Agency
for Food

1. Control and regulate
 - (a) farm production, including the provision of advice and guidance to farmers in respect of the protection of farms, crops and livestock;
 - (b) the processing of foodstuffs, other than fishery products, and the quality and wholesomeness thereof;
 - (c) the suppression of animal and plant diseases and infestations;
 - (d) the bulk storage, allocation and distribution of foodstuffs including fishery products;
 - (e) the development of an overall food distribution plan;
 - (f) food rationing; and
 - (g) the provision, processing and distribution of animal feed, including fishery by-products.
2. Assess national and regional food supply requirements including estimates submitted by any other department or any National Emergency Agency, and by commercial processors and distributors; compare requirements with availabilities, and make reconciliation of competing claims and establish priorities, as required.

Minister of
Communications

National Emergency Agency
for Telecommunications

1. Operate a national warning system, and coordinate the system with the operation of the emergency broadcasting service.
2. In accordance with the established policy, exercise censorship controls over telecommunications.

Solicitor General of Canada

1. Prepare and maintain draft orders, regulations and such other enactments as are required to ensure the internal security of Canada in collaboration with the Minister of Justice.
6. Establish, administer and operate civilian internment camps.
7. Facilitate the selective reduction and transfer of prison populations to provide for the establishment of civilian internment camps.

Minister of
Employment and
Immigration

National Emergency Agency
for Manpower

1. Control and regulate the registration, mobilization, allocation and movement of civilian manpower, excluding medical manpower, taking into consideration the requirements of other National Emergency Agencies and Ministers, reconcile competing claims and establish such priorities as may be required.
2. Assess the need for and determine the availability of manpower resources and initiate programs to overcome deficiencies in the availability of skilled personnel.
3. In collaboration with the Minister of Labour, regulate and control conditions of work, rates of remuneration, occupational safety and relations between labour and management.
4. Provide for the administration and payment of unemployment insurance and related compensation benefits.
5. Provide for port of entry control and inland control of immigration and for the processing of refugees.
6. Establish a population register for the effective management of manpower in consultation with other Ministers and National Emergency Agencies.
7. Arrange any required international manpower transactions.

Minister of
Energy, Mines
and Resources

National Emergency Agency
for Energy

1. Control and regulate
 - (a) the production of fuels, including petroleum, natural gas, coal, nuclear and synthetic fuels;
 - (b) the bulk transport and storage of fuels and processing and distribution of fuel products;
 - (c) any allocation and rationing of gasoline, diesel fuel, or other fuel products;
 - (d) performance, modification or conversion of alternative space heating and industrial energy-consuming systems; and
 - (e) the development and implementation of practical solar, wind, bio-mass or other energy supply systems.

Minister
responsible for
Canada Mortgage
and Housing
Corporation

National Emergency Agency
for Housing and Accommodation

1. Control and regulate the use of existing accommodation in times of emergency, including the requisitioning, appropriation and procurement of real property, dwellings, commercial and institutional accommodation.
2. Control and regulate the rent, lease or sale of real property.
3. Coordinate and implement programs to construct and allocate new or rehabilitated housing and related facilities, including the provision of associated water, sewage and other utility services.

Minister of
Transport

National Emergency Agency
for Transportation

1. Control, regulate and direct the operation of all modes or systems of transportation, including air, sea, rail and road, other than those systems operated by or on behalf of the Canadian Forces, or any forces cooperating therewith, or the Royal Canadian Mounted Police and other than those vessels, facilities and services under the control of the Minister of Fisheries and Oceans.
2. Coordinate, manage and direct
 - (a) the allocation of transportation equipment; and
 - (b) the use of transportation facilities, including the use of airports, ports, harbours, terminals and inland waterways.

Prime Minister of Canada

Establish an organization to coordinate and implement the application of censorship controls.

MYTHS AND FALSEHOODS OF NUCLEAR WEAPONS

The full page ad in the August 6 London Free Press by Ploughshares London opposes the Cruise missile testing. (Ad is at right)

The MetroBulletin views the Cruise as a tactically unnecessary weapon, but Ploughshares statement wallows in bleeding-heart unreality.

The 'we deeply regret the bombing of Hiroshima...' is exploitative tripe of the lowest level.

The bombing of Hiroshima & Nagasaki killed approximately 200,000 Japanese. Continuing the war on the Japanese mainland in order to force the Japanese to surrender would have cost an additional 1,500,000 American lives and up to 2 to 3 million Japanese lives. The Japanese were a fanatical people bent on defence of their nation at all costs.

If the war had dragged on another 6 months, another 250,000 Chinese would have died of attrition, famine, concentration camps, P.O.W. camps and disease.

The Ploughshares people have conveniently forgotten that the Japanese military of the Second World War was the most vicious, bloodthirsty, ruthless military of any (including the Russians or Nazis).

The Japanese routinely used live Chinese people for bayonet practice (tens of thousands died this way alone), the Japanese invaders raped over half a million women, performed germ experiments on thousands of prisoners, and these are just the beginning of Japanese atrocities.

The Japanese could only be brought about to surrender under extraordinary means.

And after all, they did start the war.

If the Ploughshares people bleed for those killed at Hiroshima, perhaps for a second they could think about the 3 - 4 million saved because of an appropriate use of nuclear bombs.

THE LONDON FREE PRESS, Saturday, August 6, 1983

HIROSHIMA never again

We, the undersigned, recognize this day as one of mourning and of hope.

On this, the 38th anniversary of the dropping of the first nuclear bomb, we grieve for the terrible loss of 200,000 innocent human lives, many of whom were children, as we mourn the tragedy that took place in Hiroshima, Japan. Yet, we also recognize this day as one of hope for humanity, for we firmly believe that there is still time to avert human catastrophe and mass annihilation.

On this day, as we remember Hiroshima, we make as our public stand, the following:

1. We deeply regret the bombing of Hiroshima, and pray that never again, anywhere in the world, will a nuclear bomb be dropped on any nation or people.

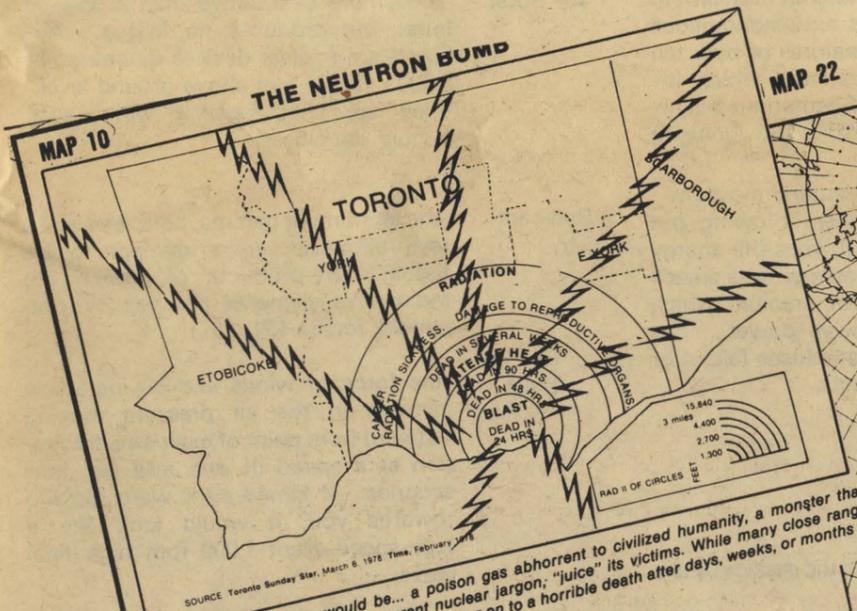
2. We call for the abolition of nuclear weapons from the face of the earth.
3. We urge our federal government to maintain its non-nuclear role in NATO, and halt the testing of the Cruise missile on Canadian soil.

Because one Cruise is equivalent to 15 Hiroshimas, and the U.S. plans to build 7,500 of these missiles, we believe that the deployment of Euromissiles and the testing of the Cruise can serve only to further the arms race, and bring us one step closer to total disaster.

We believe we must act together with the people of the world to affirm our common unity as citizens of one planet. We believe there is still time, if we assert ourselves and make our voices heard. We believe in the future.

"Mankind is confronted with a choice: We must halt the arms race and proceed to disarm or face annihilation."

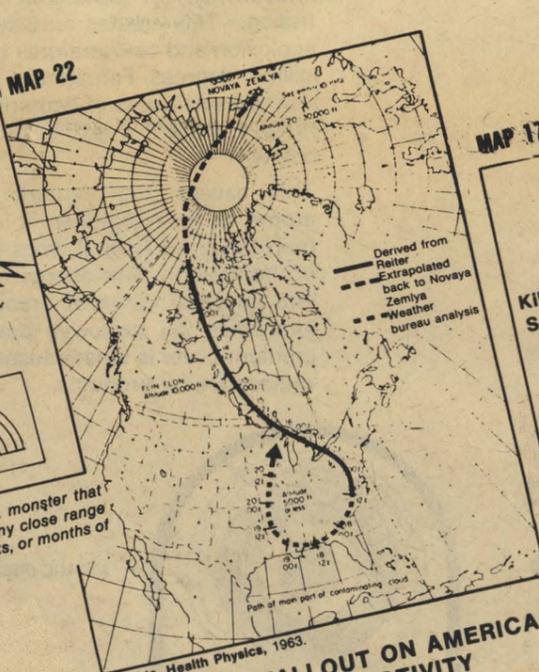
— Union Special Session on Disarmament



MAP 10: THE NEUTRON BOMB. SOURCE: Toronto Sunday Star, March 6, 1978; Time, February 1978. "... a neutron bomb... would be... a poison gas abhorrent to civilized humanity, a monster that rather than kill would, in the current nuclear jargon, 'juice' its victims. While many close range would die quickly, many others would linger on to a horrible death after days, weeks, or months of internal torture." W.L. Lawrence, "Nuclearism", Child Psychology, 1980.

The above 3 maps are samples from a \$5 wall poster available from the U.W.O. Bookstore.

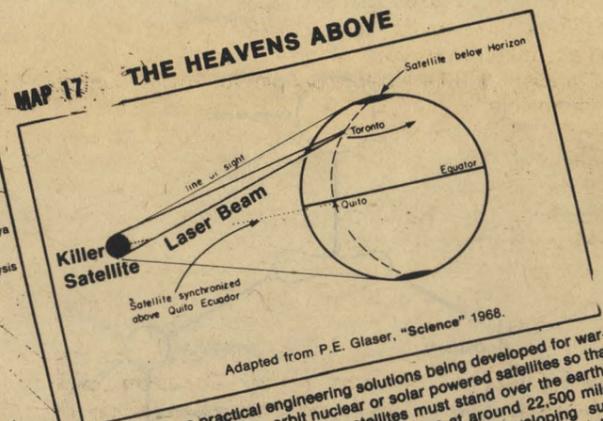
Map 10 shows a completely incorrect version of the neutron bomb. The neutron bomb was designed to be less than one kiloton (the Cruise is up to 500 kilotons) and after destroying the target (ground zero to .3 miles outward), would irradiate an additional .75 of a mile outward. This map shows a blast far bigger than it would ever cause, and it shows radiation going out for over 40 miles.



MAP 22: POTENTIAL FALLOUT ON AMERICA OF IT'S OWN RADIOACTIVITY. Machta, Health Physics, 1963.

In case of a radioactive war between the U.S.S.R. and the U.S.A. some of the radiation will be almost directly exchanged with only hapless Canada in between.

Map 22 shows a complete lie regarding fallout. It could never travel that way.



MAP 17: THE HEAVENS ABOVE. Adapted from P.E. Glaser, "Science" 1968. There are practical engineering solutions being developed for wartime use of the skies. To orbit nuclear or solar powered satellites so that they stand over one location, the satellites must stand over the earth's Equator synchronized with the Earth's rotation at around 22,500 miles above the earth's surface. Today, militarists are developing such weapons as killer satellites to release laser beams over targets at intervals as they recharge from solar batteries. Targets such as Toronto can then be "spot welded" into oblivion.

Map 17 shows looney tune stuff indeed. No such killer satellites exist or otherwise all nuclear weapons would be obsolete. This wall chart is replete with such deception and falsehoods.

**NUCLEAR WAR COULD HAPPEN TOMORROW!
THE GOOD NEWS IS... YOU MIGHT BE KILLED.
THE BAD NEWS IS... YOU MIGHT SURVIVE!**

More 'end of the planet' misinformation on the back of the book 'Nuclear Weapons, What's In It For You.'

Type of Launcher	Number of Launchers Deployed	Number of Warheads on Each Launcher	Yield Per Warhead (TNT Equivalent)	(Hiroshima Equivalent)
Intercontinental Ballistic Missiles (ICBMs)				
SS-11	520	1	1-2 megatons	67-133
SS-13	60	1	600 kilotons-1 megaton	40-67
		4	700 kilotons-500 kilotons	47
SS-17	150	1-10	2 megatons	33-133
SS-18	308		700 kilotons	47
Submarine-Launched Ballistic Missiles (SLBMs)				
SS-19	360	6	1 megaton	67
SS-N-6	416	1	2 megatons	133
SS-N-8	280	3 or 7	200-500 kilotons	13-33
SS-N-18	176			
Long-Range Bombers				
Bison	35	4	1 megaton	67
Bear	105	4	1 megaton	67

To the left is a chart from the paperback 'Freeze' indicating the current arsenal in 'Hiroshima equivalents', a completely irrelevant comparison. (See 'What Is A Nuclear Weapon')

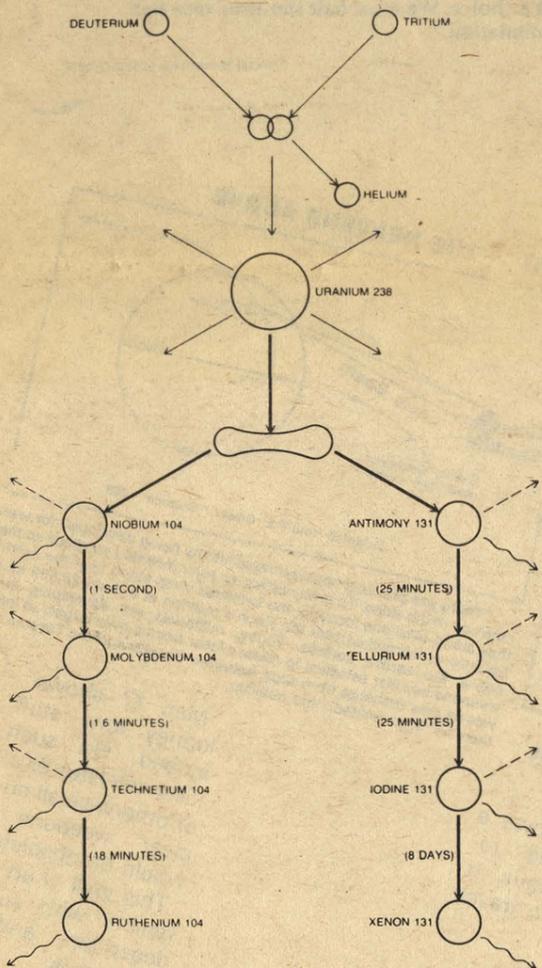
GLOSSARY

Deuterium -a hydrogen atom (in heavy water) that has two neutrons instead of one.

Tritium -a hydrogen atom (in heavy water) that has three neutrons instead of one.

Hydrogen -the smallest element; containing one, two or three neutrons. When heated up (10,000,000 degrees Fahrenheit), hydrogen isotopes deuterium and tritium fuse to form helium, releasing a fabulously energetic neutron.

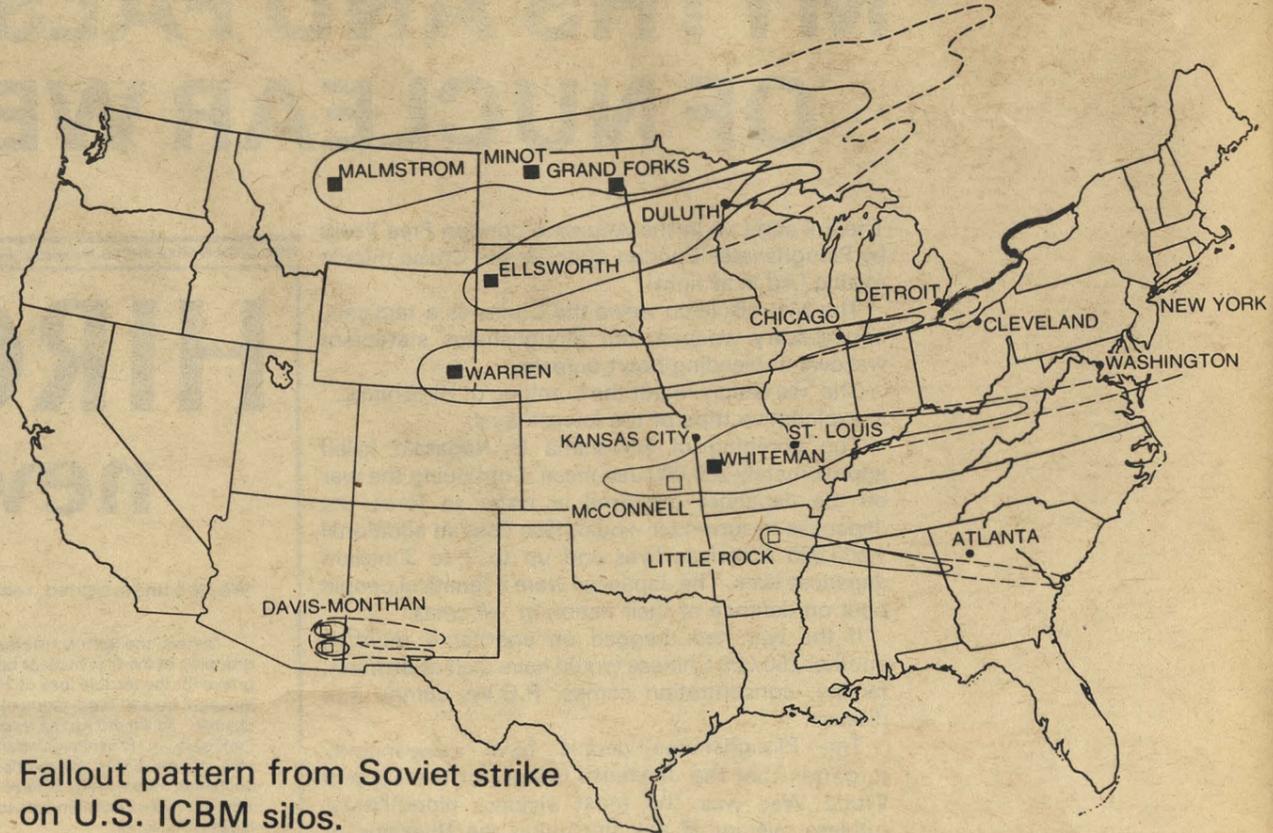
Decay -the breakdown of an element, in this case, *radioactive* elements that become less potent and form by-products of uranium and plutonium such as yttrium, strontium-90, etc. Ultimately, these by-products decay until stable isotopes are formed. The decay period can be as little as one millionth of a second or as long as 4.5 billion years for uranium-238. Here is a decay schedule of a hydrogen fusion of deuterium and tritium exploding into a uranium tamper (from *Scientific American* Nov. '76):



FISSION PRODUCTS, the source of fallout radiation, are produced in the chain of events following a nuclear explosion, in this case a typical fission-fusion-fission explosion. Heated by an initial fission explosion, the hydrogen isotopes deuterium and tritium fuse to form helium, releasing an energetic neutron (colored arrow). The neutron enters the nucleus of a uranium-238 atom, making it unstable; it fissions, releasing four neutrons and two radioactive daughter nuclei, or fission products. The fission products emit beta rays, or electrons (broken arrows), and gamma rays (wavy arrows), thus decaying to form new products. Each decay chain ultimately terminates in a stable isotope. For each transition there is a characteristic half-life, which tends to become longer as the stable stage is approached. Other decay chains, not illustrated here, produce the important long-lived radioisotopes strontium 90 and cesium 137.

Isotopes -a 'family' of atoms with the same number of protons but a different number of neutrons. For example, deuterium, tritium, and hydrogen are hydrogen isotopes. About fifty radioactive isotopes (families of atoms) occur in nature; man has created 1,100 others.

Fission -the 'splitting' of a plutonium or uranium atom by motivating the neutron to 'escape' its orbit. Once leaving the area close to its own nucleus, it smacks into other neutrons, which 'escape' and smack into still others. This happens at the speed of light, and great energy (forming a 'chain reaction' of colliding neutrons) is released in the process.



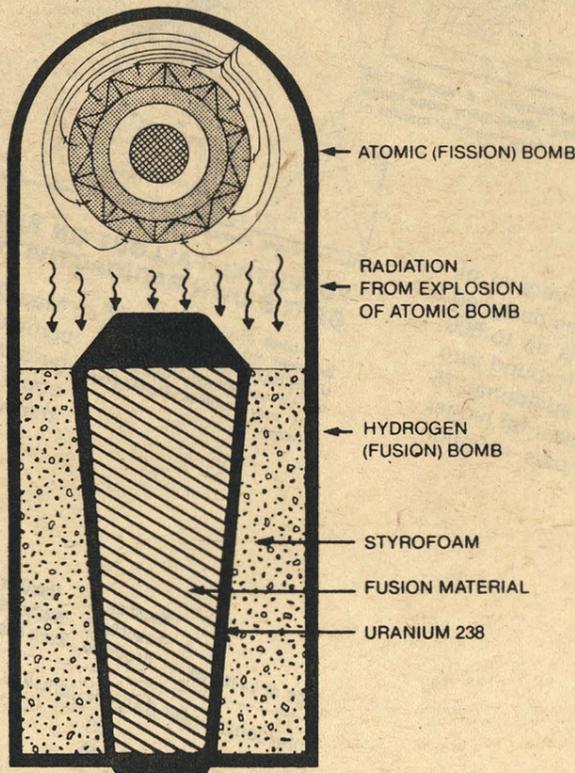
Fallout pattern from Soviet strike on U.S. ICBM silos.

COUNTERFORCE ATTACK on all Titan (white squares) and Minuteman (color squares) ICBM bases, with two one-megaton surface bursts (50 percent fission yield) per silo, could produce these patterns. Each inner contour delimits a 450-rem dose indoors (50 percent fatalities) and each outer contour a 200-rem dose indoors (50 percent hospitalized). Typical March wind speeds are assumed.

Fusion -when heavy (deuterium or tritium) hydrogen atoms are heated up to several million degrees, they fuse and throw out helium and highly energized neutrons (the excess neutron(s) no longer required as they fuse).

Fission-fusion-fission -the process involved in the current thermonuclear explosive devices. First a fission explosion occurs by causing a critical mass of plutonium-uranium to fission. This creates an instantaneous explosion and temperatures of over ten million degrees Fahrenheit, which instantly heats a core of deuterium-tritium ('heavy water' - see bomb drawing below).

This causes the deuterium-tritium atoms to fuse together, throwing out more neutrons (with 3 times the energy of the fission). This energy runs smack into an outer cover of uranium which intensifies the explosive power. The uranium cover is what causes fallout or radioactive by-products.



Hydrogen (Fusion) Bomb

Surface Burst -a nuclear device exploded at ground level. A surface burst causes only 60% of the destruction in blast-thermal heat as an 'airburst', but it produces life-threatening fallout. A surface burst is a tactical decision taken in consideration of destroying 'hardened' or 're-inforced' targets like missile silos, command centres, etc.

Air Burst -60% more destructive than a surface burst, but produces no fallout. Airbursts are nuclear devices detonated at 2,000 - 10,000 feet above ground level. They are used against wide 'soft' targets like cities.

Radioactivity -the emitting of gamma, beta, and alpha rays; all cause varying damage to live tissue. By-products of fission are radioactive elements also (eg., strontium-90, iodine-131, etc.)

Blast -the force of winds and an incredible increase in the air pressure moving outward from point of explosive detonation at a speed of one mile per four seconds. If filmed as it were moving towards you, it would look like a high-speed silent 1,000 foot high tidal wave.

Initial Nuclear Radiation -within ten minutes after a nuclear explosion, radiation immerses an area two miles from ground zero (decaying over the next few days). Because no one will be alive in these areas anyway due to blast and thermal effects, this is of little concern. However, these were the causes of radiation deaths and illnesses in Hiroshima and Nagasaki, since many people within the two mile radius survived the initial explosion.

Fallout -When a nuclear device explodes at ground level, millions of tons of incinerated debris are sucked up into the hot rising gases of the 'mushroom cloud', where radioactive molten droplets cover all debris particles. The now radioactive particles rise eight to twelve miles and are carried by tropospheric winds (generally in one direction) 300-400 miles in a 25-30 mile wide swatch of area. Fallout is deposited over the 24 hours after the mushroom cloud tops, and the heaviest particles fall first. Fallout contains life-threatening gamma radiation, and many by-products that are hazardous.

REMs -the measurement term to indicate the damage to human tissue from radiation (radioactive fallout). It is an acronym for 'Roentgen equivalent man'.

Heavy Water -found naturally at the bottom of the ocean or made artificially; it is water (hydrogen and oxygen) with the hydrogen atoms containing two (deuterium) or three (tritium) neutrons.

The Kearny Fallout Meter

Reprinted from: *The KFM, A Homemade Yet Accurate and Dependable Fallout Meter, ORNL-5040. Published by Oak Ridge National Laboratory. Available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. Price \$8.00.*

I. The Need for Accurate and Dependable Fallout Meters

If a nuclear war ever strikes the United States, survivors of the blast and fire effects would need to have reliable means of knowing when the radiation in the environment around their shelters had dropped enough to let them venture safely outside. Civil defense teams could use broadcasts of surviving radio stations to give listeners a general idea of the fallout radiation in some broadcast areas. However, the fallout radiation would vary widely from point to point and the measurements would be made too far from most shelters to make them accurate enough to use safely. Therefore, each shelter should have some dependable method of measuring the changing radiation dangers in its own area.

During a possible nuclear crisis that was rapidly worsening, or after a nuclear attack, most unprepared Americans could not buy or otherwise obtain a fallout meter -- an instrument that would greatly improve their chances of surviving a nuclear war. The fact that the dangers from fallout radiation -- best expressed in terms of the radiation dose rate, roentgens per hour (R/hr) -- quite rapidly decrease during the first few days, and then decrease more and more slowly, makes it very important to have a fallout meter capable of accurately measuring the unshielded, unfiltered and changing fallout dangers. Occupants of a fallout shelter should be able to control the radiation doses they receive. In order to effectively control the radiation doses, a dependable measuring instrument is needed to determine the doses they receive while they are in the shelter and while they are outside for emergency tasks, such as going out to get badly needed water. Also, such an instrument would permit them to determine when it is safe to leave the shelter for good.

Untrained families, guided only by these written instructions and using only low cost materials and tools found in most homes, have been able to make a KFM by working 3 or 4 hours. By studying the operating sections of these instructions for about 1 1/2 hours, average untrained families have been able to successfully use this fallout meter to measure dose rates and to calculate radiation doses received, permissible times of exposure, etc.

The KFM (Kearny Fallout Meter) was developed at Oak Ridge National Laboratory. It is understandable, easily repairable, and as accurate as most civil defense fallout meters. In the United States in 1976 a commercially available ion chamber fallout meter that has as high a range as a KFM for gamma radiation dose-rate measurements retailed for \$600.

Before a nuclear attack occurs is the best time to build, test and learn how to use a KFM. However, this instrument is so simple that it could be made even after fallout arrives and provided that all the materials and tools needed (see lists given in Sections V, VI, and VII) and a copy of these instructions have been carried into the shelter.

II. Survival Work Priorities During a Crisis

Before building a KFM, persons expecting a nuclear attack within a few hours or days and already in the place where they intend to await attack should work with the following priorities: (1) build or improve a high-protection-factor shelter (if possible, a shelter covered with 2 or 3 feet of earth and separate from flammable buildings); (2) make and install a KAP (a homemade shelter-ventilating pump) -- if instructions and materials are available; (3) store at least 15 gallons of water for each shelter occupant -- if containers are available; (4) assemble all materials for one or two KFMs; and (5) make and store the drying agent (by heating wallboard gypsum, as later described) for both the KFM and its dry-bucket.

III. How to Use These Instructions to Best Advantage

1. Read ALOUD all of these instructions through Section VII, "Tools Needed," before doing anything else.

2. Next assemble all of the needed materials and tools.

3. Then read ALOUD ALL of each section following Section VII before beginning to make the part described in that section.

A FAMILY THAT FAILS TO READ ALOUD ALL OF EACH SECTION DESCRIBING HOW TO MAKE A PART, BEFORE BEGINNING TO MAKE THAT PART, WILL MAKE AVOIDABLE MISTAKES AND WILL WASTE TIME.

4. Have different workers, or pairs of workers, make the parts they are best qualified to make. For example, a less skilled worker should start making the drying agent (as described in Section VII) before other workers start making other parts. The most skilled worker should make and install the aluminum-foil leaves (Sections X and XI).

5. Give workers the sections of the instructions covering the parts they are to build -- so they can follow the step-by-step instructions, checking off with a pencil each step as it is completed.

6. Discuss the problems that arise. The head of the family often can give better answers if he first discusses the different possible interpretations of some instructions with other family members, including teenagers.

7. After completing one KFM and learning to use it, if time permits make a second KFM -- that should be a better instrument.

IV. What a KFM Is and How It Works

A KFM is a simple electrostatic fallout meter with which fallout radiation can be measured accurately. To use a KFM, an electrostatic charge must first be placed on its two separate aluminum-foil leaves. These leaves are insulated by being suspended separately on clean, dry insulating threads.

To take accurate readings, the air inside a KFM must be kept very dry by means of drying agents such as dehydrated gypsum (easily made by heating gypsum wallboard, "sheetrock" or silica gel. Do not use calcium chloride or other salt). Pieces of drying agent are placed on the bottom of the ionization chamber (the housing can) of a KFM.

An electrostatic charge is transferred from a homemade electrostatic charging device to the two aluminum-foil leaves of a KFM by means of its charging-wire. The charging-wire extends out through the transparent plastic cover of the KFM.

When the two KFM leaves are charged electrostatically, their like charges (both positive or both negative) cause them to be forced apart. When fallout gamma radiation (that is similar to X rays but more energetic) strikes the air inside the ionization chamber of a KFM, it produces charged ions in this enclosed air. These charged ions cause part or all of the electrostatic charge on the aluminum-foil leaves to be discharged. As a result of losing charge, the two KFM leaves move closer together.

To read the separation of the lower edges of the two KFM leaves with one eye, look straight down on the leaves and the scale on the clear plastic cover. Keep the reading eye 12 inches above the SEAT. The KFM should be resting on a horizontal surface. To be sure the reading eye is always at this exact distance, place the lower end of a 12-inch ruler on the SEAT, while the upper end of the ruler touches the eyebrow above the reading eye. It is best to hold the KFM with one hand and the ruler with the other. Using a flashlight makes the reading more accurate.

If a KFM is made with the specified dimensions and of the specified materials, its accuracy is automatically and permanently established. Unlike most radiation measuring instruments, a KFM never needs to be calibrated or tested with a radiation source, if made and maintained as specified and used with the following table that is based on numerous calibrations made at Oak Ridge National Laboratory.

The millimeter scale is cut out and attached (see photo illustrations on the following page) to the clear plastic cover of the KFM so that its zero mark is directly above the two leaves in their discharged position when the KFM is resting on a horizontal surface. A reading of the separation of the leaves is taken by noting the number of millimeters that the lower edge of one leaf appears to be on, on one side of the zero mark on the scale, and almost at the same time noting the number of millimeters the lower edge of the other leaf appears to be on, on the other side of the zero mark. The sum of these two apparent positions of the lower edges of the two leaves is called a KFM reading. The drawing appearing after the photo illustrations shows the lower edges of the leaves of a KFM appearing to be 9 mm on the right and zero and 10 on the left, giving a KFM reading of 19 mm. (Usually the lower edges of the leaves are not at the same distance from the zero mark.)

As will be fully explained later, the radiation dose rate is determined by:

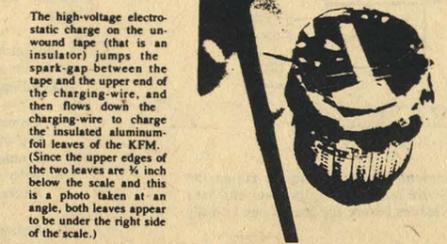
- charging and reading the KFM before exposure;
- exposing it to radiation for a specified time in the location where measurement of the dose rate is needed -- when outdoors, holding the KFM about 3 ft. above the ground;
- reading the KFM after its exposure;
- calculating, by subtraction, the difference between the reading taken before exposure and the reading taken after exposure;
- using this table to find what the dose rate was during the exposure -- as will be described later.

Instructions on how to use a KFM are given after those detailing how to make and charge this fallout meter.

To get a clearer idea of the construction and use of a KFM, look carefully at the following photos and read their captions.

- An Uncharged KFM.** The charging wire has been pulled to one side by its adjustment-thread. This photo was taken looking straight down at the upper edges of the two flat, 8-ply aluminum leaves. At this angle the leaves are barely visible, appearing vertically as side-by-side lines touching the zero mark, touching each other and with their ends even. Their suspension-threads insulate the leaves. These threads are almost parallel and touch (but do not cross) each other where they extend over the top of the rim of the can.

- Charging a KFM by a Spark-Gap Discharge from a Tape That Has Been Electrostatically Charged by Being Unwound Quickly.** Note that the charged tape is moved so that its surface is perpendicular to the charging-wire.



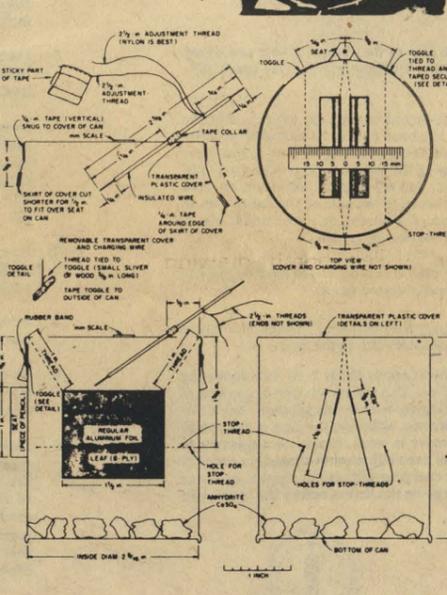
- A Charged KFM.** Note the separation of the upper edges of its two leaves. The charging-wire has been raised to an almost horizontal position so that its lower end is too far above the aluminum leaves to permit electrical leakage from the leaves back up the charging-wire and into the outside air.



- Reading a KFM.** A 12-inch ruler rests on the SEAT and is held vertical, while the reader's eyebrow touches the upper end of the ruler. The lower edge of the right leaf is under 8 on the scale and the lower edge of the left leaf is under 6 on the scale, giving a KFM reading of 14.



For accurate radiation measurements, a KFM should be placed on an approximately horizontal surface, but the charges on its two leaves and their displacements do not have to be equal.



V. Materials Needed

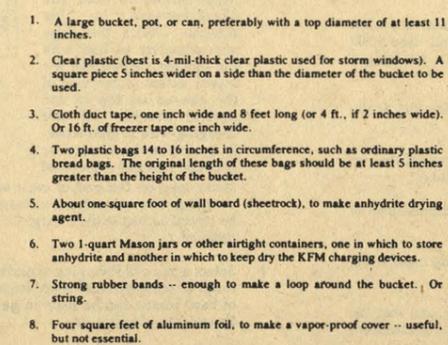
A. For the KFM: (In the following list, when more than one alternative material is given, the best material is listed first.)

- Any type metal can, approximately 2-9/16 inches in diameter inside and 2-7/8 inches high inside, washed clean with soap. (This is the size of a standard 8-ounce can. Since most soup cans, pop cans, and beer cans also are about 2-9/16 inches in diameter inside, the required size of can also can be made by cutting down the height of more widely available cans -- as described in Section IX of these instructions.)
- Standard aluminum foil -- 2 square feet. (In 1977, 2 square feet of a typical aluminum foil weighed about 8.2 grams -- about 0.29 oz.) (If only "Heavy Duty" or "Extra Heavy Duty" aluminum foil is available, make 5-ply leaves rather than 8-ply leaves of standard foil; the resultant fallout meter will be almost as accurate.)
- Doorbell-wire, or other light insulated wire (preferably but not necessarily a single-strand wire inside the insulation) -- 6 inches.
- Any type of lightweight thread (preferably but not necessarily nylon). (Best is twisted nylon thread; next best, unwarped lightweight nylon dental floss; next best, silk; next best, polyester.) -- 3 feet. (Thread should be CLEAN, preferably not having been touched with fingers. Monofilament nylon is too difficult to see, handle, and mark.)
- A piece of clear plastic -- a 6 x 6 inch square. Strong polyethylene (4 mils thick) used for storm-proofing windows is best, but any reasonably stout and rather clear plastic will do. The strong clear plastic used to wrap pieces of cheese, if washed with hot water and soap, is good. Do not use weak plastic or cellophane.
- Cloth duct tape ("silver tape"), or masking tape, or freezer tape, or Scotch-type tape -- about 10 square inches. (Save at least 10 feet of Scotch Magic Transparent Tape for the charging device.)
- Band-Aid tape, or masking tape, or freezer tape, or Scotch transparent tape, or other thin and very flexible tapes -- about 2 square inches.
- Gypsum wallboard (sheetrock) -- about 1/2 square foot, best about 1/2 inch thick. (To make the essential drying agent.)
- Glue -- not essential, but useful to replace Band-Aid and other thin tapes. "One hour" epoxy is best. Model airplane cement is satisfactory.
- An ordinary wooden pencil and a small toothpick (or split a small sliver of wood).
- Two strong rubber bands, or string.

B. For the Charging Devices:

- Most hard plastic rubbed on dry paper. This is the best method.
 - Plexiglas and most other hard plastics, such as are used in draftsman's triangles, common smooth plastic rulers, etc. -- at least 6 inches long.
 - Dry paper -- Smooth writing or typing paper. Tissue paper, newspaper, or facial tissue such as Kleenex, or toilet paper are satisfactory for charging, but not as durable.
 - Scotch Magic Transparent Tape (3/4 inch width is best), or Scotch Transparent Tape, or P.V.C. (Polyvinyl chloride) insulating electrical tapes, or a few of the other common brands of Scotch-type tapes. (Some plastic tapes do not develop sufficiently high-voltage electrostatic charges when unrolled quickly.) This method cannot be used for charging a KFM inside a dry-bucket, needed for charging when the air is very humid.
- C. For Determining Dose Rates and Recording Doses Received:
- A watch -- preferably with a second hand.
 - A flashlight or other light, for reading the KFM in a dark shelter or at night.
 - Pencil and paper -- preferably a notebook.

- For the Dry-Bucket: (A KFM must be charged inside a dry-bucket if the air is very humid, as it often is inside a crowded, long-occupied shelter lacking adequate forced ventilation.)
 - A large bucket, pot, or can, preferably with a top diameter of at least 11 inches.
 - Clear plastic (best is 4-mil-thick clear plastic used for storm windows). A square piece 5 inches wider on a side than the diameter of the bucket to be used.
 - Cloth duct tape, one inch wide and 8 feet long (or 4 ft., if 2 inches wide). Or 16 ft. of freezer tape one inch wide.
 - Two plastic bags 14 to 16 inches in circumference, such as ordinary plastic bread bags. The original length of these bags should be at least 5 inches greater than the height of the bucket.
 - About one square foot of wall board (sheetrock), to make anhydrite drying agent.
 - Two 1-quart Mason jars or other airtight containers, one in which to store anhydrite and another in which to keep dry the KFM charging device.
 - Strong rubber bands -- enough to make a loop around the bucket. Or string.
 - Four square feet of aluminum foil, to make a vapor-proof cover -- useful, but not essential.



VI. Useful but Not Essential Materials -- Which Could be Obtained Before a Crisis--

- An airtight container (such as a large peanut butter jar) with a mouth at least 4 inches wide, in which to keep a KFM, along with some drying agent, when it is not being used. Keeping a KFM very dry greatly extends the time during which the drying agent inside the KFM remains effective.
- Commercial anhydrite with a color indicator, such as the drying agent Drierite. This granular form of anhydrite remains light blue as long as it is effective as a drying agent. Obtainable from laboratory supply sources.

VII. Tools Needed

- Small nail -- sharpened
- Stick, or a wooden tool handle (best 2-1/2 inch diameter and at least 12 inches long)
- Hammer
- Pliers
- Scissors
- Needle -- quite a large sewing needle, but less than 2 1/2 inches long
- Knife with a small blade -- sharp
- Ruler (12 inches)

VIII. Make the Drying Agent -- The Easiest Part to Make, but Time Consuming --

- For a KFM to measure radiation accurately, the air inside its ionization chamber must be kept very dry. An excellent drying agent (anhydrite) can be made by heating the gypsum in ordinary gypsum wallboard (sheetrock). Do NOT use calcium chloride.
- Take a piece of gypsum wallboard approximately 12 inches by 6 inches, and preferably with its gypsum about 3/8 inches thick. Cut off the paper and glue, easiest done by first wetting the paper. (Since water vapor from normal air penetrates the plastic cover of a KFM and can dampen the anhydrite and make it ineffective in as short a time as two days, fresh batches of anhydrite must be made before the attack and kept ready inside the shelter for replacement. The useful life of the drying agent inside a KFM can be greatly lengthened by keeping the KFM inside an airtight container (such as a peanut butter jar with a 4-inch-diameter mouth) with some drying agent, when the KFM is not being used.)
- Break the white gypsum filling into small pieces and make the largest no more than 1/2 in. across. (The tops of pieces larger than this may be too close to the aluminum foil leaves.) If the gypsum is dry, using a pair of pliers makes breaking it easier. Make the largest side of the largest pieces no bigger than this.

- Dry gypsum is not a drying agent. To drive the water out of the gypsum molecules and produce the drying agent (anhydrite), heat the gypsum in an oven at its highest temperature (which should be about 400 degrees F) for one hour. Heat the gypsum after placing the small pieces no more than two pieces deep in a pan. Or heat the pieces over a fire for 20 minutes or more in a pan or can heated to a dull red.
- If sufficient aluminum foil and time are available, it is best to heat the gypsum and store the anhydrite as follows:
 - That the right amount of anhydrite can be taken quickly out of its storage jar, put enough pieces of gypsum in a can with the same diameter as the KFM, measuring out a batch of gypsum that almost covers the bottom of the can with a single layer.
 - Cut a piece of aluminum foil about 8 in. x 8 in. square, and fold up its edges to form a bowl-like container in which to heat one batch of gypsum pieces.
 - Measure out 10 or 12 such batches, and put each batch in its aluminum foil "bowl."
 - Heat all of these filled "bowls" of gypsum in hottest oven for one hour.
 - As soon as the aluminum foil is cool enough to touch, fold and crumple the edges of each aluminum foil "bowl" together, to make a rough aluminum-covered "ball" of each batch of anhydrite.

Since anhydrite absorbs water from the air very rapidly, quickly put it in a dry airtight container while it is still quite hot. A Mason jar is excellent.

To place anhydrite in a KFM, drop in the pieces one by one, being careful not to hit the leaves or the stop-threads. The pieces should almost cover the bottom of the can, with no piece on top of other pieces.

To remove anhydrite from a KFM, use a pair of scissors or tweezers as forceps, holding them in a vertical position and not touching the leaves.

IX. Make the Ionization Chamber of the KFM (To Avoid Mistakes and Save Time. Read All of This Section ALOUD Before Beginning Work.)

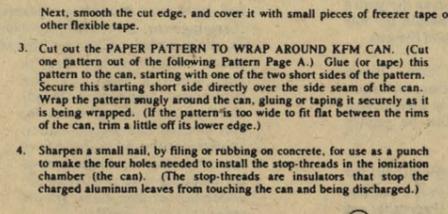
- Remove the paper label (if any) from an ordinary 8-ounce can from which the top has been smoothly cut. Wash the can with soap and water and dry it. (An 8-ounce can has an inside diameter of about 2-9/16 inches and an inside height of about 2-7/8 inches.)
- Skip to step 3 if an 8-ounce can is available. If an 8-ounce can is not available, reduce the height of any other can having an inside diameter of about 2-9/16 inches (such as most soup cans, most pop cans, or most beer cans). To cut off the top part of a can, first measure and mark the line on which to cut. Then to keep from bending the can while cutting, wrap newspaper tightly around a stick or a round wooden tool handle, so that the wood is covered with 20 to 30 thicknesses of paper and the diameter (ideally) is only slightly less than the diameter of the can.

One person should hold the can over the paper-covered stick while a second person cuts the can little by little along the marked cutting line. If leather gloves are available, wear them. To cut the can off smoothly, use a file, or use a hacksaw drawn backwards along the cutting line. Or cut the can with a sharp, short blade of a pocketknife: (1) repeatedly stabbing downward vertically through the can into the paper, and (2) repeatedly making a cut about 1/8 inch long by moving the knife into a sloping position, while keeping its point still pressed into the paper covering the stick.

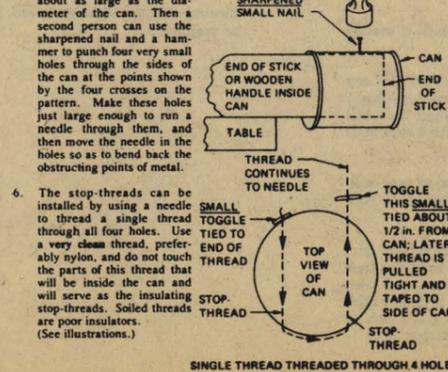
Next, smooth the cut edge, and cover it with small pieces of freezer tape or other flexible tape.

- Cut out the PAPER PATTERN TO WRAP AROUND KFM CAN. (Cut one pattern out of the following Pattern Page A.) Glue (or tape) this pattern to the can, starting with one of the two short sides of the pattern. Secure this starting short side directly over the side seam of the can. Wrap the pattern snugly around the can, gluing or taping it securely as it is being wrapped. (If the pattern is too wide to fit flat between the rims of the can, trim a little off its lower edge.)
- Sharpen a small nail, by filing or rubbing on concrete, for use as a punch to make the four holes needed to install the stop-threads in the ionization chamber (the can). (The stop-threads are insulators that stop the charged aluminum leaves from touching the can and being discharged.)

Have one person hold the can over a horizontal stick or a round wooden tool handle that ideally has a diameter about as large as the diameter of the can. Then a second person can use the sharpened nail and a hammer to punch four very small holes through the sides of the can at the points shown by the four crosses on the pattern. Make these holes just large enough to run a needle through them, and then move the needle in the holes so as to bend back the obstructing points of metal.



The stop-threads can be installed by using a needle to thread a single thread through the four crosses on the pattern, using a very clean thread, preferably nylon, and do not touch the parts of this thread that will be inside the can and will serve as the insulating stop-threads. Soiled threads are poor insulators. (See illustrations.)



Before threading the thread through the four holes, tie a small toggle (see the preceding sketch) to the long end of the thread. (This toggle can easily be made of a very small sliver of wood cut about 3/8 in. long.) After the thread has been pulled through the four holes, attach a second toggle to the thread, about 1/2 inch from the part of the thread that comes out of the fourth hole. Then the thread can be pulled tightly down the side of the can and the second small toggle can be taped securely in place to the side of the can. (If the thread is taped down without a toggle, it is likely to move under the tape.)

The first toggle and all of the four holes also should be covered with tape, to prevent air from leaking into the can after it has been covered and is being used as an ionization chamber.

X. Make Two Separate 8-Ply Leaves of Standard (Not Heavy Duty*) Aluminum Foil

Proceed as follows to make each leaf:

- Cut out a piece of standard aluminum foil approximately 4 inches by 8 inches.
- Fold the aluminum foil to make a 2-ply (= 2 thicknesses) sheet approximately 4 inches by 4 inches.
- Fold this 2-ply sheet to make a 4-ply sheet approximately 2 inches by 4 inches.
- Fold this 4-ply sheet to make an 8-ply sheet (8 sheets thick) approximately 2 inches by 2 inches, being sure that the two halves of the second-fold edge are exactly together. This third folding makes an 8-ply aluminum foil sheet with one corner exactly square.
- Cut out the FINISHED-LEAF PATTERN, found on the following Pattern Page B. Note that this pattern is NOT a square and that it is smaller than the 8-ply sheet. Flatten the 8 thicknesses of aluminum foil with the fingers until they appear to be a single thin, flat sheet.
- Hold the FINISHED-LEAF PATTERN on top of the 8-ply aluminum foil sheet, with the pattern's THIRD-FOLD EDGE on top of the third-fold edge of the 8-ply aluminum sheet. Be sure that one lower corner of the FINISHED-LEAF PATTERN is on top of the exactly square corner of the 8-ply aluminum sheet.
- While holding a straight edge along the THREAD LINE of the pattern, press with a sharp pencil so as to make a shallow groove for the THREAD LINE on the 8-ply aluminum sheet. Also using a sharp pencil, trace around the top and side of the pattern, so as to indent (groove) the 8-ply foil.
- Remove the pattern, and cut out the 8-ply aluminum foil leaf.
- While holding a straight edge along the indented THREAD LINE, lift up the OPEN EDGE of the 8-ply sheet (keeping all 8 plies together) until this edge is vertical, as illustrated. Remove the straight edge, and fold the 8-ply aluminum along the THREAD LINE so as to make a flat-folded hem.
- Open the flat-folded hem of the finished leaf until the 8-ply leaf is almost flat again, as shown by the pattern, from which the FINISHED-LEAF PATTERN has already been cut.
- Prepare to attach the aluminum-foil leaf to the thread that will suspend it inside the KFM.

*If only heavy duty aluminum foil (sometimes called "extra heavy duty") is available, make 5-ply leaves of the same size, and use the table for the 8-ply KFM to determine radiation dose rates. To make a 5-ply leaf, start by cutting out a piece of foil approximately 4 inches by 4 inches. Fold it to make a 4-ply sheet approximately 2 inches by 2 inches, with one corner exactly square. Next from a single thickness of foil cut a square approximately 2 inches by 2 inches. Slip this square into a 4-ply sheet, thus making a 5-ply sheet. Then make the 5-ply leaf, using the FINISHED-LEAF PATTERN, etc. as described for making an 8-ply leaf.

If no epoxy glue* is available to hold down the hem and prevent the thread from slipping in the hem, cut two pieces of tape (Band-Aid tape is best; next best is masking or freezer tape; next best, Scotch tape). After first peeling off the paper backing of Band-Aid tape, cut each piece of tape 1/8 inch by 1 inch long. Attach these two pieces of tape to the finished 8-ply aluminum leaf with the sticky sides up, except for their ends. As shown by the pattern on the following pattern page, secure 1/8 inch of one end of a tape strip near one corner of the 8-ply aluminum foil leaf by first turning under this 1/8-inch end; that is, with this end's sticky side down. Then turn under the other 1/8-inch-long end, and attach this end below the THREAD LINE. Slant each tape strip as illustrated on Pattern (C).

Be sure you have read through step 18 before you do anything else.

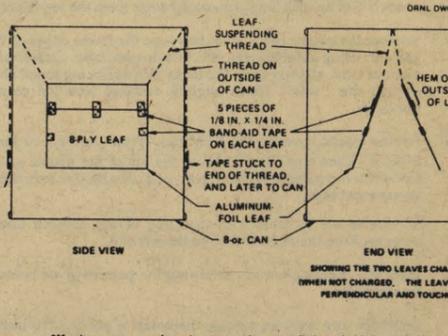
- Cut an 8-1/2-inch piece of fine, unwaxed, very clean thread. (Nylon twisted thread, unwaxed extra-fine nylon dental floss, or silk thread are best in this order. Nylon monofilament "invisible" thread is an excellent insulator but is too difficult for most people to handle.)

Cut out Pattern (C), the guide sheet used when attaching a leaf to its suspending thread. Then tape Pattern (C) to the top of a work table. Cover the two "TAPE HERE" rectangles on Pattern (C) with pieces of tape, each piece the size of the rectangle. Then cut two other pieces of tape each the same size and use them to tape the thread ONTO the guide sheet, on top of the "TAPE HERE" rectangles.

Be very careful not to touch the two 1-inch parts of the thread next to the outline of the finished leaf, since oil and dirt even on clean fingers will reduce the electrical insulating value of the thread between the leaf and the top rim of the can.

- With the thread still taped to the paper pattern and while slightly lifting the thread with a knife tip held under the center of the thread, slip the finished leaf under the thread and into position exactly on the top of the leaf outlined on the pattern paper. Hold the leaf in this position with two fingers.
- While keeping the thread straight between its two taped-down ends, lower the thread but this it sticks to the two plastic strips. Then press the thread against the plastic strips.
- With the point of the knife, hold down the center of the thread against the center of the THREAD LINE of the leaf. Then, with two fingers, carefully fold under the hem and press it almost flat. Be sure that the thread comes out of the corners of the hem. Remove the knife, and press the hem down completely flat against the rest of the leaf.
- Make small marks on the thread at the two points shown on the pattern page. Use a ballpoint pen if available.
- Loosen the second two small pieces of tape from the pattern paper, but leave these tapes stuck to the thread.
- Cut 5 pieces of Band-Aid tape, each approximately 1/8 inch by 1/4 inch, this small.

Use 3 of these pieces of tape to secure the centers of the side edges of the leaf. Place the 3 pieces as illustrated in the SIDE VIEW sketch below.



*If using epoxy or other glue, use only a very little to hold down the hem, to attach the thread securely to the leaf and to glue together any open edges of the plied foil. Most convenient is "one hour" epoxy, applied with a toothpick. Model airplane cement requires hours to harden when applied between sheets of aluminum foil. To make sure no glue stiffens the free thread beyond the upper corners of the finished leaf, put no glue within 1/4 inch of a point where thread will go out from the folded hem of the leaf.

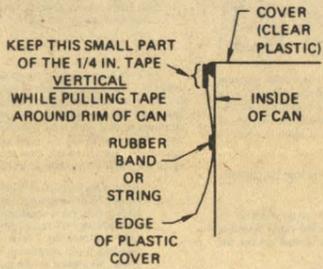
The instructions in step 11 are for persons lacking "one hour" epoxy or the time required to dry other types of glue. Persons using glue instead of tape to attach the leaf to its thread should make appropriate use of the pattern on the following page and of some of the procedures detailed in steps 12 through 18.

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- Use the two small pieces of tape stuck to the ends of a leaf-suspending thread to attach the thread to the outside of the can. Attach the tapes on opposite sides of the can, so as to suspend the leaf inside the can. See END VIEW sketch. Each of the two marks on the attached thread MUST rest exactly on the top of the rim of the can, preferably in two very small notches filed in the top of the rim of the can. Each of these two marks on a thread should be positioned exactly above one of the two points shown on the pattern wrapped around the can. Be sure that the hem-side of each of the two leaves faces outward. See END VIEW sketch.
- Next, the suspending thread of the first leaf should be taped to the top of the rim. Use a piece of Band-Aid only about 1/8 in. x 1/4 in., sticking it to the rim of the can so as barely to cover the thread on the side where the second leaf will be suspended. Make sure no parts of the tapes are inside the can.
- Position and secure the second leaf, being sure that:
 - The smooth sides of the two leaves are smooth (not bent) and face each other and are flush (= "right together") when not charged. See END VIEW sketch and study the first photo illustration, "An Uncharged KFM".
 - The upper edges of the two leaves are suspended side by side and at the same distance below the top of the can.
 - The leaf-suspending threads are taped to the top of the rim of the can (so that putting the cover on will not move the threads).
 - No parts of the leaf-suspending threads inside the can are taped down to the can or otherwise restricted.
 - The leaf-suspending parts of the threads inside the can do not cross over, entangle or restrict each other.
 - The threads come together on the top of the rim of the can, and that the leaves are flat and hang together as shown in the first photo illustration, "An Uncharged KFM".
 - If the leaves do not look like these photographed leaves, make new, better leaves and install them.
- Cover with tape the parts of the threads that extend down the outside of the can, and also cover with more tape the small pieces of tape near the ends of the threads on the outside of the can.
- To make the SEAT, cut a piece of a wooden pencil, or a stick, about one inch long and tape it securely to the side of the can along the center line marked SEAT on the pattern. Be sure the upper end of this piece of pencil is at the same position as the top of the location for the SEAT outlined on the pattern. The top of the SEAT is 3/4 inch below the top of the can. Be sure not to cover or make illegible any part of the table printed on the paper pattern.
- Cut out one of the "Reminders for Operators" and glue and/or tape it to the unused side of the KFM. Then it is best to cover all the sides of the finished KFM with clear plastic tape or varnish. This will keep sticky-tape on the end of an adjustment thread or moisture from damaging the "Reminders" or the table.

XII. Make the Plastic Cover

- Cut out the paper pattern for the cover from the Pattern Page (B).
- From a piece of clear, strong plastic, cut a circle approximately the same size as the paper pattern. (Storm-window polyethylene plastic, 4 mils thick, is best.)
- Stretch the center of this circular piece of clear plastic over the open end of the can, and pull it down close to the sides of the can, making small tucks in the "skirt," so that there are no wrinkles in the top cover. Hold the lower part of the "skirt" in place with a strong rubber band or piece of string. (If another can having the same diameter as the KFM can is available, use it to make the cover -- to avoid the possibility of disturbing the leaf-suspending threads.)
- Make the cover so it fits snugly, but can be taken off and replaced readily.



Just below the top of the rim of the can, bind the covering plastic in place with a 1/4-inch-wide piece of strong tape. (Cloth duct tape is best. If only freezer or masking tape is available, use two thicknesses.)

Keep vertical the small part of the tape that presses against the rim of the can while pulling the length of the tape horizontally around the can so as to bind the top of the plastic cover snugly to the rim. If this small part of the tape is kept vertical, the lower edge of the tape will not squeeze the plastic below the rim of the can to such a small circumference as to prevent the cover from being removed quite easily.

REMEMINDERS FOR OPERATORS	
THE DRYING AGENT INSIDE A KFM IS O.K. IF, WHEN THE CHARGED KFM IS NOT EXPOSED TO RADIATION, THE READINGS DECREASE BY 1 MM OR LESS IN 3 HOURS.	FINDING HOW LONG IT TAKES TO GET A CERTAIN R DOSE: IF THE DOSE RATE IS 1.6 R/HR OUTSIDE AND A PERSON IS WILLING TO TAKE A 6 R DOSE, HOW LONG CAN HE REMAIN OUTSIDE? ANSWER: $6 R \div 1.6 R/HR = 3.75 HR = 3 HOURS AND 45 MINUTES.$
READING: WITH THE READING EYE 17 INCHES VERTICALLY ABOVE THE SEAT, BOTH ON THE MM SCALE THE SEPARATION OF THE LOWER EDGES OF THE LEAVES. IF THE RIGHT LEAF IS AT 10 MM AND THE LEFT LEAF IS AT 7 MM, THE KFM READS 17 MM. NEVER TAKE A READING WHILE A LEAF IS TOUCHING A STOP-THREAD. NEVER USE A KFM READING THAT IS LESS THAN 5MM.	FALLOUT RADIATION GUIDES FOR A HEALTHY PERSON NOT PREVIOUSLY EXPOSED TO A TOTAL RADIATION DOSE OF MORE THAN 100 R DURING A 3-WEEK PERIOD: 6 R PER DAY CAN BE TOLERATED FOR UP TO TWO MONTHS WITHOUT LOSING THE ABILITY TO WORK. 100 R IN A WEEK OR LESS IS NOT LIKELY TO SERIOUSLY SICKEN. 350 R IN A FEW DAYS IS LIKELY TO PROVE FATAL UNDER POST-ATTACK CONDITIONS.
FINDING A DOSE RATE: IF BEFORE EXPOSURE A KFM READS 17 MM AND IF AFTER A 1-MINUTE EXPOSURE IT READS 5 MM, THE DIFFERENCE IN READINGS IS 12 MM, THE ATTACHED TABLE SHOWS THE DOSE RATE WAS 9.6 R/HR DURING THE EXPOSURE.	600 R IN A WEEK OR LESS IS ALMOST CERTAIN TO CAUSE DEATH WITHIN A FEW WEEKS.
FINDING A DOSE: IF A PERSON WORKS OUTSIDE FOR 3 HOURS WHERE THE DOSE RATE IS 2 R/HR, WHAT IS HIS RADIATION DOSE? ANSWER: $3 HR \times 2 R/HR = 6 R.$	

- With scissors, cut off the "skirt" of the plastic cover until it extends only about one inch below the top of the rim of the can.
- Make a notch in the "skirt," about one inch wide, where it fits over the pencil SEAT attached to the can. The "skirt" in this notched area should be only about 5/8 of an inch long, measured down from the top of the rim of the can.
- Remove the plastic cover, and then tape the lower edges of the "skirt," inside and out, using short lengths of 1/4-inch-wide tape. Before securing each short piece of tape, slightly open the tucks that are being taped shut on their edges, so that the "skirt" flares slightly outward and the cover can be readily removed.
- Put the plastic cover on the KFM can. From the Pattern Page (B) cut out the SCALE. Then tape the SCALE to the top of the plastic cover, in the position shown on the pattern for the cover, and also by the drawings. Preferably use transparent tape. Be careful not to cover with tape any of the division lines on the SCALE between 20 on the right and 20 on the left of 0.
- Make the charging-wire by following the pattern given below which is exactly the right size.

Doorbell wire with an outside diameter of about 1/16 inch is best, but any lightweight insulated wire, such as part of a lightweight two-wire extension cord split in half, will serve. The illustrated wire is much thicker than bell wire. To stop tape from possibly slipping up or down the wire, use a very little glue.

If a very thin plastic has been used for the cover, a sticky piece of tape may need to be attached to the end of the bare-ended adjustment thread, so both threads can be used to hold the charging wire in a desired position.

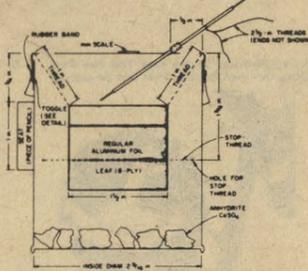
The best tape to attach to an end of one of the adjustment-threads is cloth duct tape. A square piece 3/4 inch by 3/4 inch is the sticky base. To keep this tape sticky (free of paper fibers), the paper on the can should be covered with transparent tape or varnish. A piece about 1/8 inch by 3/4 inch serves to stick under one end of the sticky base, to hold the adjustment-thread. A 3/4 inch by 1-1/4 inch rectangular piece of tape is used to make the finger hold -- important for making adjustments inside a dry-bucket.

With a needle or pin, make a hole in the plastic cover 1/2 inch from the rim of the can and directly above the upper end of the CENTER LINE between the two leaves. The CENTER LINE is marked on the pattern wrapped around the can. Carefully push the CHARGING-WIRE through this hole (thus stretching the hole) until all of the CHARGING-WIRE below its Band-Aid-tape stop is inside the can.

XIII. Two Ways to Charge a KFM

1. Charging a KFM with Hard Plastic Rubbed on Dry Paper.

- Adjust the charging-wire so that its lower end is about 1/16 inch above the upper edges of the aluminum-foil leaves. Use the sticky-tape at the end of one adjustment-thread to hold the charging-wire in this position. Stick this tape approximately in line with the threads suspending the leaves, either on the side of the plastic cover. (If the charging-wire is held loosely by the cover, it may be necessary to put a piece of sticky-tape on the end of each adjustment-thread in order to adjust the charging-wire securely. If a charging-wire is not secure, its lower end may be forced up by the like charge on the leaves before the leaves can be fully charged.)
- Select a piece of Plexiglas, a draftsman's plastic triangle, a smooth plastic ruler, or other piece of hard, smooth plastic. (Unfortunately, not all types of hard plastic can be used to generate a sufficient electrostatic charge.) Be sure the plastic is dry.



For charging a KFM inside a dry-bucket, cut a rectangular piece of hard plastic about 1-1/2 by 5 inches. Sharp corners and edges can be smoothed by rubbing on concrete. To avoid contaminating the charging end with sweaty, oily fingers, it is best to mark the other end with a piece of tape.

- Fold DRY paper (typing paper, writing paper, or other smooth, clean paper) to make an approximate square about 4 inches on a side and about 20 sheets thick. (This many sheets of paper lessens leakage to the fingers of the electrostatic charges to be generated on the hard plastic and on the rubbed paper.)



- Fold the square of paper in the middle, and move the hard plastic rapidly back and forth so that it is rubbed vigorously on the paper in the middle of this folded square of paper is squeezed firmly between thumb and the ends of two fingers. To avoid discharging the charge on the plastic to the fingers, keep them away from the edges of the paper. See photo.

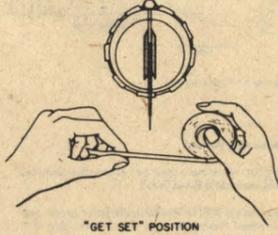
- Move the electrostatically charged part of the rubbed plastic rather slowly past the upper end of the charging-wire, while looking straight down on the KFM. Keep the hard plastic approximately perpendicular to the charging-wire and about 1/4 to 1/2 inch away from its upper end. The charge jumps the spark gaps and charges the leaves of the KFM.

- Pull down on an insulating adjustment-thread to raise the lower end of the charging-wire. (If the charging-wire has been held in its charging position by its sticky-ended adjustment-thread being stuck to the top of the clear plastic cover, to avoid possibly damaging the threads: (1) pull down a little on the bare-ended adjustment-thread; and (2) detach, pull down on, and secure the sticky-ended adjustment-thread to the side of the can, so as to raise and keep the lower end of the charging-wire close to the underside of the clear plastic cover.) Do not touch the charging-wire.

- Put the charging paper and the hard plastic in a container where they will be kept dry -- as in a Mason jar with some drying agent.

2. Charging a KFM from a Quickly Unwound Roll of Tape. (Quick unwinding produces a harmless charge of several thousand volts on the tape.)

- Adjust the charging-wire so that its lower end is about 1/16 inch above the upper edges of the aluminum-foil leaves. Use the sticky-tape at the end of one adjustment-thread to hold the charging-wire in this position. Stick this tape approximately in line with the leaves, either on the side of the can or on the plastic cover. (If the plastic cover is weak, it may be necessary to put a piece of sticky-tape on the end of each adjustment-thread, in order to hold the charging-wire securely. If a charging-wire is not secure, its lower end may be forced up by the like charge on the leaves before the leaves can be fully charged.)



- The sketch shows the "GET SET" position, preparatory to unrolling the Scotch Magic Transparent Tape, P.V.C. electrical tape, or other tape. Be sure to first remove the roll from its dispenser. Some of the other kinds of tape will not produce a high enough voltage.

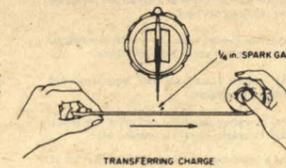
- QUICKLY unroll 10 to 12 inches of tape by pulling its end with the left hand, while the right hand allows the roll to unwind while remaining in about the same "GET SET" position only an inch or two away from the KFM.

- While holding the unwound tape tight, about perpendicular to the charging-wire, and about 1/4 inch away from the end of the charging-wire, promptly move both hands and the tape to the right rather slowly -- taking about 2 seconds to move about 8 inches. The electrostatic charge on the unwound tape "jumps" the spark gaps from the tape to the upper end of the charging-wire and from the lower end of the charging-wire to the aluminum leaves, and charges the aluminum leaves.

Be sure neither leaf is touching a stop-thread.

Try to charge the leaves enough to spread them far enough apart to give a reading of at least 15 mm.

Pull down on an insulating adjustment-thread to raise the lower end of the charging-wire. If the charging-wire has been held in charging position by its sticky-ended adjustment-thread being stuck to the top of the clear plastic cover, it is best first to pull down a little on the bare-ended adjustment-thread, and then to move, pull down on, and secure the sticky-ended adjustment-thread to the side of the can so that the lower part of the charging-wire is close to the underside of the clear plastic cover.



Do not touch the charging-wire.

Rewind the tape tight on its roll, for future use when other tape may not be available.

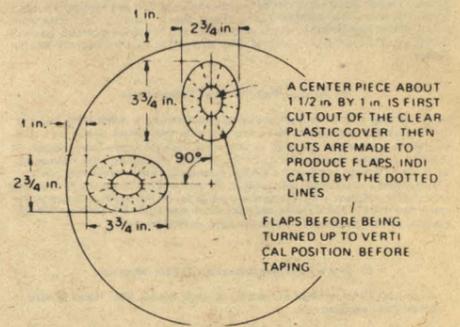
XIV. Make and Use a Dry-Bucket

By charging a KFM while it is inside a dry-bucket with a transparent plastic cover (see illustration), this fallout meter can be charged and used even if the relative humidity is 100% outside the dry-bucket. The air inside the dry-bucket is kept very dry by a drying agent placed on its bottom. About a cupful of anhydrite serves very well. The pieces of this dehydrated gypsum need not be as uniform in size as is best for use inside a KFM, but do not use powdered anhydrite.



A dry-bucket can be readily made in about an hour by proceeding as follows:

- Remove the handle of a large bucket, pot, or can preferably with a top diameter of at least 11 inches. A 4-gallon bucket having a top diameter of about 14 inches is ideal. If the handle-supports interfere with stretching a piece of clear plastic film across the top of the bucket, remove them, being sure no sharp points remain.
- Cut out a circular piece of clear plastic with a diameter about 5 inches larger than the diameter of the top of the bucket. Clear polyethylene 4 mils thick, used for storm windows, etc., is best. Stretch the plastic smooth across the top of the bucket, and tie it in place, preferably with strong rubber bands looped together to form a circle.
- Make a plastic top that fits snugly but is easily removable, by taping over and around the plastic just below the top of the bucket. One-inch-wide cloth duct tape, or one-inch-wide glass-reinforced strapping tape, serves well. When taping, do not permit the lower edge of the tape to be pulled inward below the rim of the bucket.



- Cut two small holes (about 1 inch by 2 inches) in the plastic cover, as illustrated. Then make the radial cuts (shown by dotted lines) outward from the small holes, out to the solid-line outlines of the 3 inch by 4 inch hand-holes, so as to form small flaps.
- Fold the small flaps upward, so they are vertical. Then tape them on their outer sides, so they form a vertical "wall" about 3/4 inch high around each hand-hole.
- Reduce the length of two ordinary plastic bread bags (or similar plastic bags) to a length that is 5 inches greater than the height of the bucket. (Do not use rubber gloves in place of bags; gloves so used result in much more humid outside air being unintentionally pumped into a dry-bucket when it is being used while charging a KFM inside it.)
- Insert a plastic bag into each hand-hole, and fold the edge of the plastic bag about 1/2 inch over the taped vertical "wall" around each hand-hole.
- Strengthen the upper parts of the plastic bags by folding 2-inch pieces of tape over the top of the "wall" around each hand-hole.
- Make about a quart of anhydrite by heating small pieces of wall-board gypsum, and keep this anhydrite dry in a Mason jar or other airtight container with a rubber or plastic sealer.
- Make a circular aluminum-foil cover to place over the plastic cover when the dry-bucket is not being used for minutes to hours. Make this cover with a diameter about 4 inches greater than the diameter of the top of the bucket, and make it fit more snugly with an encircling loop of rubber bands, or with string. Although not essential, an aluminum-foil cover reduces the amount of water vapor that can reach and pass through the plastic cover, thus extending the life of the drying agent.

11. Charge a KFM inside a dry-bucket by:

- Taking off wrist watch and sharp-pointed rings that might tear the plastic bags.
- Placing inside the dry-bucket:
 - About a cup of anhydrite or silica gel;
 - the KFM, with its charging-wire adjusted in its charging position; and
 - dry, folded paper and the electrostatic charging device, best a 5-inch-long piece of Plexiglas with smoothed edges, to be rubbed between dry paper folded about 4 inches square and about 20 sheets thick. (Unrolling a roll of tape inside a dry-bucket is an impractical charging method.)
- Replacing the plastic cover, that is best held in place with a loop of rubber bands.
- Charging the KFM with your hands inside the plastic bags, operating the charging device. Have another person illuminate the KFM with a flashlight. When adjusting the charging-wire, move your hands very slowly. See the dry-bucket photos.

12. Expose the KFM to fallout radiation either by:

- Leaving the KFM inside the dry-bucket while exposing it to fallout radiation for one of the listed time intervals, and reading the KFM before and after the exposure while it remains inside the dry-bucket. (The reading eye should be a measured 12 inches above the SEAT of the KFM, and a flashlight or other light should be used.)
- Taking the charged KFM out of the dry-bucket to read it, expose it, and read it after the exposure. (If this is done repeatedly, especially in a humid shelter, the drying agent will not be effective for many KFM chargings, and will have to be replaced.)

XV. How to Use a KFM after a Nuclear Attack

A. Background Information

If during a rapidly worsening crisis threatening nuclear war you are in the place where you plan to take shelter, postpone studying the instructions following this sentence until after you have:

- built or improved a high-protection-factor shelter (if possible, a shelter covered with 2 or 3 ft of earth and separate from flammable buildings), and
- made a KAP (homemade shelter-ventilating pump) if you have the instructions and materials, and
- stored at least 15 gallons of water for each shelter occupant if you can obtain containers.

Having a KFM or any other dependable fallout meter and knowing how to operate it will enable you to minimize radiation injuries and possible fatalities, especially by skillfully using a high-protection-factor fallout shelter to control and limit exposures to radiation. By studying this section you first will learn how to measure radiation dose rates (roentgens per hour = R/hr), how to calculate doses (R) received in different time intervals, and how to determine time intervals (hours and/or minutes) in which specified doses would be received. Then this section lists the sizes of doses (number of R) that the average person can tolerate without being sickened, that he is likely to survive, and that he is likely to be killed by.

Most fortunately for the future of all living things, the decay of radioactivity causes the sandlike fallout particles to become less and less dangerous with the passage of time. Each fallout particle acts much like a tiny X ray machine would if it were made so that its rays, shooting out from it like invisible light, became weaker and weaker with time.

Contrary to exaggerated accounts of fallout dangers, the radiation dose rate from fallout particles when they reach the ground in the areas of the heaviest fallout will decrease quite rapidly. For example, consider the decay of fallout from a relatively nearby, large surface burst, at a place where the fallout particles are deposited on the ground one hour after the explosion. At this time one hour after the explosion, assume that the radiation dose rate (the best measure of radiation danger at a particular time) measures 2,000 roentgens per hour (2,000 R/hr) outdoors. Seven hours later the dose rate is reduced to 200 R/hr by normal radioactive decay. Two days after the explosion, the dose rate outdoors is reduced by radioactive decay to 20 R/hr. After two weeks, the dose rate is less than 2 R/hr. When the dose rate is 2 R/hr, people can go out of a good shelter and work outdoors for 3 hours a day, receiving a daily dose of 6 roentgens, without being sickened.

In places where fallout arrives several hours after the explosion, the radioactivity of the fallout will have gone through its time period of most rapid decay while the fallout particles were still airborne. If you are in a location so distant from the explosion that fallout arrives 8 hours after the explosion, two days must pass before the initial dose rate measured at your location will decay to 1/10 its initial intensity.

B. Finding the Dose Rate

1. Reread Section IV, "What a KFM Is and How It Works." Also reread Section XIII, "Two Ways to Charge a KFM," and actually do each step immediately after reading it.
2. Charge the KFM, raise the lower end of its charging-wire and read the apparent separation of the lower edges of its leaves while the KFM rests on an approximately horizontal surface. Never take a reading while a leaf is touching a stop-thread.
3. Expose the KFM to fallout radiation for one of the time intervals shown in the vertical columns of the table attached to the KFM. (Study the following table.) If the dose rate is not known even approximately, first expose the fully charged KFM for one minute. For dependable measurements outdoors, expose the charged KFM about three feet above the ground. For most exposures, connect the KFM to a stick or pole (best done with two rubber bands), and expose it about three feet above the ground. Be careful not to tilt the KFM too much.
4. Read the KFM after the exposure, while the KFM rests on an approximately horizontal surface.

5. Find the time interval that gives a dependable reading -- by exposing the fully charged KFM for one or more of the listed time intervals until the reading after the exposure is:
 - (a) Not less than 5 mm.
 - (b) At least 2 mm less than the reading before the exposure.
6. Calculate by simple subtraction the difference in the apparent separation of the lower edges of the leaves before the exposure and after the exposure. An example: If the reading before the exposure is 18 mm and the reading after the exposure is 6 mm, the difference in readings is 18mm - 6 mm = 12 mm.
7. If an exposure results in a difference in readings of less than 2 mm, recharge the KFM and expose it again for one of the longer time intervals listed. (If there appears to be no difference in the readings taken before and after an exposure for one minute, this does not prove there is absolutely no fallout danger.)
8. If an exposure results in the reading after the exposure being less than 5 mm, recharge the KFM and expose it again for one of the shorter time intervals listed.

9. Use the table attached to the KFM to find the dose rate (R/hr) during the time of exposure. The dose rate (R/hr) is found at the intersection of the vertical column of numbers under the time interval used and of the horizontal line of numbers that lists the calculated difference in readings at its left end.

TABLE USED TO FIND DOSE RATES (R/HR) FROM KFM READINGS

DIFFERENCE BETWEEN THE READING BEFORE EXPOSURE AND THE READING AFTER EXPOSURE IN "STANDARD" MILLIMETERS

DIFF. IN READING (MM)	TIME INTERVAL OF AN EXPOSURE				
	15 SEC	1 MIN	1 1/2 MIN	2 MIN	1 HR
2 mm	6.2	1.6	0.4	0.1	0.03
4 mm	12	3.1	0.8	0.2	0.06
6 mm	18	4.6	1.2	0.3	0.09
8 mm	25	6.2	1.6	0.4	0.10
10 mm	31	7.7	2.0	0.5	0.13
12 mm	37	9.2	2.3	0.6	0.15
14 mm	43	11	2.7	0.7	0.18

An example: If the time interval of the exposure was 1 MIN, and the difference in readings was 12 mm, the table shows that the dose rate during the time interval of the exposure was 9.2 R/HR (9.2 roentgens per hour).

Another example: If the time interval of the exposure was 15 SEC, and the difference in readings was 11 mm, the table shows that the dose rate during the exposure was halfway between 31 R/HR and 37 R/HR that is, the dose rate was 34 R/hr.

10. Note in the table that if an exposure for one of the listed time intervals causes the difference in readings to be 2 mm or 3 mm, then an exposure 4 times as long reveals the same dose rate. An example: If a 1-min exposure results in a difference in readings of 2 mm, the table shows the dose rate was 1.6 R/hr; then if the KFM is exposed for 4 minutes at this same dose rate of 1.6 R/hr, the table shows that the resultant difference in readings is 8 mm.
11. If the dose rate is found to be greater than 0.2 R/hr and time is available, recharge the KFM and repeat the dose-rate measurement -- to avoid possible mistakes.

The longer exposure results in a more accurate determination of the dose rate.

C. Calculating the Dose Received

The dose of fallout radiation -- that is, the amount of fallout radiation received -- determines the harmful effects on men and animals. Being exposed to a high dose rate is not always dangerous -- provided the exposure is short enough to result in only a small dose being received. For example, if the dose rate outside an excellent fallout shelter is 1200 R/hr and a shelter occupant goes outside for 30 seconds, he would be exposed for 1/2 of 1 minute, or 1/2 of 1/60 of an hour, which equals 1/120 hour. Therefore, since the dose he would receive if he stayed outside for 1 hour would be 1200 R, in 30 seconds he would receive 1/120 of 1200, which equals 10 R (1200 R divided by 120 = 10 R). A total daily dose of 10 R (10 roentgens) will not cause any symptoms if it is not repeated day after day for a week or more.

In contrast, if the average dose rate of an area were found to be 12 R/hr and if a person remained exposed in that particular area for 24 hours, he would receive a dose of 288 R (12 R/hr x 24 hr = 288 R). Even assuming that this person had been exposed previously to very little radiation, there would still be a serious risk that this 288 R dose would be fatal under the difficult conditions that would follow a heavy nuclear attack.

Another example: Assume that three days after an attack the occupants of a dry, hot cave giving almost complete protection against fallout are in desperate need of water. The dose rate outside is found to be 20 R/hr. To backpack water from a source 3 miles away is estimated to take 2-1/2 hours. The cave occupants estimate that the water backpackers will receive a dose in 2-1/2 hours of 50 R (2.5 hr x 20 R/hr = 50 R). A dose of 50 R will cause only mild symptoms (nausea in about 10% of persons receiving a 50 R dose) for persons who previously have received only very small doses. Therefore, one of the cave occupants makes a rapid radiation survey for about 1-1/2 miles along the proposed route, stopping to charge and read a KFM about every quarter of a mile. He finds no dose rates much higher than 20 R/hr.

So, the cave occupants decide the risk is small enough to justify some of them leaving shelter for about 2-1/2 hours to get water.

D. Estimating the Dangers from Different Radiation Doses

Fortunately, the human body -- if given enough time -- can repair most of the damage caused by radiation. An historic example: A healthy man accidentally received a daily dose of 9.3 R (or somewhat more) of fallout-type radiation each day for a period of 106 days. His total accumulated dose was at least 1000 R. A dose of one thousand roentgens, if received in a few days, is almost three times the dose likely to kill the average man if he receives the whole dose in a few days and after a nuclear attack cannot get medical treatment, adequate rest, etc. However, the only symptom this man noted was serious fatigue.

The occupants of a high-protection-factor shelter (such as a trench shelter covered with 2 or 3 feet of earth and having crawlway entrances) would receive less than 1/200 of the radiation dose they would receive outside. Even in most areas of very heavy fallout, persons who remain continuously in such a shelter would receive a total accumulated dose of less than 25 R in the first day after the attack, and less than 100 R in the first two weeks. At the end of the first two weeks, such shelter occupants could start working outside for an increasing length of time each day, receiving a daily dose of no more than 6 R for up to two months without being sickened.

To control radiation exposure in this way, each shelter must have a fallout meter, and a daily record must be kept of the approximate total dose received each day by every shelter occupant, both while inside and outside the shelter. The long-term penalty which would result from a dose of 100 R received within a few weeks is much less than many Americans fear. If 100 average persons received an external dose of 100 R during and shortly after a nuclear attack, the studies of the Japanese A-bomb survivors indicate that no more than one of them is likely to die during the following 30 years as a result of this 100 R radiation dose. These delayed radiation deaths would be due to leukemia and other cancers. In the desperate crisis period following a major nuclear attack, such a relatively small shortening of life expectancy during the following 30 years should not keep people from starting recovery work to save themselves and their fellow citizens from death due to lack of food and other essentials.

A healthy person who previously has received a total accumulated dose of no more than 100 R distributed over a 2-week period should realize that:

- 100 R, even if all received in a day or less, is unlikely to require medical care--provided during the next 2 weeks a total additional dose of no more than a few R is received.
- 350 R received in a few days or less is likely to prove fatal after a large nuclear attack when few survivors could get medical care, sanitary surroundings, a well-balanced diet, or adequate rest.
- 600 R received in a few days or less is almost certain to cause death within a few days.

E. Using a KFM to Reduce the Doses Received Inside a Shelter

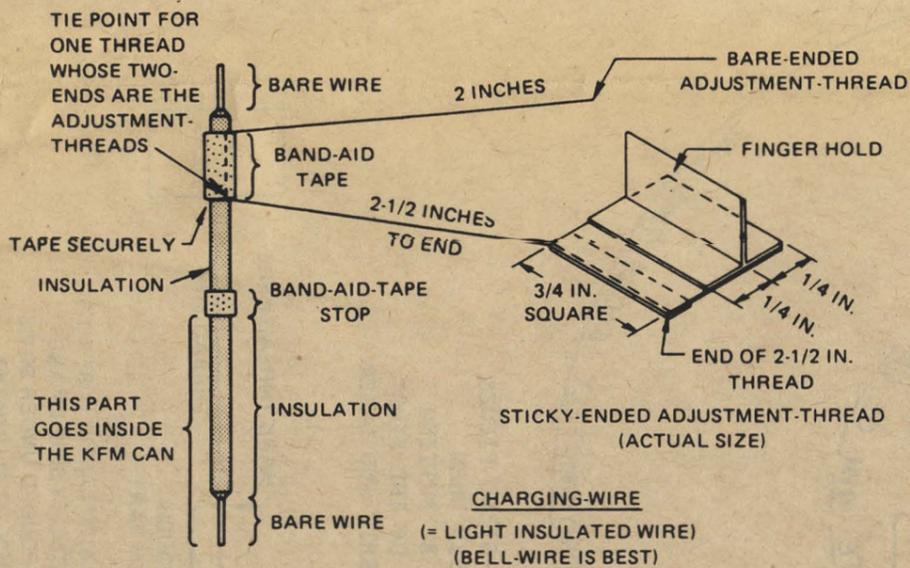
Inside most shelters, the dose received by an occupant varies considerably, depending on the occupant's location. For example, inside an expedient covered-trench shelter the dose rate is higher near the entrance than in the middle of the trench. In a typical basement shelter the best protection is found in one corner. Especially during the first several hours after the arrival of fallout, when the dose rates and doses received are highest, shelter occupants should use their fallout meters to determine where to place themselves to minimize the doses they receive. They should use available tools and materials to reduce the doses they receive, especially during the first day, by digging deeper (if practical) and reducing the size of openings by partially blocking them with earth, water containers, etc. -- while maintaining adequate ventilation. To greatly reduce the danger from fallout particles entering the body through nose or mouth, shelter occupants should at least cover their nose and mouth with a towel or other cloth while the fallout is being deposited outside their shelter.

The air inside an occupied shelter often becomes very humid. If a good flow of outdoor air is flowing into a shelter -- especially if pumped by briefly operating a KAP or other ventilating pump -- a KFM usually can be charged at the air intake of the shelter room without putting it inside a dry-bucket. However, if the air to which a KFM is exposed has a relative humidity of 90% or higher, the instrument cannot be charged, even by quickly unrolling a roll of tape.

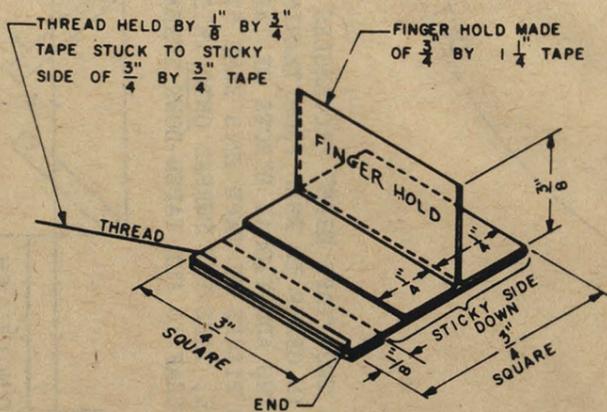
In extensive areas of heavy fallout, the occupants of most home basements, that provide inadequate shielding against heavy fallout radiation, would be in deadly danger. By using a dependable fallout meter, occupants would find that persons lying on the floor in certain locations would receive the smallest doses, and that, if they improvise additional shielding in these locations, the doses received could be greatly reduced. Additional shielding can be provided by placing a double layer of doors, positioned about two feet above the floor and strongly supported near their ends, and by putting books, containers full of water and other heavy objects on top of these doors. Or, if tools are available, breaking through the basement floor and digging a shelter trench will greatly increase available protection against radiation. If a second expedient ventilating pump, a KAP, is made and used as a fan, such an extremely cramped shelter inside a shelter usually can be occupied by several times as many persons.

END OF INSTRUCTIONS

EXACT SIZE



STICKY-ENDED ADJUSTMENT-THREAD (OVERSIZED DRAWING)



APPENDIX

HIGHLY RECOMMENDED READING

LIFE AFTER DOOMSDAY BY BRUCE CLAYTON Ph.D

This is an essential and extremely well documented study covering every major topic required to fully plan your survival strategy in the prospect of nuclear war.

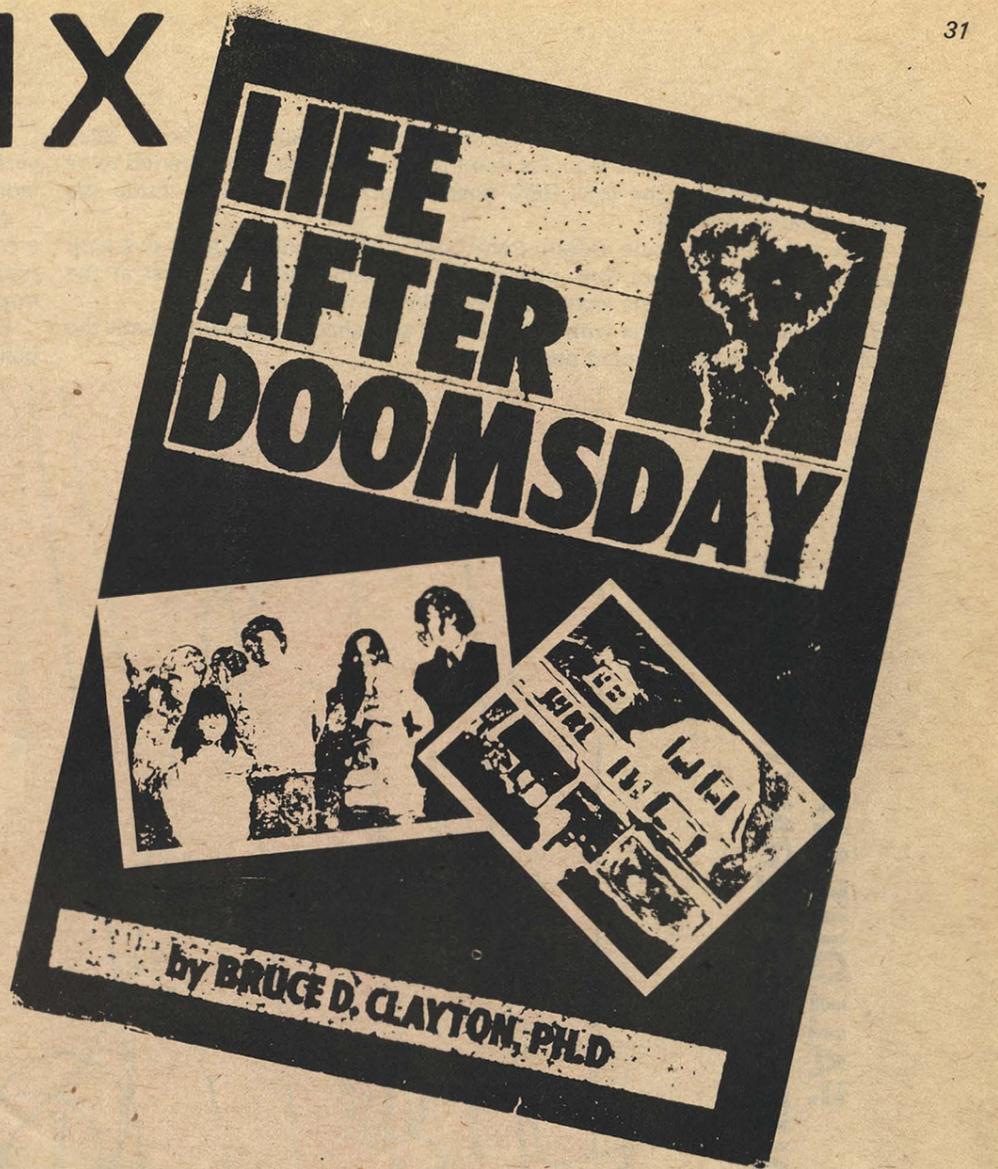
It details in language you can understand what the effects of nuclear weapons are; how they will affect the ecology, the economic and social structure, and people. It contains detailed fallout charts, maps and diagrams. It gives addresses and sources for additional material like foods, water purifying agents, distributors, etc.

While dealing with these effects as they apply to continental U.S.A., all the information can be applied to your Canadian surroundings.

This book is an indispensable tool for studying the options you have as a possible victim or survivor in a total nuclear exchange.

Available for \$19.95 plus \$4 postage [U.S. funds] from:

PALADIN PRESS, P.O. BOX 1107, BOULDER* COLORADO, 80306, U.S.A.



RECOMMENDED:

NUCLEAR WAR SURVIVAL SKILLS by Cresson Kearny

This man was an Oak Ridge, Tennessee nuclear engineer-cum-civil defence specialist, and his book is choc full of diagrams, how-to material on making a fallout meter, air pump, etc.

Worthwhile. It is available at \$9.95 plus \$2 postage U.S. from:

CAROLINE HOUSE PUBLISHERS, 920 W. Industrial Dr., Aurora, Ill., 60506

RECOMMENDED

the Effects of Nuclear Weapons, edited by Samuel Glasstone.

The classic work on radiation effects, blast patterns, scientific explanations for nuclear causes and effects etc. A great deal on fallout and fallout patterns was researched from actual test explosions.

An indispensable reference work.

Available for \$8.50 U.S. from:

Government Printing Office, Washington, D.C., 20510

RECOMMENDED

Pulling Through by Dean Ing

A fictional story dealing with nuclear war is the first half of the book, and its ok, but the really useful stuff is the later half of the book, which is all facts and diagrams on emergency nuclear war survival preparations.

Found in science-fiction sections of most bookstores at \$2.95 or available from ACE BOOKS, 200 Madison Ave., N.Y., N.Y., 10016.

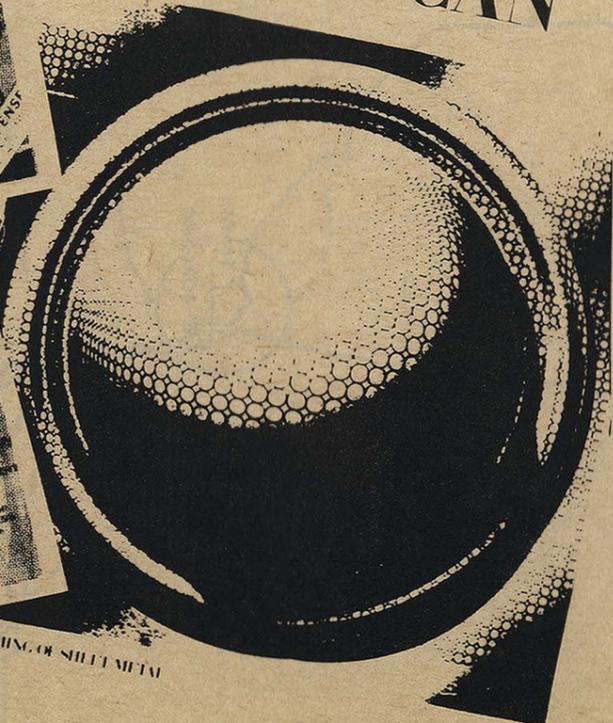
RECOMMENDED FOR USE IN NUCLEAR WEAPONS POLITICAL INFORMATION:

NUCLEAR WAR, WHAT'S IN IT FOR YOU?

A \$3.50 paperback available in all bookstores in the city. Contains excellent definitions, charts, easy to understand scenarios, etc. It is succinct and accurate without any overt biases.



SCIENTIFIC AMERICAN



FORMING OF SHEET METAL

November 1976 \$1.50

RECOMMENDED:

SURVIVE MAGAZINE

Although a hard-core survivalist magazine, it regularly has good articles on fallout, radiation detection, food storage, shelter building, energy producing, etc.

Available at MULTI-Mag on Dundas St. (downtown), publishes monthly or is available by subscription from: SURVIVE MAGAZINE, P.O. BOX 311, Martinsville, New Jersey, 08836.

Recommended Magazine material:

article: Where would You Be the Day After Doomsday?, by Bruce Clayton, REASON Magazine, August 1982

article: 'Limited Nuclear War' by Sidney Drell, November 1976 SCIENTIFIC AMERICAN. This is a classic on fallout patterns. Available at used bookstores including City Lights on Richmond St.

EXCELLENT REFERENCE MATERIAL:

Encyclopedia Americana, volume 20, Nuclear Weapons, excellent descriptions. The encyclopedia Britannica is much less useful unless you are already a nuclear physicist.

MODERATELY USEFUL

FREEZE by Senators Kennedy & Hatfield

Much of the book is political sentiment (anti-nuclear movement promotion) and the appendix is propoganda, but many statistics are quite useful, as are many descriptions of targeting, warheads, etc. Some good to be derived here. Available at \$3.50 from BANTAM BOOKS* AT ANY BOOKSTORE.

NOT VERY USEFUL

Living With Nuclear Weapons by the Harvard Nuclear Study Group

Too complex, not divided into succinct chapters, inadequate charts. Needs cleaner, clearer presentation of facts. Not as good as 'Nuclear War, What's In It For You?'

Available at all bookstores, \$3.50.

NOT RECOMMENDED

Future Fire, Weapons for the Apocalypse by Ann-Marie Cunningham and Marianna Fitzpatrick

This oversized \$10.75 paperback is slick, glossy and intimidating by it's flashy appearance, but it never gets past the gloss and cliché-ridden 'quotable quotes' school of journalism. A few good criticisms and descriptions are there, if you already know how to sort the wheat from the chaff. Presents each subject too briefly and contains too many redundant illustrations.

Available at all bookstores.

Assuming surface bursts (one-megaton) at the Wurtsmith Air Force Base (Oscoda, Michigan) and the Douglas Point Nuclear Reactor (also referred to as the 'Bruce Reactor'), the total REM dose for a month is shown inside the relevant paths of fallout.

Dark red areas indicate fallout from both surface bursts (they overlap); medium red is the fallout from only one burst (upper path, the burst at the Douglas Point reactor, the lower path from Wurtsmith AFB).

Total dosage in a shelter with a PF of 40 is also shown directly beneath the total dose for an unprotected person.

Although it is unlikely Sarnia, London, Detroit-Mount Clemens will be hit by surface bursts (it is likely they will be hit by air bursts); fallout patterns are indicated just in case.

Areas north of Lucan to Blyth are safest areas (Lake Huron to Kitchener area). Next best thing is more than fifty miles from any target with a shelter protection factor of 40. Other pockets may in fact be safe, but in planning, one must choose the area with greatest potential to receive no or little fallout.

Circled areas are anticipated targets and areas affected by an attack on those points.

FALLOUT MAP OF SOUTHWESTERN ONTARIO

