

# BARATA ELETRICA

BARATA ELETRICA, numero 9  
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"A>gzip -d arquivo.gz

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mande carta (nao exagere, o pessoal e' gente fina, mas nao e' escravo, nao  
esquecam aqueles encantamentos como "please" , "por favor" e "obrigado"):

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CREDITOS II :

Sem palavras para agradecer ao pessoal que se ofereceu para ajudar na

distribuicao do E-zine, como os voluntarios acima citados, e outros, como o sluz@ufba.br (Sergio do ftp.ufba.br), e o delucca do www.inf.ufsc.br. Igualmente para todos os que me fazem o favor de ajudar a divulgar o Barata em todas as BBSes pelo Brasil afora.

OBSERVACAO: Alguns mails colocados eu coloquei sem o username (praticamente a maioria) por levar em conta que nem todo mundo quer passar por colaborador do BE. Aqueles que quiserem assumir a carta, mandem um mail para mim e numa proxima edicao eu coloco.

#### INTRODUCAO:

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Bom, gente. Demorou, mas saiu. Ta' cada vez mais irregular a saida do Barata Eletrica. Mas tem que ser ou assim ou parar. Parar ta' meio dificil. Quem vai fazer a cabeça da mocada? A maioria dos jornalistas nao manja nada do que esta' acontecendo na Internet, nao manja os topicos, para nao falar de Hacker Underground. Que e' uma forca positiva na rede, apesar do que algumas vezes a imprensa (norte-americana) diz. Basta ver que a Usenet, foi obra nao de uma IBM ou Microsoft da vida, mas subproduto do programador que fez o sistema operacional Unix, um sistema aberto e possivel de ser implementado em qualquer tipo de computador usando qualquer chip. Um tempo depois, quando a Internet ainda era do Departamento de Defesa (DoD), estudantes descontentes com o fato de que sua Universidade nao tinha os contatos (Quem Indica) nem a grana para participar da ARPANET, eles arregacaram as mangas e fizeram a hoje conhecida como USENET. Ninguem se lembra que foram individuos isolados e nao grandes multinacionais que colocaram os computadores ao alcance do publico. Mas isso e' outra historia.

Para quem nao sabe, minha conta rodrigde@usp.br nao esta' disponivel. Pintou uma historia bem cabeluda e pra simplificar, um arquivo, contendo o texto "Hacker Crackdown" do Bruce Sterling foi confundido com o software "crack". Eu tinha abreviado o nome do livro e compactado. Alguem viu o arquivo crack.gz e .. congelou minha conta. Isso foi o que me contaram. Primeiro me mandaram convidar a pessoa que assinou embaixo p. testemunhar na hora de provar se o arquivo era ou nao perigoso p. integridade do sistema. Depois me falaram que bastava um documento explicando a "raison d'etre" do arquivo e assinatura do meu superior. Agora estou esperando a pessoa que coordena o CCE, a sra. Prof. Dra. M?????? J???????? C????? ler meu officio (data: 7/02/96) e reativar minha conta. Se reativar. Quando penso no trabalho que tenho p. conservar o meu zine inofensivo, no tanto de fas que tenho, entrevista p. jornal, (pra quem nao sabe, saiu um artigo sobre hackers no Jornal da Tarde 27/02/96 e no Diario de Pernambuco, com a minha foto, inclusive) atraso no meu final de curso, cartas expressando admiracao de Web-masters de varios lugares do Brasil, editores de zines dando a maior forca, fica claro o porque de escrever artigo sobre censura n rede. Mas tudo bem. Vou esperar com paciencia. A pessoa que tomou a iniciativa de congelar minha conta deve ter razao para os grilos dela e os grilos so' cantam na cabeça do dono.

Claro que isso me atrapalhou um pouco. To descansando muito mais no meu emprego, por conta desse atraso e me curando do habito de ficar duas horas por dia so' gerenciando as listas que gerenciava. A mulher que me deu a noticia do porque travaram minha conta quase morreu de rir quando falei: "vai ver que e' pro meu proprio bem". Chato vai ficar pro Izar, a quem prometi publicar uma carta sobre o break-in na Unicamp. Esqueci de falar um lance: e' que a historia toda comecou quando suspeitei de que alguem havia entrado na minha conta, alguem ou que roubou minha senha ou tinha super-usr power.. e fez porcaria p. eu saber que alguem havia estado la'. Foi depois disso e' que foram examinar o que tinha acontecido na minha conta e nao sei

viram o arquivo de nome crack.gz. Ai, congelaram, explicaram porque, entreguei o oficio com minha versao e espero que tudo isso acabe logo.

Enquanto isso, qual nao e' minha satisfacao em ver que o universo literario na rede esta' aumentando e mais zines estao surgindo incluindo outro hacker zine muito bom, o hack.br. Leiam a lista na secao de dicas.

Por ultimo, um recado a todos aqueles que me escrevem pedindo orientacao para ser hackers eles mesmos: leiam o Barata Eletrica e trilhem seu proprio caminho. NAO ME ESCREVAM PEDINDO REFERENCIA SOBRE O SATAN e/ou QUALQUER SOFTWARE DE QUEBRAR SENHAS. NAO SEJAM PENTELHOS. Minha conta esta' sendo monitorada. Isso significa que o pessoal provavelmente le minhas cartas e avisa pro Sysop do lugar onde o individuo tem a conta que fulano tem interesse em fazer tal coisa. Eu nao envio dicas, truques ou explicacoes sobre vandalismo eletronico. Ponto final.

Pode ser que haja gente que faca isso. Sei la. Quem quiser, que espere ate' eu marcar o proximo encontro de hackers, apareca la' e torca p. algum cara que venha atenda seu pedido. Ou peca p. lista hackers. Nao me queima o filme com meu Sysop. Queime voce com o seu, se quiser.

#### INTRODUCAO

TENDINITE: VOCE AINDA VAI TER UMA..

A QUESTAO DA CENSURA NA REDE

THE SOCIAL FORCES BEHIND THE DEVELOPMENT OF USENET

BULGARIAN VIRUS FACTORY (CONTINUACAO)

PODE ACONTECER COM VOCE (SCARRY TALE)

MURPHY LAW (aplicada a computacao)

NOTICIAS - DICAS - CARTAS

BIBLIOGRAFIA

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TENDINITE: VOCE AINDA VAI TER UMA..

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A coisa comeca de uma forma meio sutil. Primeiro e' uma pontada, um pequeno incomodo no cotovelo ou nas maos, depois de um dia de trabalho. Coisa facil de ignorar, vai ver que e' uma frescura ou distensao daquele objeto pesado que ajudou a carregar, semana passada. Amanha ou depois, se nao passar, vai no medico, que tambem pode acabar receitando um analgesico e .. ta' limpo, pronto pra outra. Durante meses, volta e meia, pinta esse incomodo nas maos, mas tem tanto trabalho p. fazer que nem e' bom parar pra pensar. Nunca da' tempo. Ate' que a dor aumenta um pouquinho. Agora ta' nas omoplatas. Tudo bem, to fumando muito, deve ser o pulmao. Ou entao e' falta de exercicio, precisa de ferias, fazer esporte. O preco de ficar velho. A gente trabalha duro, o corpo ta' reclamando, so' isso. Ai', um dia, aquele dia, tchan-tchan-tchan. Voce sente um choque eletrico ao bater uma tecla. Tenta de novo: Aiiiiiiiiiii!!! Teus amigos te perguntam o que foi? Ta' com frescura? Quer folgar mais cedo, e'... tem servico p. fazer, meu, ta' pensando o que? E, finalmente, alguem, com quem voce nem falava, que volta e meia era chamado de "preguicoso profissional", "o cara do atestado", vem falar contigo, pergunta umas coisas, te chama de lado e fala pra voce ir ver fulano. Fulano e' um ortopedista que diagnostica: TENDINITE! TENOCINOVITE! SINDROME DE TUNEL CARPAL! Voce nunca mais esquece esse dia.. o primeiro dia do resto de sua vida convivendo com o perigo da aposentadoria precoce por invalidez.

Algumas pessoas tem mais sorte, se preocupam mais cedo com o lance. Outras, chegam a sofrer dores atrozes tentando abrir um vidro de Xampu. Aquilo que alguns chamam de vida sexual, acaba. No caso da sindrome de Tunel Carpal, todos os objetos sao pesados demais para segurar ou duros demais para apertar. Este tipo de lesao e' simples: o nervo e' lesado por

excesso de esforço repetitivo. Não ter vida sedentária, fazer musculação, ajuda como prevenção. Assim como uma coisa que cursinho de computação nunca ensina, uma postura correta no teclado. 10 minutos de descanso, após 50 de trabalho no micro. Evitar jornadas de mais de cinco horas de trabalho. Dar umas voltas de vez em quando. Arrumar uma boa cadeira pra sentar, e observar uma boa postura. Usar teclado ergonômico, ter um ângulo de 45 no cotovelo (que deve estar colado ao corpo) para digitar. Etc, etc

So' gente que já passou pelo problema, pode realmente dar as melhores dicas. A coisa não é privativa dos digitadores. Tudo depende da tensão com que o sujeito bate no teclado (suave ou como um martelo), e da ansiedade no trabalhar com a máquina. Professores têm tendinite nos ombros, de tanto executar o movimento de limpar o quadro negro. Empregadas têm isso, de tanto passar roupa. Bancários também, de tanto digitar números. Quando os primeiros computadores chegaram no Brasil, isso ficou conhecido como doença de digitador. Algumas firmas davam o curso de digitação para a pessoa .. quando ela estava sentindo dores nas mãos, ia p. médico da empresa, pedia transferência, era posta na rua. Deu um bafafa', até que o Ministério do Trabalho tomou algumas providências sobre o lance. Mas até na construção civil esse tipo de coisa acontece.

#### Algumas doenças relacionadas ao trabalho:

\* Lesões por esforço repetitivo: tenossinovite, tendinite, miosite (inflamação de tendões, nervos e músculos), bursite, cervicobraquialgia, artrose

\* Síndrome do túnel do Carpo: doença que acomete a região do punho e atinge o nervo mediano. Também tem entre suas vítimas pessoas que executam movimentos repetitivos.

\* Síndrome de Quervain: doença que compromete o movimento dos tendões do polegar. Mais uma vez, os movimentos repetitivos são a causa do problema.

\* Artrose, escoliose, lombalgia: inflamações das articulações da coluna vertebral, que afetam pessoas que passam muito tempo numa mesma posição, em geral inadequada.

\* Irritação nos olhos: atingem pessoas que ficam muitas horas diante do vídeo ou que praticam atividades que exijam grande acuidade visual, em geral sob iluminação incorreta

\* Problemas auditivos e emocionais: afeta quem trabalha em ambiente com excesso de ruído, geralmente acima de 60 decibéis, ou em atividades estressantes e que exijam muita concentração.

(matéria do Estado de São Paulo - 19/09/993 - A30)

O chato da coisa é que o diagnóstico da(s) doença(s) ligadas a movimentos repetitivos depende da pessoa. No caso de um fucador de micro, qualquer formigamento que aparecer no punho, braço ou ombro, não tem alternativa, é melhor ir imediatamente ao ortopedista. Amanha pode ser tarde demais. O normal é a pessoa ir ignorando o incômodo, até que ele fique insuportável. So' que, aí, as chances de sarar a coisa por completo, são menores. Criança e adolescente que ficam brincando de videogame direto também pega este tipo de doença.

#### Alguns exemplos:

Fui acompanhar um amigo meu lá na triagem do H.U. para este tipo de coisa. De seis pessoas, quatro eram tenocinovite. Um era sambista amador, que tinha profissionalizado um mês antes da dor ficar insuportável. 8 horas por dia durante alguns anos, num boteco. Ficava direto no batuque, sem pedir descanso. Achava um barato. Legal mesmo deve ter sido a injeção de antibiótico no nervo inflamado. As vezes, o nervo machucado infecciona e so' melhora com injeção do medicamento no próprio local. Ele disse que o

medico foi "tateando" com a agulha ate' achar a infeccao. Chegou a chorar de dor. O braco de alguem com tendinite em estagio avancado fica inflamado, duro em varias partes. Carregar uma sacola de supermercado fica dificil e ate' deixar o braco solto, "e' como carregar dois pesos de chumbo". Dormir em cima do mesmo, impossivel. E'licenca medica de seis meses a um ano na certa. Isso se a pessoa conseguir dirigir o carro ate' o trabalho, por exemplo: as maos nao tem forca p fazer curvas fechadas com o volante. Castigo? A mulher que me contou sua experiencia disse que achava que as licencas medicas de uma amiga eram um "truque", uma frescura para faltar ao trabalho. Ai, por um problema no orcamento, tempos depois, cortaram metade do pessoal, mas a quantidade de trabalho continuou a mesma. O resultado foi esse. O meu amigo net-surfava direto. Ta fazendo fisioterapia, agora. Mas fez a coisa certa: foi atras enquanto o lance era so' "frescura".

E o fucador de micro?

Como isso afeta o fucador de micro? Conheco um cara que continua fucando, normalmente. Ele trata, melhora e volta. Me disse que malhando, a coisa diminuiu um pouco. A maioria dos atingidos da um jeito de tentar continuar trabalhando, mesmo com isso. Enfaixam os bracos e mandam ver. Ou isso ou passar fome. "A falta de grana e' a raiz de todos os males" (Tolkien). Mas quando a doenca era coisa nova no Brasil, aconteciam casos em que os digitadores eram contratados, desenvolviam a doenca e eram postos na rua, inutilizados para o trabalho. Hoje existem portarias regulamentando a coisa. Pra digitador e' mais facil conversar com o chefe a respeito. Acontece muito. A pessoa aprende a digitar, mas nao apende a posicao correta das maos e do corpo. Os programadores tem um pouco mais de sorte, porque e' um trabalho mais intelectual, pode ficar mais tempo longe do teclado. Mas existem casos de verdadeiros "monstros sagrados" de Analise de Sistemas que tiveram que contratar gente p. digitar por eles.

Alguma esperanca?

Existe, nos EUA, um sistema chamado "Dragon", o maior programa residente do mundo, como e' conhecido. Na configuracao minima, 386 DX 40 megahertz, 16 mega de memoria, ele toma 8 mega de RAM so' pra ele. A pessoa pode ditar as palavras e ele escreve. Sei la' o preco. E' uma esperanca, pra quem sofre do mal e nao e' gago. E tem acesso ao programa. Mas isso e' noticia velha, deve haver sistemas mais novos e com certeza em alguns anos, estarao disponiveis programas "shareware" para isso. Quantos tempo para isso acontecer e' algo a se pensar ... O trecho abaixo foi tirado de um FAQ de um desses produtos. Para nao dizerem que estou fazendo propaganda, abaixo tem um trecho mencionando outros produtos.

WHAT IS DRAGONDICTATE?       Simon.Crosby@cl.cam.ac.uk  
(tirado do <http://www.cl.cam.ac.uk/a2x-voice/> (this should include  
          information on the new a3x software which works with Windows NT  
          instead of Unix and X)  
          <ftp://ftp.cl.cam.ac.uk/a2x-voice/> )

DragonDictate is a speech recognition system which runs on a PC. It is a discrete utterance system, which means that you have to pause between words. It runs under DOS or windows. DragonDictate has a large English vocabulary, and also allows the definition of macros, which are basically sounds with which are associated sets of keystrokes. For example, controlling your editor you might need a macro "open file", which presses the magic key sequence to load a file into your editor. Although DragonDictate is PC based, it is possible to direct its output to a sensible machine, such as a workstation, by putting an

Ethernet or serial interface onto the PC, and using a telnet program to send the keystrokes from DragonDictate to the workstation. A piece of public domain software called a2x allows you to convert ASCII keystrokes into events on a X display, so it is possible to "talk to X".

#### OTHER SPEECH RECOGNITION PRODUCTS

From: "Carlos M. Puig"

Date: Wed, 30 Nov 1994 20:46:01 -0800

The current issue of PC Magazine (December 20, 1994) has a major review section on voice recognition products (pages 203-219). The following products are covered in detail:

- o Dragon Dictate for Windows
- o IBM Personal Dictation System
- o IBM Continuous Speech Series
- o Kurzweil Voice for Windows
- o Listen for Windows
- o Phonetic Engine 500 Speech Recognition

In addition, there is a table of "Other Voice-Recognition Products" (p. 209) and a sidebar on "Navigation in a Mouseless World" (pp. 212-13) covering briefly:

- o Voice Assist (bundled with the Sound Blaster 16)
- o VoiceMouse
- o IBM Navigation Product (name not finalized)
- o QuickSwitch for OS/2

This time there is no editor's choice:

"While voice-recognition technology for the PC has finally advanced enough to yield productive tools, we feel that it's still too early in the game to pick a clear winner in any of the the three categories we examined [dictation, navigators, and application development]."

#### TENDINITE, DOENCA PROVOCADA PELA MESMICE

{Trechos - Jornal da USP - 5 a 11/12/1994 - pg 9}

Os resultados da inflamação são sentidos pelos pacientes de tendinite- que sequer conseguem fechar as mãos e geralmente ignorados pelos médicos menos experientes. Como não deixa marcas a vista e não é detectada por exames laboratoriais tradicionais, a doença é diagnosticada como pretexto para o paciente ficar alguns dias sem trabalhar. Nada mais enganoso, porém. A tendinite só pode ser diagnosticada por exames clínicos, em que o médico descobre a doença através dos sintomas apresentados pelo paciente.

Quando finalmente convence o médico e chefe de que realmente está doente, o paciente se encontra em dos quatro graus da tendinite, como os fisioterapeutas classificam os estágios de gravidade da doença. No primeiro deles, pessoa sente dores nas mãos apenas no período do dia. Se a dor persistir a noite a noite, incomodando o sono, paciente já avançou um grau na doença. O terceiro grau da doença se caracteriza por dificuldades em mover a mão e aumento no volume dos tendões, causado pela inflamação. Todas estas dificuldades acentuadas e somadas a total incapacidade funcional colocam o paciente no quarto grau da tendinite.

Ha outros formas de se contrair a doença. Para isso, basta a pessoa

realizar o mesmo movimento constantemente, no trabalho ou em casa. O habito de fazer croche, por exemplo, e apontado pelos fisioterapeutas como um fator de risco. O dentista, pela obrigacao profissional de movimentar constantemente os punhos e as maos, tambem pode apresentar problemas. A tendinite nao e um inevitavel produto da industrializacao. Ela pode ser evitada. "E muito importante que as empresas se conscientizem desse perigo desse perigo e tomem medidas que previnam o aparecimento da tendinite nos seus funcionarios", alerta a fisioterapeuta Raquel Aparecida Casarotto, professora do curso de Fisioterapia da faculdade de Medicina da USP. Segundo ela, ha varias acoes que, se particadas, quase eliminam o risco de contrair tendinite.

Para digitadores - categoria profissional mais acometida pela tendinite -, Raquel recomenda primeiro que o mobiliario seja adequado ao trabalho: o teclado do microcomputador deve estar exatamente a 90 graus em relacao a pessoa e numa altura em que nao seja necessario abaixar ou levantar os ombros e cotovelos. A tela deve estar ajustada de forma que a nao exigir que o digitador movimente a cabeça para enxergar oque escreve. Os periodos de descanso tambem sao necessarios as pessoas que trabalham varias horas a frente de um computador. Citando estudos feitos no exterior e adotados internacionalmente, Raquel afirma que o digitador deve reservar dez minutos de descanso para cada hora de trabalho. Alem disso o ideal e que nao ultrapasse o limite de oito mil toque por hora de servico.

A recuperacao total de um paciente pode levar ate um ano de tratamento, dependendo do grau de gravidade da doenca. No Centro de Doenca Ocupacionais a media de recuperacao dos pacientes e' de cinco meses - tempo suficientemente longo e caro para uma empresa ficar sem seu funcionario.

(Roberto G. Castro)

Uma boa de se prevenir, e' aprender a digitar com a postura igual a ilustracao abaixo, que esta' em formato uuencodado. Ver apendice no final. (o texto abaixo nao e' erro de leitura)

#### DESGASTE VISUAL:

De acordo com um estudo realizado em 1990, pelo National Research Council e a National Academy of Science, 50 % dos usuarios profissionais de terminais de video (vulgo monitores de computador) apresentavam sintomas de desgaste ocular, sendo pelo menos um deles o desconforto visual. A percentagem de usuarios profissionais trabalhando em condicoes ideais: entre 5 e 10%. Para diminuir esse desgaste, alem de periodicamente fazer intervalos para descansar os olhos, a luz no local de trabalho deve ser no maximo, tres vezes mais brilhante do que o fundo da tela. A iluminacao fluorescente da maioria dos escritorios e' mais intensa do que isso(\*). Se possivel desligue a luz que incide diretamente sobre a tela. Se voce usa constantemente algum texto impresso, utilize uma pequena luminaria incidindo sobre o texto. O uso de telas anti-reflexivas elimina reflexos, diminui o brilho do monitor e absorve luz ambiente, evitando que atinja nossos olhos.

Sinais diretos do desgaste      Sinais indiretos do desgaste ocular(\*)

- |                              |  |
|------------------------------|--|
| - Cansaco Visual             | - Dor ou tensao muscular nos ombros e pescoco  |
| - Visao turval               | - Dor nas costas                               |
| - Olhos irritados            | - Fadiga excessiva durante uso de monitores    |
| - Visao dupla                | - Irritacao excessiva durante o uso de monitor |
| - Alteracao na percep. cores | - Diminuincao da eficiencia visual e maior     |
| - Desconforto com o uso de   | ocorrencia de erros                            |
- olculos para disturbios de



refracao

(Esta tabela abaixo e' para configurar o seu editor de textos de forma a cansar menos a visao)

TABELA DE CUSTOMIZACAO DE CORES (*)		
COR DO CARACTER	COR DO FUNDO	
Recomendado	Evitar	
Preto	Cinza, Branco, Amarelo Ciano, Magenta, Vermel	Azul
Branco	Preto, Verde, Magenta Vermelho, Azul	Amarelo, Cinza
Amarelo	Preto, Magenta, Vermel	Verde
Ciano	Cinza, Preto, Azul	Branco
Verde	Cinza, Branco, Amarelo	Ciano, Verm, Azul
Magenta	Cinza, Preto, Branco Ciano, Azul	Vermelho
Vermelho	Cinza, Preto, Branco Amarelo, Ciano	Verde, Mag., Azu
Azul	Cinza, Branco, Ciano	Preto, Vermelho

(\*) Material extraido do Artigo "O Computador e o desgaste visual"- Revista CPU-PC - Autor: Alexandre Bandeira de Mello

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A QUESTAO DA CENSURA NA REDE INTERNET  
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A maioria dos leitores regulares do Barata Eletrica ja' deve ter sentido a barra pesada que foi, nos EUA, a questao do Computer Underground e a implantacao da Internet. A democratizacao da informacao, permitida pela Internet criou um sem-numero de discussoes e obrigou a revisao/criacao de varias leis e mecanismos para tentar controlar aquilo que e' uma das melhores formas de se batalhar pela unificacao da raca humana.

Mais especificamente, estou falando da "The Communications Decency Act of 1995" (Ato de Decencia nas Comunicacoes) do sen. James Exon. A emenda expandiria os regulamentos atuais referentes a trotes ou chamadas telefonicas obscenas, de forma a incluir todas as formas de comunicacao. Em linguajar juridico: "Qualquer um que transmita ou faca disponivel qualquer comentario, sugestao, proposta, imagem ou outra comunicacao que e' obscena, lasciva, suja ou indecente, atraves de um aparelho de telecomunicacao (nota: isso inclui fax), estara' sujeito a US\$ 100.000 de multa ou 2 anos de prisao".

O FBI, qualquer coisa vagamente parecida com nossa policia federal, poderia prender qualquer um que veiculasse pornografia na rede, tal como

aconteceu com um casal, Robert and Carleen Thomas. Eles tinham uma BBS em San Jose', na California. Somente para adultos. Um policial, em Memphis, no Tennessee descobriu sobre isso. Fez o download de algumas fotos "educativas". Com base nisso, preencheu uma acusacao de distribuicao de imagens pornograficas via computador. Para encurtar a historia: o casal foi julgado no Tennessee, por um juri local (talvez um bando de velhinhos conservadores) e o veredito foi de mais ou menos 3 anos na prisao. Sendo que prisao la' nos EUA e' prisao mesmo. Pode ate' ser mais confortavel do que uma brasileira, mas .. nao tem essa de "visitas conjugais".

Claro que este nao foi o unico episodio. Varios grupos se posicionaram em nome desta emenda. Houve o caso de um garoto que descobriu antes dos 18 que era gay e atraves da rede foi procurar sua turma. A midia criou uma imagem de que a Internet possibilitava velhos pederastas a desencaminharem jovens incertos de sua sexualidade. Descobriram que nesse caso especifico, o cara que enviou dinheiro p. outro fugir de casa tinha menos de 18 tambem. Michou um pouco o movimento, mas ai' ja' se comecou o debate. E comecaram a sair os primeiros "browsers" com lista "censurada" de sites. Se tem um site que tem historias de sexo explicito, ou fotos de objetos estranhos inseridos atraves do .. voce sabe, o "browser" nao deixa o sujeito acessar. O pai dele, que tem a senha, acessa, mas ele nao. Legal? Sei la'. Uma vez que agora e' lei e todo americano vai ter sua senha internet, os caras estao inventando um monte de ameacas para justificar tal puritanismo besta. Nao so' porque tem um bando de gente com o pe' na cova que tem medo do que os filhos vao descobrir na rede (como se nao pudesse descobrir em bibliotecas, cinemas ou televisao), mas tem todo um lance de que muita coisa vai acontecer sem pagar imposto. O sistema telefonico era subutilizado. Com a rede, isso muda. Por isso estao inventando a Electronic Highway, que pretende "vender" informacao disponivel livremente na rede Internet. Serao servicos melhores (talvez), mas tambem mais faceis de taxar. Nao e' legal?

Tudo bem. A liberdade de opiniao e expressao e' protegida pela Constituicao Norte-americana, pela Declaracao de Direitos Humanos e inclusive pela Constituicao Brasileira. Uma coisa simples. Cada um veicula o que quiser. O governo de nenhum pais nao tem nada a ver com isso. So' que a liberdade assusta. Comecou-se a criar a questao do chip Clipper, para permitir apenas ao governo, a monitoria de linhas telefonicas. Existe um projeto para permitir que qualquer monitoria telefonica, seja feita a partir da central telefonica. E o numero de linhas capazes de ser monitoradas a partir de centrais telefonicas (existe software capaz de "ouvir" o que esta' sendo falado e ligar os gravadores, por falar nisso. Foi experimentado pela primeira vez no Peru e teria sido responsavel pela prisao do lider do Sendero Luminoso), esse numero seria igual a um por cento de todas as linhas existentes nos EUA. Ou seja, precisando ou nao, a qualquer instante, 1% de todas as linhas norte-americanas poderiam ter uma escuta ainda melhor do que a que foi feita no caso SIVAM. Para quem nao entendeu, isso dai seria imbutido no hardware e no software telefonico. Se fosse necessario, digamos, vigiar os 0,5 % de telefones do pessoal ligado, ligeiramente ligado, ou conhecido de um partido qualquer, isso seria (sera') feito em talvez um ou dois dias. Ou menos tempo. Tudo em nome de prevenir (nao sei) ameacas terroristas em solo americano. Com certeza, um dia vao tentar vender esse tipo de coisa pro governo brasileiro.

Invasao de privacidade? Como se isso nao bastasse, ha' uma guerra interna contra a exportacao de qualquer software de criptografia, muitos temem a proibicao de sistemas capazes de proteger a privacidade da comunicacao de cidadoes comuns, tornando o governo o unico realmente capaz de se proteger contra espionagem e/ou defender sua privacidade.

O cinema americano, que por exemplo, na 1a e 2a guerras criou filmes estimulando o publico americano a se juntar a coisa, (o povo nao era afins. Na Primeira Guerra, o candidato vencedor das eleicoes prometeu respeitar isso), esse cinema esta' soltando filmes explorando exatamente o lado ruim

da rede Internet, que e' a invasao da privacidade. Aqui no Brasil, nao nos apercebemos da jogada, o povo ainda esta' feliz porque o governo nao vai ter o monopolio da Internet. E se esquece que o nosso pais sempre imitou o modelo norte-americano, a tal ponto que numa epoca, nosso pais era chamado de "Estados Unidos do Brasil". E' preciso se prevenir contra a criacao de um clima de medo, em que a resistencia contra esse tipo de lei aqui seja igual a zero. Ai', qualquer sujeito resolvendo experimentar alguma coisa nova, sera enquadrado em alguma legislacao fajuta, que nao tem nada a ver. E' preciso enxergar que Thrillers como "A Rede" e "Assassino Virtual" representam a exploracao de uma possibilidade remota e que a rede Internet nao e' nada mais nada menos que uma ferramenta e nao um instrumento do mal. Caindo na real: a Internet nao teve nada a ver com o aumento do numero de assassinatos no carnaval. Nem foi responsavel pelo racismo e discriminacao que infestaram a Europa pos-URSS. Nao foi ela que estimula guerras inter-tribais na Africa, coisa que permitiu o colonialismo europeu fincar o pe' no continente, se aproveitando das divisoes internas.

Estou comentando isso por ter visto um URL no Brasil onde se comeca uma materia com o titulo "A Rede q. discrimina", associando as duas coisas. Bem escrita, mas sensacionalista, como tantas outras que associam a Rede ao atentado do Unabomber ou procuram ver ameaca em tecnologia nova. E' bem verdade H.L. Menckem, famoso jornalista e cronista americano da 2a guerra, odiava o telefone. Stalin considerava o telefone como um aparelho perigoso por causa de suas caracteristicas "democratizantes" e exigiu que o sistema telefonico sovietico fosse feito de forma a ser facilmente "grampeado". Agora, o T.R.E. coloca no jornal que ira' fiscalizar a propaganda eleitoral veiculada na Internet. Pode ser um primeiro passo, efemero, para se pensar na volta da censura.

O problema e' que a Internet e' internacional. So' se pode exercer tal controle sobre o servidor localizado em territorio nacional. Por isso, a iniciativa do T.R.E, embora nao afete os brasileiros que acessam a rede, deve ser encarada como uma ameaca. Em nome de um controle sobre o que e' veiculado na rede, podem ser feitas leis que serviraõ de ferramentas para amedrontar qualquer um.

Vendo as coisas dentro de um contexto: nos EUA, comprar revistas como a Playboy, Hustler, Penthouse, e' crime em uns vinte estados. Essa lei nao e' observada, mas e' uma ferramenta que um xerife, numa cidade pequena, pode usar para estragar a vida de alguem. Fumar maconha, dirigir embriagado, andar de moto sem capacete, adulterio, etc, sao crimes que podem ser denominados "consensuais". A pessoa que fuma 3 macos de cigarro por dia esta' cometendo suicidio (crime, se nao me engano), mas se cala e consente quanto a esse crime. No ultimo caso, a propaganda "esse produto pode ser prejudicial a saude" e' um sinal de que o sistema legislativo reconhece a toxicidade do cigarro e a auto-destruicao do fumante. Mas seria incapaz de controlar por decreto esse gesto.

E' preciso encarar o que esta' acontecendo nos EUA, com relacao a pornografia on-line, como uma ameaca ao artigo 19, que defende a liberdade de expressao, na declaracao de direitos humanos. O que e' pornografia infantil nos EUA e' propaganda de margarina na Suecia e e' comercial de TV no Brasil. Nao sei. As vezes voce pode ate' acreditar q alguem tem q policiar e prender excessos na rede. Tem q ter algum tipo de censura com relacao ao material exposto. Okay. Quem tem esse tipo de pensamento deveria ler um faq na rede sobre uma lista de discussao: "porque odeio a America-On-Line". Vulgo AOL. La' tem uma lista de palavras e expressoes proibidas em forums da empresa. Para quem nao sabe a AOL e' uma especie de Internet para "muito ignorantes". Outra e' a Prodigy, que segundo me contaram, usa um software que impede o uso de qualquer palavra chula em email, tipo sei la', fuck, ass, pimp, etc. Imagina sua conta Internet ser cancelada porque uma analise mostrou que sua pessoa usa muito palavraõ na correspondencia. Mais ou menos por ai. Ou porque voce enviou um Gif com a foto de sua namorada e mandou p. um amigo pela rede. No caso dos EUA, a partir do

momento em que o sujeito digitar "estou enviando um gif" numa carta, ele pode entrar numa lista negra, de gente suspeita de "trafico de pornografia via computador". E nao precisa ser condenado por isto. Se for preso e solto depois por falta de provas, so' as manchetes nos jornais ja' sao o suficiente para lhe destruir a vida. Alguem se lembra do que aconteceu com os donos de uma escolinha aqui de Sao Paulo, que pegaram a fama de "corruptores de menores". Mais ou menos isso. Por exemplo.

Os jornais publicaram que o Compuserve, uma outra rede, concorrente da AOL (ambos ligados a Internet, mas capazes de continuar por si sos, ja' que sao uma "internet" de franquia) fechou todas as listas de discussao "picantes", e depois reabriu. Claro, estava perdendo dinheiro. Uma franquia daquelas perde para os concorrentes se cortar acesso a um servico popular. Estou querendo chegar no seguinte ponto:

O grande atrativo da Internet e' exatamente a caixinha de surpresas, a cornucopia da fartura da informacao. Se forem inventadas leis para "regular" esse acesso, duas coisas vao acontecer: ela vai ficar chata como a televisao e controlada pela governo, como acontece com a cessao de canais de TV e radio. Os jornalistas que escrevem artigos sobre a rede tem que pensar que sera' nesse prato que irao comer, no futuro. Os net-cidadaos nao podem permitir que sejam controlados, na exploracao que querem fazer com os seus acessos. Falar que a Internet discrimina e facilita o racismo, a pornografia e o terrorismo e' o mesmo tipo de desculpa que foi usado pela revolucao de trinta, que usou o comunismo para "rasgar" a constituicao. E o que e' pior. E' um tipo de desculpa que pega.

Qualquer lei que for criada para regular a Internet e o material contido nela so' ira' beneficiar grandes redes de computadores que ja' contam com um certo sistema proprio de censura e que cobram "extra" para aquele que quiser acessar a rede das redes. A Compuserve vive distribuindo software em disquetes com a propaganda de acesso "gratuito" por X horas. O ingenuo usa, fala para si mesmo: "Po^, legal, sai' ganhando" Usa o software, da' o numero do cartao de credito quando se registra "sem compromisso". Depois, ao longo da sua exploracao pela rede da Compuserve, descobre: "Po^, que arquivo maneiro.. vou copiar". Um tempo depois, recebe a fatura do cartao. "Mas nao era gratuito?". Vai saber se foi erro deles? Ou do cara?

A Internet abre as portas para um novo tipo de Universo. Pode abrir as portas da percepcao para o mundo. So' nos paises muculmanos se tomou providencias para se censurar o acesso. Foi para garantir isso que foi criada, nos E.U.A, a Electronic Frontier Foundation, uma fundacao para lutar pela liberdade no Cyber-universo. Aqui, nao existe nada do genero ainda, mas nao custa conscientizar as pessoas para que possam ter opiniao formada, livre de preconceitos. Uma das maiores surpresas da minha vida, foi (mudando de assunto um pouco), ter lido sobre uma conferencia ou congresso de homossexualismo que teve no Brasil. Havia uma materia sobre um grupo homossexual de discussao, formado por lesbicas negras. Diziam que as lesbicas eram discriminadas dentro do chamado "mundo gay" e as mulheres de cor alem dessa sentiam-se sempre objeto de piadas, trotes ou outros comportamentos racistas. Surpresa, ne'? Eu sempre achei que todo gay era mente aberta, exatamente por ser discriminado.. Um amigo me falou que isso que eu pensava tambem era preconceito, assim como achar que todo individuo de origem niponica e' estudioso, tambem e' outro tipo de discriminacao ou preconceito. Voltando a Internet, e' preciso lutar para conscientizar as pessoas que o perigo esta' so' na cabeca de cada um e nao naquilo que esta' disponivel na rede.

THE SOCIAL FORCES BEHIND THE DEVELOPMENT OF USENET NEWS

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by Michael Hauben

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Right at this moment someplace in the world, someone is being helpful (or someone is being helped.) At the same time, others are participating in various discussions and debates. A new communications medium is currently in its infancy. Over the past two decades the global computer telecommunications network has been developing. One element of this network is called Usenet News (also known as NetNews), and this news' original carrier was called UUCPnet (or just UUCP). The rawest principle of Usenet News is its importance. In its simplest form, Usenet News represents democracy. The basic element of Usenet News is a post. Each individual post consists of a unique contribution from some user placed in a subject area, called a newsgroup. In Usenet's very beginning (and still to some extent today) posts were transferred using UNIX's UUCP utility. This utility allows the use of phone lines to transmit computer data among separate computers. The network (UUCPnet) that Usenet News was transferred on, grew from the ground up in a grassroots manner. Originally, there was no official structure. What began as two or three sites on the network in 1979 expanded to 15 in 1980. From 150 in 1981 to 400 in 1982. The very nature of Usenet is communication. Usenet News greatly facilitates inter-human communication among a large group of users.

Inherent in most mass media is central control of content. Many people are influenced by the decisions of a few. Television programming, for example, is controlled by a small group of people compared to the size of the audience. In this way, the audience has very little choice over what is emphasized by most mass media. However, Usenet News is controlled by its audience. Usenet News should be seen as a promising successor to other people's presses, such as The Searchlight, The Appeal to Reason, The Jewish Daily Forward in the U.S. and the Penny Press tradition in England. Like these other people's presses, most of the material written to Usenet is by the same people who actively read Usenet. Thus, the audience of Usenet decides the content and subject matter to be thought about, presented and debated. The ideas that exist on Usenet come from the mass of people who participate in it. In this way, Usenet is an uncensored forum for debate - where many sides of an issue come into view. Instead of being force-fed by an uncontrollable source of information, people set the tone and emphasis on Usenet. People control what happens on Usenet. In this rare situation, issues and concerns that are of interest and thus important to the participants, are brought up. In the tradition of Amateur Radio and Citizen's Band Radio, Usenet News is the product of the users' ideas and will. Unlike Amateur Radio and CB, however, Usenet is owned and controlled solely by the participants. Currently the range of connectivity is international and quickly expanding around the world into every nook and cranny. This explosive expansion allows growing communication with people around the world.

In the 1960s, the Advanced Research Projects Agency (ARPA) of the Department of Defense began research of fundamental importance to the development and testing of computer communications networks. ARPA research laid the ground work for the development of other networks such as UUCPnet. ARPA conducted an experiment in attempting to connect incompatible mainframe computers.(1) It was called the ARPA Computer Network (Arpanet). ARPA's stated objectives were:

"1) To develop techniques and obtain experience on inter-connecting computers in such a way that a very broad class of interactions were possible and

2) To improve and increase computer research productivity through resource sharing."(2)

ARPA was both conducting communications research and trying to study how to conserve funds by avoiding duplication of computer resources.(3) A Cambridge, Mass. company, Bolt Beranek and Newman, Inc. (BBN), was chosen to construct the network, and AT&T was chosen to provide the communications lines. Arpanet was needed because it was found that a data connection over existing telephone voice lines was too slow and not reliable enough in order to have a useful connection.(4) Packet-switching was developed for use as the protocol of exchanging information over the lines. Packet-switching is a communications process in which all messages are broken up into equal size packets which are transmitted interspersed and then re-assembled. In this way, short, medium and long messages get transferred with minimum delay.(5)

The Arpanet was a success. ARPA provided several advances to communications research. Arpanet researchers were surprised at the enthusiastic adoption of electronic mail (e-mail) as the primary source of communication early on. E-mail was a source of major productivity increase through the use of the Arpanet.(6) By 1983, the Arpanet officially shifted from using NCP (Network Control Program) to TCP/IP (Transmission Control Protocol / Internet Protocol.) A key point to TCP/IP's success is in its simplicity. It is very easy to implement over various platforms, and this simplicity has accounted for its continued existence as a de facto standard of the Internet up to today. Arpanet's lasting contribution was demonstrating how a backbone infrastructure can serve as a connection between gateways. A gateway is a computer or part of a computer programmed to receive messages from one network and transfer them onto another network.

Arpanet grew quickly to more than 50 nodes between Hawaii and Norway.(7) However, it did not extend to all who could utilize it. Computer scientists at universities without Department of Defense contracts noticed the advantages and petitioned the National Science Foundation (NSF) for similar connectivity. CSNET was formed to service computer scientists. CSNET was initially financed by the NSF. Very quickly the desire for interconnection spread to other members of the university community and CSNET grew to serve more scientists than just computer scientists at universities. CSNET became known as "Computer 'and' Science Network" rather than just "Computer Science network."(8)

Arpanet was phased out by the Department of Defense, and was replaced by various internal networks (such as Milnet). The role of connecting university communities and regional networks was taken over by an NSF funded NSFNET, which originated as a connection for university researchers to the five National Supercomputer Centers. CSNET and NSFNET were made possible by the research on Arpanet. The NSFNet became the U.S. backbone for the global network now known as the Internet.

Arpanet research was pioneering for communications research.(9) Researchers discovered the link between computer inter-connection and increased productivity from human communication. The sharing of resources was proven to save money and increase computer use and productivity. The development of packet-switching revolutionized the basic methodology of connecting computers. The source of these discoveries were the people involved. The personnel involved in the Arpanet project were very intelligent and forward-looking. They recognized their position of developing future technologies, and thus did not develop products that commercial industry could (and would) develop. Instead they understood that the communications technologies they were developing had to come from a not-for-profit body. ARPA researchers had

no proprietary products to support, and no deadlines to meet. Either would have tainted, or made developing networks of incompatible computers impossible or limited. Current users of international computer networks are in debt to the pioneers of Arpanet.

So Arpanet was successful in its attempt to connect various spatially remote computers, and thus more importantly the people who used those computers. However, these people were either professors at Universities that had Department of Defense research grants or employees of a limited number of Defense Industry companies. Eventually other Universities connected through CSNet, NSFNET, BITNET and other developing connections. There were still a mass of people who wanted a connection, but were not in a position to gain one. Duke University and the University of North Carolina at Chapel Hill were two such locations. It was in these underprivileged fertile grounds where the grassroots computer communications breakthrough of Usenet originated and developed.

The UNIX operating system provides the basic tools needed to share information between computers. UNIX(10) was developed as "a system around which a fellowship would form." (11) One of the programmers of UNIX, Dennis Ritchie, wrote that the intended purpose of UNIX was to "encourage close communication." (12) UNIX's general principles thus conceptually foreshadowed the basic tenet of Usenet News. How else should one go about designing communications programs, but on an operating system which was designed with a basic principle of encouraging communication? The UNIX utility UUCP (UNIX-to-UNIX CoPy) was developed in 1976 by Mike Lesk at Bell Labs. UUCP provided a simple way of passing files between any two computers running UNIX and UUCP. UNIX's popularity also arose from AT&T's prohibition to profit from other than their main business, phone services, under the terms of the 1956 Consent Decree. UNIX was thus available on a "no-cost" (or very low cost) basis. The operating system was seen as an "in-house" tool on DEC computers and was in use throughout Bell Labs. Many Universities used the same type of computer and were licensed by AT&T to utilize UNIX. It was thus easily accessible. Schools picked it up, and computer science students used it to learn about operating systems, as UNIX was a model of elegance and simplicity compared to most operating systems of the time. UNIX became a widely used operating system in the academic world. This paved the way for an international public communications system to form.

Usenet News was created by graduate students Tom Truscott and James Ellis of Duke University in conjunction with graduate student Steve Bellovin of the University of North Carolina in 1979. A 5 page leaflet introducing Usenet News was distributed at the Winter 1980 Usenix UNIX Users' Conference in Boulder, CO. Later that year, at the Summer Usenix Conference in Delaware the software needed to participate in Usenet was put on the Conference tape. By this time, Stephen Daniel had rewritten the basic programs and it was called A-News. The software was immensely popular.

Usenet was patterned to mean "UNIX Users Network." The developers thought Usenet would be used to discuss people's problems and to share experiences about UNIX. Usenet did provide a forum for people to solve problems with UNIX, as AT&T provided no support for UNIX. In an early handout, Usenet is referred to as a "poor man's Arpanet." (13) Stephen Daniel told me that people who didn't have access to the Arpanet were hungry for similar opportunities to communicate. (14)

Usenet News has been full of surprises from the beginning. The originators of Usenet News underestimated the hunger of the people. As the initial intentions were to produce an easy method of communicating with other users at the same site, the writers thought people would want to have local

bulletin boards.(15) However, people were attracted by the possibility of communicating with others outside the local community. Even today, the widespread communication is part of what makes Usenet so enticing. It was also thought NetNews would be useful as a method of communications at individual locations, and between sites close to each other.(16) Usenet grew as a grass-roots connection of people. The people who utilized NetNews wanted to communicate, and communicate they did! People have a fundamental need to communicate and Usenet News aptly fills the bill. (See, e.g., Gregory G. Woodbury's "Net Cultural Assumptions")

Early in 1980 or 1981 the gap between Arpanet and Usenet was bridged.(17) The University of California at Berkeley had connections to both Arpanet and Usenet News. This allowed another pioneer, Mark Horton, to bring discussions from Arpanet mailing lists into Usenet newsgroups.(18) This was a significant achievement. Communities other than ARPA sponsored researchers were finally able to see what the Arpanet had made possible. The gatewaying of Arpanet mailing lists into Usenet attracted a wave of people. These people became attracted to Usenet News when two Arpanet mailing lists (SF-LOVERS and HUMAN-NETS) began to appear on Usenet.(19) These lists provided interesting material and discussions. The size of the news feed (i.e., the raw data of Usenet News) thus became larger and provided more for people to read. Later other sites would serve as gateways to even more discussion lists from the Arpanet. NetNews was also seen as a superior method of holding discussions. Gatewaying these fa (i.e., From Arpanet) newsgroups proved to be politically courageous. The Arpanet was only accessible by a certain group of people, and these gateways challenged that notion. The effect on the Arpanet was important as Steve Bellovin wrote:

"The impact of Usenet on the Arpanet was more as a (strong) catalyst to force re-examination (and benign neglect) on the strict policies against interconnection. Uucp mail into the Arpanet became a major force long before it was legit. And it was obviously known to, and ignored by, many of the Powers that Were."(20)

The network made possible by UUCP expanded to connect people across the entire country. Rather early UUCP expanded internationally when the University of Toronto Zoology Department joined the Net in May of 1981.(21) Two companies proved helpful to this communication by distributing NetNews and electronic mail long distance. Each UUCP site had to either pay the phone bill to connect to the next system, or arrange for the other system to make the phone call. System Administrators at AT&T and DEC did the footwork in order to take e-mail and news where it might not have reached. These people went through the trouble in order to try to see the system work. However, easy connections were not always available. In one example, Case Western Reserve University graduate students had to route mail across the continent twice in order to send mail through UUCP to reach their professors who were connected to the Arpanet next door.(22) Usenet News seems to have introduced the idea of connectivity to the Arpanet, as gradually the Arpanet connected to other networks until it became more known as a backbone to other networks than a self-contained network.(23)

Voluntary effort is the crucial foundation of UUCPnet and Usenet News. On one side, there are those who donate time and energy by contributing to Usenet's content - writing messages and answering messages or participating in a debate. Without the time and effort put in by the users of Usenet News, Usenet News would not be what it is today. Also important to Usenet's success are the system administrators who make the running of Usenet News possible. Resource-wise, NetNews takes up disk space on computers throughout the Usenet, and phone calls often must be made to transfer the raw data of the news. In particular, system administrators at AT&T and DEC found it



worthwhile to transport the News across the country. Certain sites emerged as clearing houses for Usenet News and UUCP e-mail.(24) These machines served as major relay stations of both news and e-mail. A structure grew that was considered the "backbone" of "the net." Backbone sites formed the trunk of the circulatory system of news and e-mail. A backbone site would connect to other central distribution computers and to numerous smaller sites. These central backbone sites provided a crucial organization to the Usenet communications skeleton. People formed the center of these connections. For example, ihnp4 at AT&T existed mainly because of Gary Murakami's effort and only partially from management support. Usenet services and support were not officially part of Gary's job description. After Gary left ihnp4, Doug Price put time and effort to keep things running smoothly. Certain System Administrators in Universities also picked up the responsibility for distributing News and e-mail widely. Often these individuals would find ways of having their site pick up the phone bill. Sometimes sites would bill the recipients. However, others who received a free-connection often exchanged that for spreading what they received to others for no charge (e.g.; Greg Woodbury & wolves off of Duke, and plenty of others.)

Initially, expansion of sites receiving Usenet News was slow. Some statistics are shown in the table.

Year	# of Sites	Articles/day	
1979	3	2	
1980	15	10	
1981	150	20	
1982	400	50*	
1983	600	120	
1984	900	225	
1985	1300	375	1MB+/day
1986	2500	500	2MB+/day
1987	5000	1000	2.5MB+/day
1988	11000	1800	4MB+/day

\*This was after Arpanet mailing lists were gatewayed into Usenet. (Gene Spafford, Usenet History Archives from the Mailing List) [from Gene Spafford, Oct. 11, 1990, based on presentation on Oct 1, 1988 for the IETF meeting.]

Why did this happen? Initially Usenet was only transported via UUCP connections. Besides UUCP, other resources were used, such as weekly airmailing of mag-tape data to Australia to provide connectivity.(25) Today, Usenet News travels over all types of connections. The evolving Arpanet (and now the Internet) provided a faster way of transporting news. However, a large number of Usenet News recipients only have connectivity via UUCP. Universities and certain businesses can afford to connect to the Internet, but many individuals also want a connection. Today 60% of Usenet traffic is carried over the Internet via the instantaneous Network News Transport Protocol (NNTP), but 40% of Usenet News is still carried through the slower UUCP connections. From my own research using Usenet News, I have heard of several examples of various types of connections using UUCP. These representatives of the "fringe" give a clue to what the origins of this communication must have been like.

The number of sites receiving Usenet News continually increased (as already illustrated) and this clearly demonstrates its popularity. People were attracted to Usenet News because of what it made possible. People want to communicate and enjoy the thrill of finding others across the country (or today across the world) who share a common interest or just to be in touch with.

Besides the common thrill, it is possible to make a serious relationship. Usenet News makes this discovery possible because it is a public forum. People expose their ideas broadly. This wide exposure makes it possible to find compatriots in thought. The same physical connections which carry Usenet News often also transport electronic mail. Interactions and discoveries are only made possible by the public aspect of Usenet News. Mailing Lists have as wide a range of discussions, but are exposed to a much smaller sized group. The appeal of Usenet can become tiresome at times(26), but it is rare that anyone leaves Usenet permanently. Unless, of course, someone can't find the time to fit Usenet into his or her life. As more universities, businesses, and individuals connect, the value of Usenet News grows. Each new person eventually can add his unique opinion to the collection of thoughts that Usenet already has. Each new connection also increases the area where new connections can be made through cheap local phone calls. The potential for inexpensive expansion is limited only by the oceans and other natural barriers.

Arpanet has been supplemented and eventually replaced by networks like CSnet and its successor NSFnet. Both were created by the United States Government in response to research scientists' and professors' pleas to have a similar connection to the Arpanet. The NSFnet was also created to provide access to the five supercomputer computing centers around the country. And now NSFnet as the backbone of the global provides another route for Usenet News to be distributed. Similar to the Arpanet, NSFnet is a constant connection run over leased lines. NetNews is distributed using the NNTP protocol over Internet connections. This allows for News and e-mail to be distributed quickly over a large area. Internet connections also assist in carrying news and mail internationally. The Internet-class networks and connections include the established government and university sponsored connections. However much of the way individuals are connected at home is through the phone lines and various versions of UUCP. There are also commercial services that exist now for a fee that serve to provide connections for electronic mail and Usenet News access, as well as access to the Internet.

Much of the development of Usenet News owes a big thanks to restrictions on commercial uses. Where else in our society is the commercial element so clearly separated from any entity? Many other forums of discussion and communication become clogged and congested when advertisements use space. On UUCPnet, people feel it wrong to assist any commercial venture through the voluntary actions of those who use and redistribute news and e-mail. When people feel someone is abusing the nature of Usenet News, they let the offender know through e-mail. In this manner users keep Usenet News as a forum that is free from the monetary benefit for any one individual. Usenet is not allowed to be a profit making venture for any one individual or group. Rather, people fight to keep it a resource that is helpful to the society as a whole.

On what was the Arpanet and what is now the NSFnet and the Internet, there are Acceptable Use Policies (AUP) that exist because these networks were initially set up, founded and financed by public monies. On these networks, commercial usage is prohibited, which means it is also discouraged on other networks that gateway into the NSFnet. [Unfortunately, the NSF is now encouraging privatization of the NSF backbone. See e.g. the U.S. Office of Inspector General's Report on NSFnet, April, 1993 -ed] However, the discouragement of commercial usage of the global Usenet News is separate and developed differently from the AUP.

The social network that Usenet News represents supersedes the physical connection it rides on. The current NetNews rides on many of the physical networks that exist today. However, if need would ever be, Usenet could re-establish itself outside of the current physically organized networks. Usenet News' quality is such that it will survive because of its users will. As a peer to peer network, Usenet draws its importance. People who use Usenet News wish to communicate with others. This communal wish means that people on Usenet find it in their own and in the community's interest to be helpful. In this way, Usenet exists as a world-wide community of resources ready to be shared. Where else today is there so much knowledge that is freely available? Usenet News represents a living library. Usenet News is only a part of the worldwide computer networks that are "part of the largest machine that man has ever constructed - the global telecommunications network."(27)

Usenet News began with the spirit that still exists today. On several newsgroups I posted a message with the following subject: "I want to hear from the four corners of the Net - That means YOU!" In return I received numerous wonderful answers. One new pioneer was going to use packet radio to send e-mail up to the CIS's orbiting Mir Space Station in the heavens. One person criticized Japan's lack of understanding the computer technology they supposedly "lead". Another user from France told me how the government charged a lot of money to access e-mail and Usenet News, and how there were at least two other "unofficial" connections. Since the government didn't recognize these other gateways, e-mail was to be sent via the United States in order to reach others across the street! Certain cities (e.g., Wellington, New Zealand and Cleveland, Ohio) have free public connections to Usenet News, e-mail and other network resources. Others in Krakow in Poland, Australia and the ex-USSR sent me information about their connection. Some told me of how they made other connections possible. One user in South Africa told me how he distributed news and e-mail and was trying to gain access to a satellite in order to set connections up with the interior of Africa that lacks the otherwise needed infrastructure. The world is still in the infancy of this communications interconnectivity!

The very nature of Usenet News promotes change. Usenet News was born outside of established "networks", and transcends any one physical network. Currently, at this time, it exists of itself and via other networks. It makes possible the distribution of information that might otherwise not be heard through "official channels." This role makes Usenet News a herald for social change. Because of the inherent will to communicate, people who don't have access to News will want access when they become exposed to what it is, and people who currently have access will want News to expand its reach so as to further even more communication. Usenet News might grow to provide a forum for people to influence their governments. News allows for the discussion and debate of issues in a mode that facilitates a mass participation. This becomes a source of independent information. An independent source is helpful in the search for the truth.

Administrators and individuals who handle the flow of information have been predicting the "imminent death of the net" since 1982.(28) The software that handles the distribution of NetNews has gone through several versions to handle the ever increasing amount of information. People who receive News have either had to decrease 1) the number of days individual messages stay at the site, 2) the number of newsgroups they receive; or they have had to allocate more disk space for the storage of News. Despite all the predictions and worries, people's desire for this communication have kept this social network floating. Brad Templeton once wrote, "If there is a gigabit network with bandwidth to spare that is willing to carry Usenet, it has plenty more growth left."(29) Brad, and everyone else will be happy to know that such a network does exist! Various research labs (including the NSF Center for

Telecommunications Research at Columbia University in New York) are close to producing usable gigabit networks.

Usenet News is a democratic and technological breakthrough. The computer networks and Usenet News are still developing. People need to work towards keeping connections available and fairly inexpensive, if not free, so as to encourage the body of users to grow. There are several cities and governments across the world where the public has access to network services as a civic service. This direction is to be encouraged. Exclusive arrangements for access are to be discouraged. The very nature of Usenet News means people are going to be working for its expansion. Others will be working for the expansion for their own gain, and I wouldn't doubt that some forces will be an active force against expansion of Usenet. I can only ask that people attempt to spread this document in an attempt to popularize and encourage the use and fight for Usenet News.

#### Footnotes

1. "In September 1969, the embryonic one-node(!) Arpanet came to life when the first packet-switching computer was connected to the Sigma 7 computer at UCLA. Shortly thereafter began the interconnection of many main processors (referred to as HOSTs) at various university, industrial, and government research centers across the United States." (Kleinrock, "On Communications and Networks," IEEE Transactions on Computers, vol. C-25, No. 12, Dec, 1976, pg. 1328)

2. F. Heart, A. McKenzie, J. McQuillan, and D. Walden, Arpanet Completion Report, Washington, 1978, pg. II-2

3. Alexander McKenzie et al, "Arpanet, the Defense Data Network, and Internet" in The Froehlich/Kent Encyclopedia of Telecommunications, vol. 1, pg. 346

4. Lawrence G. Roberts, The Arpanet and Computer Networks, pg. 145

5. Leonard Kleinrock, "On Communications and Networks", IEEE Transactions on Computers, vol C-25, No. 12, Dec., 1976, pg. 1327.

6. Alexander McKenzie, pg. 357

7. F. Heart, pg. ii-25

8. Alexander McKenzie, pg. 369

9. "For many of the people in government, at the major contractors, and in the participating universities and research centers the development of the Arpanet has been an exciting time which will rank as a high point in their professional careers. In 1969 the Arpanet project represented a high risk, potentially high impact research effort. The existence of the net in practical useful form has not only provided communications technology to meet any short term needs, but it represents a formidable communications technology and experience base on which the Defense Department as well as the entire public and private sectors will depend for advanced communications needs. The strong and diverse experience base generated by the Arpanet project has placed this country ahead of all others in advanced digital communications science and technology." (Arpanet Completion Report, pg. II-109.)

10. UNIX was born in 1969, the same year as Arpanet.

11. D. M. Ritchie, "The UNIX System: The Evolution of the UNIX Time-sharing System," Bell Systems Technical Journal, vol. 63, No. 8 (October 1984), pg. 1578.

12. Ibid.

13. Stephen Daniel, James Ellis, and Tom Truscott, "USENET - A General Access UNIX Network," Duke University, Durham, NC, Summer 1980.

14. Stephen Daniel, 1992, a personal communication, November 1992.

15. Bellovin, Steve. M. and Mark Horton, "USENET - A Distributed Decentralized News System", an unpublished manuscript, 1985.

16. Ibid.

17. KEY POINT - The first gateway of Arpanet mailing lists to Usenet was an early force to have gateways with Arpanet. Gateways to Arpanet were on the side and in all likelihood not officially sanctioned. However, this provided the impetus for future gateways into Arpanet. This was the first pressure on the Arpanet to provide service to a larger number of people - a first step to transforming of the Arpanet to become a part of the backbone on the Internet.

18. Comment from Steve Bellovin, Oct. 10, 1990, Usenet History Archive: "Correct. The original concept was that most of the traffic would be the form now known as UNIX-wizards (or whatever it's called this week). Growth was slow until Mark started feeding the mailing lists in because there was nothing to offer prospective customers. Given a ready source of material, people were attracted."

19. Comment from Tom Truscott, Sept 25, 1990, Usenet History Archive: "The very first news groups were "NET." and local groups such as "dept". Later Horton et al. oversaw the lower-casing of NET. Only when ucbvax joined the net did "fa" appear. Indeed I was unaware of the Arpanet mailing lists such as human-nets until ucbvax enlightened us."

20. Steve Bellovin, Oct 10, 1990 - Usenet History Mailing List. Also - from Lauren Weinstein, Nov. 23, 1992: "Greetings. It's all too easy to forget, even for those of us who were there all along, how "small" it all started. When I was at UCLA-ATS (ARPANet site 1) in the early 1970s, even small mailing lists could cause concern. I still distinctly remember the concerns regarding network loading from Geoff Goodfellow's NETWORK-HACKERS mailing list (this was in the days when "hacker" didn't have the negative meaning it has picked up since then) as the list passed \*100\* addresses. A list about wine (WINE-TASTERS, I believe it was called) which was mentioned in "Datamation" magazine caused memos to be sent out from the powers-that-be about "official use" of the net. There was also a lot of hand-wringing about the 255 site limit (that is, a limit on the number of IMPs [Interface Message Processors -ed]) in the network topology under NCP [Network Control Program -ed]. It's quite remarkable how much we accomplished on what by today's standards were slow machines with "tiny" amounts of memory, running with a 56 Kbit network backbone!"

21. Henry Spencer - Usenet History Archives "history" file.

22. From Amanda Walker, Tue, Oct. 16, 09:11 PDT, 1990, Usenet History Archives: "Indeed. I suspect that there are any number of examples of this, but the most egregious in my experience was at CWRU. The ECMP department had a VAX 11/780 on Usenet ("cwruecmp"), and the campus computer center had a DEC-20 in the room next door. The machines were separated by a grand total of about 30 feet and a piece of wallboard, but the computer center was not at all interested in "catering" to "those CS types" by stringing an RS-232 line between them. So, it was possible to send mail between them, but only by sending via a route resembling:

```
crwuecmp => decvax => ucbvax (UUCP)
ucbvax => columbia (CU20A, I think)
          (Arpanet)
columbia => cmu-cs-c => cwru20
          (CCnet)
```

Yup, that's three networks, and two coasts just to get through a piece of sheetrock :-). Took about a week, too."

23. Alexander McKenzie, "Indeed, during a typical measurement period in June 1988, over 50% of the active Arpanet hosts were gateways, and they accounted for over 80% of the traffic." pg. 369

24. At AT&T, the computers "research", then "allegra", then "ihnp4" served as major mail and/or news distribution sites. At DEC - "decvax" gradually increased its role (e.g., "decvax" in New Hampshire would call long distance to San Diego across the country.)

25. Andrew Tabenbaum is quoted as saying something similar to "Never underestimate the bandwidth of a station wagon full of 9 track tape (or magnetic tape)."

26. "Flame Wars" (highly emotional attacks) can become annoying. There are ebbs and flows of interesting posts. Even though Usenet is addicting, it can also be overwhelming.

27. Ithiel de Sola Pool, Technologies Without Boundaries, Cambridge 1990, pg. 56.

28. From the Usenet History Archives.

29. From the "posthist" file from Usenet History Archives.

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BULGARIAN VIRUS FACTORY (CONTINUACAO)

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3) New ideas.

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As it can be seen from the examples above, the whole of Bulgaria has turned into some kind of computer virus developing laboratory, where any capable (or not so capable) pupil/student/ programmer is tempted to write his own virus and to test it in the wild. It is not therefore unusual that several completely new ideas were first developed in our country. I shall try to enumerate here some (only the most important) of them.

- The interrupt tracing technique, capable of finding the original handler (in DOS or BIOS) of any interrupt vector, has been first implemented in the YANKEE DOODLE (TP) viruses. Later other viruses in the world began to use it (4096, NAUGHTY HACKER).

- The "fast infectors" --- viruses that infect on file opening or

even on any file operation were first developed in Bulgaria. The first such virus was the DARK AVENGER. Now there are a lot of fast infectors. One of them --- 1963 --- even infects on file deletion.

- The "semi--stealth" viruses --- viruses that hide the increasing of the size of the infected files (the 651 virus) or that remove them from the infected files when one loads them with a debugger (YANKEE DOODLE) both are viruses, made in our country.
- Hiding the true file length usually causes problems, because CHKDSK is able to detect the difference between the disk space marked as used in the FAT and the reported file length. Only two Bulgarian viruses in the world are able to handle this problem --- DIAMOND and V2100.
- The first really "stealth" file infector --- the 512 virus was Bulgarian. It is true however, that the idea has been discovered independently almost at the same time in other parts of the world (the 4096 virus from Israel).
- The only known stealth parasitic virus, which "stealthy" features go down to the BIOS level (i.e., it cannot be detected if active in memory even if the infected file is read at sector and not at file level) is the Bulgarian INT13 virus.
- One of the first multi--partite viruses (viruses that are able to infect both files and boot sectors) --- the ANTHRAX virus, has been developed in Bulgaria. It is true, however, that similar ideas can be noticed in the 4096 and GHOST BALLS viruses, which are developed much earlier. Also, other multi--partite viruses (VIRUS-101, V-1, FLIP, INVADER) were created independently almost at the same time (and even earlier) in other parts of the world.
- The idea first used in the LEHIGH virus --- to place the virus body in an unused part of the file COMMAND.COM has been further developed by several Bulgarian viruses. They all can infect any COM or EXE file (unlike the LEHIGH virus) in the usual way, but when they are infecting the command interpreter, they place themselves in an area filled with zeros at the end of the file and thus in this case they do not increase its length. Such viruses are TERROR, NAUGHTY HACKER and others.
- The method, mentioned above has been developed even further by other Bulgarian viruses. They have noticed that any sufficiently large area of zeros in any file (not just COMMAND.COM) can be used to hide the virus body. The viruses that use this method are again of Bulgarian origin --- PROUD, EVIL, PHOENIX, RAT, DARTH VADER... The latter even does not write to the infected files --- it leaves this task to DOS. And the RAT virus hides itself into the unused part of the EXE file headers.
- One of the extremely mutating viruses is the Dark Avenger's virus LEECH. It can exist in more than 4.5 billion variants. It is true, however, that this is neither the first entirely mutating virus (1260 being the first), nor it has the most flexible mutating mechanism (it is much simpler than V2P6Z).
- A completely new type of computer virus (DIR II) has been developed by two Bulgarian pupils. This virus does not infect neither files, nor boot sectors. Instead, it infects file systems as a whole, or

more exactly --- directory entries.

- Different tricks to get control without directly hooking the INT 21h vector were developed by several Bulgarian virus writers. The TERROR virus places a JMP instruction to its body in the original INT 21h handler in DOS. The viruses from the PHOENIX family ( 800, 1226, PROUD, EVIL, PHOENIX) hook an interrupt that is called by DOS on every file--related function (INT 2Ah, AH=82h). The DIR II virus patches itself in the chain of DOS disk device drivers.
- The first virus, that is able to infect device drivers (SYS files only), is, of course, Bulgarian. This is the HAPPY NEW YEAR ( 1600) virus.
- The first fully functional parasitic virus, written entirely in a high level language (Turbo PASCAL) is the Bulgarian virus SENTINEL.
- The Bulgarian virus ANTHRAX is the first virus that is resident in memory only temporary. It removes itself from there after it has infected the first file and then acts as a non--resident virus.
- The shortest memory resident virus in the IBM PC world --- only 128 bytes --- is again developed in Bulgaria. There are reports about a 108--byte resident virus, also from there, but they are unconfirmed yet.
- The shortest virus in the IBM PC world --- only 45 bytes long, is the Bulgarian virus MINIMAL-45. It seems possible, however, to shorten it even further --- up to 31 bytes, with a big loss of reliability.

#### 4) Why so many viruses are created in Bulgaria.

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Computer viruses are created in all parts of the world, not only in Bulgaria. However, the portion of them that are created in our country is extremely high. Therefore, in the whole world there exist preconditions that make virus writing tempting, but in Bulgaria there exist specific conditions as well.

#### 4.1) Specific reasons for virus writing in Bulgaria.

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##### 4.1.1)

The first, and most important of all is the existence of a huge army of young and extremely qualified people, computer wizards, that are not actively involved in the economic life.

The computerization in Bulgaria began without economical reasons. Since our country was a socialist one, its economics was of administrative type. The economics didn't need to be computerized. In fact, computers and planned economics are quite incompatible --- computers help you to produce more in less time and with less effort and money, while the goal of a manager in a planned economics is to fulfil the plan exactly as it is given --- for no more and no less time, and with no more and no less money. However, the communist party leaders in Bulgaria decided that we should computerize --- mainly to be able to supply computers to the Soviet Union and circumvent the embargo.



While computerization in itself is not a bad thing, we made a very severe mistake. Bulgarian economics was very weak (now it is even weaker), but we had quite a lot skilled people. Therefore, we should not have tried to produce hardware while we had good chances in the software industry, where mainly "brainware" is required. However, Bulgaria did just the opposite. Instead of buying the hardware, we began to produce it (mainly illegal Apple and IBM clones). Instead of producing our own software and to try to sell it in the West, we began to steal Western computer programs, to change some copyright notices in them, and to re--sell them (mainly in Bulgaria, in the Soviet Union, and in the other countries of the former Eastern block).

At that time most Western software was copy protected. Instead of training our skilled people in writing their own programs, we began to train them to break copy protection schemes. And they achieved great success in this field. The Bulgarian hackers are maybe the best in cracking copy protected programs. Besides, they had no real hope in making and selling their own programs, since, due to the total lack of copyright law on computer software, it was impossible to sell more than two or three examples of a computer program in Bulgaria. The rest were copied.

Since the introduction of computers in the Bulgarian offices was not a natural process, but due to an administrative order, very often these computers were not used --- they were only considered as an object of prestige. Very often on the desk of a company director, near the phone, stood a personal computer. The director himself almost never used the computer --- however sometimes his/her children came to the office to use it --- to play games or to investigate its internals. While the price of personal computers in Bulgaria was too high to permit a private person to have his/her own computer, it was a common practice to use the computer at the office for personal reasons. At the same time, the computer education was very widely introduced in Bulgaria. Everyone was educated in this field --- from children in the kindergartens to old teachers that had just a few years until pension. Since this kind of science is better comprehended by younger brains, it is no wonder that the people, who became most skilled in this field, were very young. Very young and not morally grown--up. We spent a lot of effort teaching these people how to program, but forgot to educate them in computer ethics. Besides, the lack of respect to the others' work is a common problem in the socialist societies.

4.1.2)

The second main reason is the wide--spread practice of software pirating (which was, in fact, a kind of state policy) and the very low payment of the average programmers.

As was mentioned above, Bulgaria took the wrong decision in producing computers and stealing programs. There is still no copyright law, concerning computer software there. Because of this, the software piracy was an extremely widespread practice. In fact, almost all software products used were illegal copies. Most people using them have never seen the original diskettes or original documentation. Very often there was no documentation at all.

Since all kinds of programs (from games to desktop publishing

systems) were copied very often, this greatly helped for the spread of computer viruses.

At the same time, the work of the average programmer was evaluated very low --- there were almost no chances to sell his/her software products. Even now, a programmer in Bulgaria is paid 100 to 120 times less than the programmer with the same qualification in the USA.

This caused several young people to become embittered against the society that was unable to evaluate them as it should. There is only one step in the transformation of these young people into creators of destructive viruses. Some of them (e.g., the Dark Avenger) took this step.

#### 4.1.3)

The third major reason is the total lack of legislative against creation and willful distribution of computer viruses and against illegal access and modification of computer information in general.

Because of the lack of copyright laws on computer software, there is no such thing as ownership of computer information in Bulgaria. Therefore, the modification or even the destruction of computer information is not considered a crime --- since no one's property is damaged.

The Bulgarian legislature is hopelessly old in this area. Furthermore, even if the appropriate law is accepted in the future, as a punishing law it will not be able to be applied to crimes, committed before it was passed. Therefore, the virus writers still have nothing to fear of.

That is why, the creation of new computer viruses has become some kind of sport or entertainment in Bulgaria.

#### 4.1.4)

The next reason is the very weak organization of the fight against computer viruses in Bulgaria. Just now our country is in a very deep economical crisis. We lack funds for everything, including such basic goods as food and gasoline. At the same time, the organization of the virus fight would require money --- for the establishment of a network of virus test centers that collect and investigate computer viruses, centers equipped with the best hardware, centers that are able to communicate between themselves and with the other similar centers in the world in an effective way. Such an effective way is the electronic mail system --- and Bulgaria still does its first steps in global computer communications. All this requires a lot of money --- money that our government just does not have now. 4.1.5) Another reason is the incorrect opinion, that the society has on the computer virus problem.

Still, the victims of a computer virus attack consider themselves as victims of a bad joke, not as victims of a crime.

#### 4.1.6)

The least important reason, in my opinion, is the availability and the easy access to information of a particular kind.

All kind of tricks how to fool the operating system circulate among the Bulgarian hackers. Some of them are often published in the computer related magazines. As it was mentioned above, there is even a specialized BBS, dedicated to virus spreading and a special (local to Bulgaria) FidoNet echo, dedicated to virus writing. Not to mention the well--known file INTERxyy, published by Ralf Brown from the USA as shareware. It is very popular in Bulgaria, since it contains, carefully described, a huge number of undocumented tricks.

However, this is not a very important reason. Usually those, who have decided to make a virus already know how to do it, or, at least, can figure it out by themselves. They do not need to take an existing virus and to modify it. The proof is the prevalence of original Bulgarian viruses over the variants of known ones, as well as the fact, that many new ideas for virus writing were first invented and implemented in Bulgaria.

#### 4.2) General reasons.

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Since viruses are also created in all the other parts of the world, there should be also some general reasons for this. These reasons are, of course, valid for Bulgaria too. Let's see these general reasons.

##### 4.2.1) Wish for glory.

Every programmer dreams that his/her program gets widely spread and used. A lot of very good programmers write and distribute wonderful software packages for free --- with the only intention to have more users using their package. However, for a program to be used, it has to be good enough. And not every programmer is able to make a program so good that the users will widely use it --- even for free. At the same time, computer viruses do spread very widely, regardless and even against the users' will. So, when a virus writer reads in a newspaper that his virus has been discovered at the other end of the world, he feels some kind of perverted pleasure. Some people write viruses just to see their names (or the names of their viruses) published in the newspapers. This reason has yet another aspect. In the beginning of the virus era, when the idea of the computer virus was very new, only the very good programmers were able to make a virus. It became a common myth that if you can write a virus, you're a great programmer. This myth might have been justified at the beginning, but now it is completely without sense. Nevertheless, young hackers began to write viruses --- just to prove to their friends and to the rest of the world how good programmers they are. Some of them were really unable to invent something original --- that's why they just picked a known virus, modified it a bit and released this new mutation. This explains why there are so many variants of the simplest viruses that were first created --- BRAIN, JERUSALEM, STONED, VIENNA, CASCADE... A typical example is the Italian virus writer, who calls himself Cracker Jack.

##### 4.2.2) Simple human curiosity.

One has to admit that the idea of a computer program that is able to spread by its own means, to replicate, to hide from the user (who is believed to maintain the computer under full control), and in general to behave as a real live being is really fascinating. Just simple

human curiosity is sufficient to make some people, if they are young and irresponsible enough, to try to make a computer virus. Some of them do succeed. A greater and greater part, if we consider the amount of last reports for new viruses. Some of them claim that they are writing viruses "only for themselves," "only for fun," and that "they do not spread them." However, it is often impossible to fully control the spread of a "successful" computer virus. The more clever these viruses are, the greater the probability that they will "escape." There is an idea to teach students how viruses are made --- of course in a very strongly restricted environment. Maybe at least for some this will fulfil their curiosity and they will not be tempted to write their own virus. Maybe if we force every computer science student to learn Dr. Fred Cohen's theorems on the computational aspects of computer viruses, if we administer an exam and ask students to design a virus protection scheme or to help a cluster of users, attacked by a computer virus for a course work --- well, maybe in this case these students will have more than enough of the computer virus problem and will not want to hear about it any more --- least to make their own viruses. 4.2.3) Easy access to information.

Sufficient information, needed to write a virus can be found easily. This information is often even more accessible than in Bulgaria.

The person that wants to write an average virus needs only to dig in the respective manuals --- manuals, which are often not available in Bulgaria. However, the usefulness of the easy access to this information is much greater than the damage, caused by the fact that it is used by the virus writers.

#### 4.2.4) Military interests.

It is often rumoured that the superpowers are working on the problem how to use computer viruses to destroy the enemy computers' software. It is even very probable, that in several countries such research is performed. There are reports on this from the USA, France and the USSR.

This is no wonder --- it is the right of every military force to investigate any new idea and to consider the possible usefulness and/or threats it might bring to the national defense. However, it is quite improbable that the computer viruses can be used for this purpose. Just like the live viruses, the computer ones are able to spread only among individuals with very similar immunotype, i.e. --- among compatible computers. The most widely used kinds of personal computers are the IBM PC, Macintosh, Amiga and Atari ST. It is therefore no wonder that the vast majority of existing computer viruses are able to infect only these computers. In the same time, viruses that infect one kind of computer (say, IBM PC), are unable to spread (or even to run) on another (e.g., a Macintosh). They are usually not able to run even on two different operating systems in one and the same computer. Even a different version of the same operating system might cause big problems to a particular computer virus --- up to preventing it to work. The common personal computers are never assigned important tasks in the army. Therefore, even if a virus infects them, and even if it destroys all the data on all such computers, the caused damage will not be of great importance. Computers that are used for the really important things, such as rocket leading or cannon aiming, are always specialized ones. Their programs are usually hard-coded and only data can be entered in

them. It is not possible to insert an infected IBM PC diskette in the computers that control the NORAD system. At the same time, the computers that control different important devices are usually incompatible even between themselves. Therefore, even if someone writes a virus for a specialized rocket computer, this virus will not be able to infect the computers of a strategic bomber or even these of a rocket of a different system. So, such virus will not spread very much. And last, but not least, such virus has to be placed somehow in the enemy's computers. Since, as we saw above, it won't be able to spread from one computer to another of a different kind, obviously someone has to insert it in the victim computer. But if you have access to the enemy's computers, you don't need a virus. You can do the same task easier (and often much better) "manually", or with a Trojan horse or a logic bomb. 4..2.5) Corporate interests.

It is also often speculated that the large software companies and the producers of anti--virus software make or willfully spread computer viruses.

There is some reason behind this. Indeed the fear of viruses can make the user buy only original software (sometimes --- quite expensive), and not to use pirated copies, shareware or freeware. At the same time, companies that produce anti--virus software are interested that their products are sold. And they will be, if the user needs anti--virus protection. However, it is rather improbable, that a software company (whether producing or not anti--virus software) will take the risk to become known that it willfully spreads viruses. It will be probably boycotted by its users and the losses of income will be much greater than any gains. As to the producers of anti--virus software, they don't need to write viruses themselves, in order to sell their programs. It is sufficient to use the hype that the media accords to the problem, to mention how many viruses there are and how many of them their wonderful product is able to defeat.

5) The Soviet virus factory and virus writing in the other countries  
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of the former Eastern block.  
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While Bulgaria was one of the best computerized countries in East Europe, the political, economical, and social conditions in the other countries were (and maybe still are) quite similar. That is why the virus writing and spreading has been developed in these countries too.

Viruses are created in Poland ( W13, 217, 583, FATHER CHRISTMAS, DOT EATER, JOKER, VCOMM, AKUKU, 311, HYBRYD), in Hungary ( STONE `90, FILLER, MONXLA, POLIMER, TURBO KUKAC), in Czechoslovakia (the AANTIVIRUS virus), and even in Yugoslavia ( 17Y4, SVIR). According to some reports from Romania, there are no viruses written there, but the W13, YANKEE DOODLE, DARK AVENGER and StONED viruses are quite widespread.

However, the country most similar to Bulgaria is, undoubtedly, the Soviet Union. According to the Soviet anti--virus researcher Bezrukov [Bezrukov], the first virus appeared there almost at the same time as in Bulgaria and, by the way, it was the same virus ( VIENNA). So, the preconditions are almost the same as with our country.

There are, however, two main differences: the level of

computerization and the number of virus writers.

The level of computerization is still much lower than in Bulgaria. There are much fewer computers per person than in our country. The users are much more isolated, due to the much larger distances. The telephone network is in the same miserable condition, as in Bulgaria. The networks are very few and not widely used. For instance, in Sofia alone there are more FidoNet nodes than in the whole Soviet Union. It is not safe to send floppy disks by regular mail, since they will be probably stolen. All this delays very much the spreading of viruses. Unfortunately, it also delays the distribution of anti-virus products and the information exchange between the anti-virus researchers. For instance, examples of new viruses created there reach the Western anti-virus researchers with huge delays. Unfortunately, the other factor is much more dangerous. In the USSR there are much more programmers than in Bulgaria and they seem at least as much motivated in creating new viruses. The virus writing in the Soviet Union is currently in the same state as it was in Bulgaria about three years ago. However, at that time only nine variants of known viruses and one stupid original virus has been created there (6 VIENNA variants, 3 AMSTRAD variants, and the OLD YANKEE virus). At the first Soviet anti-virus conference in Kiev (mid-November, 1990) more than 35 different viruses of Russian origin were reported.

Some of them were variants of known viruses, while others were completely new. It has been noticed that the Soviet virus writers are less qualified than the Bulgarian ones, but they use a destructive payload in their creations much more often.

Since the reasons of virus writing in the USSR are very similar to those in Bulgaria; since this virus writing occurs in a much larger scale; and since no steps are taken by the authorities in order to stop it, it is possible to predict that in the next few years the Soviet Union will be far ahead of Bulgaria in computer virus creation and that a new, much larger wave of computer viruses will come from there. Probably after a year, several (up to ten) virus writers with the qualification of the Dark Avenger will emerge from there.

6) The impact of the Bulgarian viruses on the West and on the national  
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software industry.  
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While a huge part of the existing viruses are produced in Bulgaria, a relatively very small part of them spread successfully to the West. Of more than 160 Bulgarian viruses, only very few ( DARK AVENGER, V2000, V2100, PHOENIX, DIAMOND, NOMENKLATURA, VACSINA, YANKEE DOODLE) are relatively widespread. At the same time some of them ( DARK AVENGER, V2000, YANKEE DOODLE, VACSINA) are extremely widespread. According to John McAfee, about 10 % of all infections in the USA are caused by Bulgarian viruses --- usually by the DARK AVENGER virus. In West Europe this virus shares the popularity with YANKEE DOODLE and VACSINA.

Of the viruses listed above, the major part are written by the Dark Avenger --- all except YANKEE DOODLE and VACSINA. Almost all his viruses (in this case --- with the exception of DIAMOND, which is the least spread) are extremely destructive. The PHOENIX and NOMENKLATURA viruses corrupt the FAT in such a subtle way, that when the user notices the damage, there is no way to disinfect the infected files

and even to determine which files are damaged. The only way is to reformat the hard disk.

It is difficult to estimate the costs of all damage caused by Bulgarian viruses. There are reports from Germany about a 10,000,000 DM damage, caused only by the VACSINA virus. It is probable, however, that these numbers are largely overestimated.

The huge number of known Bulgarian viruses causes also indirect damage to the West community, even if the viruses themselves do not escape from Bulgaria, but only examples of them are supplied to the anti-virus researchers. These researchers have to develop anti-virus programs against these viruses (just in case the latter succeed to spread outside Bulgaria). Therefore, they have to waste their time and efforts. Furthermore, the user is forced to buy new anti-virus programs (or pay for updates of the old ones), in order to feel safe against these viruses. In the same time, the creation and spreading of Bulgarian viruses causes a lot of damage to the Bulgarian economics. In Bulgaria, the Bulgarian viruses are much more widespread. More than 80 % of about 160 known Bulgarian viruses have been detected in the wild in our country. It is difficult, however, to evaluate, or even to estimate the exact costs of the caused damage, since in Bulgaria the term "property of computer information" simply does not exist in legal sense. It is the same with the cost of this information. In fact, the creation of computer viruses causes also indirect damage to our economics. First of all, a lot of extremely capable people are wasting their minds to create destructive viruses, instead of something useful. Second, the fact that the Bulgarian programmers use their time to create computer viruses destroys their reputation as a whole. No serious software company accepts to deal with Bulgarian programmers or software companies, because it is afraid that the supplied software might be pirated or might contain a virus. 7) Conclusion. Virus writing in Bulgaria is an extremely widespread hobby. Most of the major virus writers are known, but no measures can be taken against them. Their work causes a lot of damage to the Western community, as well as to the national economics. Therefore, it is urgent to take legal measures in this direction; measures that will make virus writing and willful spread of computer viruses a criminal act. This is the only way to stop, or at least to reduce the threat.

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PODE ACONTECER COM VOCE..

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Scarry Tale: (Vulgo historia de terror)

Observacao: Isto dai foi copiado da revista 2600, um numero antigo. Tenho a permissao do editor. Nao conheco a pessoa envolvida no lance mas sinto que e' necessario instruir a mocada, e a melhor forma e' usar essa historia. Pedi pra um amigo traduzir e nao tive tempo de corrigir, vou avisando. Dito isso, boa (?) leitura:

Amigo 2600

Que isto que aconteceu comigo sirva de licao para aqueles que entram no mundo ilegal.

Na noite de 27 de junho de 1988 eu voltava para casa com alguns amigos as 1:45 da manha. Estacionei o meu carro na frente do meu apartamento. Eu sou, normalmente uma pessoa preocupada com seguranca, vivo olhando sobre o meu ombro e nunca super estimo a minha seguranca. Muitas pessoas me conhecem no mundo IBM/Apple modem hacking. Mas suncam deixo as pessoas me conhecerm suficientemente bem. Pelo menos assim eu pensava. Assim que eu pisei na calçada da frente do meu apartamento, escutei alguem chamando o meu nome. Senti que algo estava errado. A policia local, detetives e agentes do FBI estiveram me observando e esperando o dia todo.

Instantaneamente havia carros de policia por toda parte e estava sendo algemado e revistado. Toda a vizinhanca acordou com o movimento e as luzes. Certamente eu nao disse um palavra. Eu sabia que eles queriam entrar no meu apartamento e discutir a questao la dentro. Eu tambem sabia melhor do que ninguem que nao se deve guardar nada que possa te comprometer no teu apartamento. Eu nao ia facilitar o trabalho deles.

Bem, isto foi a seis meses e desde entao estou preso.

Naquela noite me levaram para uma pequena e conservadora cidade do campo a 250 milhas, eu nunca tinha estado la antes. Eu estava sendo acusado de fraude por computador com um prejuiso de US\$ 150.000,00. Meus pais moram em outra parte do pais e eu mantenho pouco contato com eles e diferente da juventude atual e nao posso ligar para papai e maae e pedir que venham me salvar e pagar as minhas dividas.

Eu preciso agora pagar pelos meu proprios erros, mas a maneira com eu foi pego mostra que qualquer que tenha atividade ilegais precisa tomar muito cuidado. Em fevereiro de 1988 eu encontrei um pessoa que me conhecia de varias BBS. Nos estavos frequentando a mesma escola, e entao eu decidi que deviamos nos encontrar.

Jantamos juntos e conversamos muito. Estava indo bem, mas em nenhum momento eu revelei o meu verdadeiro nome. Claro isto isto e perfeitamente normal e bem aceito em "comunidade modem" .

Esta foi a ultima vez que o vi. Mais ou menos um mes atras este este "amigo" foi visitado pela policia local. Provavelmente um outro Hacker (estou usando o termo genericamente) que tinha um pouco de rancor do nosso "amigo", como uma especie de viganca revelou para a policia que este meu "amigo" era um "code abuser".

Imediatamente suas linhas telefonicas foram grampeadas.

Tres meses depois e trinta rolos DNR de papel a procura terminou. Sua residencia foi cercada e todos os equipamentos telefonicos foram apreendidos para examinacao. Este nosso "amigo" foi sufientemente esperto para nao falar nada sem a presenca de um advogado. Entao a policia o liberou sem multas, naquele momento. Ele foi esperto em ficar quieto, que pena que esta conduta nao continuou.

A maioria das pessoas subestima os detetives da policia ou FBI. Nunca pense desta maneira.

Meu "amigo" foi interrogado muitas veses depois, hoje eu tenho todos os



interrogatorios. Ele revelou varios nomes que forneceram codigos, senhas, contas etc. Ele tambem disse que tinha um amigo que vivia atualmente neste estado que estava envolvidos em avarias atividades similares as dele. Ele disse a policia o que sabia sobre mim, que nao era muito, nome e sobrenome que ele achava ser os meus.

Algum tempo depois a policia voltou perguntando se ele sabia mais alguma coisa ao meu respeito, pois eles nao tinham encontrado nada sobre aquela pessoa. Ele podia ter pensado tudo menos que talvez eu tivesse algum dia morado em outra regioao.

Muitos anos atras eu foi preso, junto com alguns amigos tentando comprar bebida alcoolica. Fomos liberados sem multa daquela vez mas minha foto ficou nos arquivos da policia. Minha descricao foi enviada para todo o pais e retornaram inumeras fotos que se encaixavam na descricao.

O relatorio da policia diz que o nosso "amigo" apontou para a foto 13 sem exitacao, dizendo ser o sujeito procurado. No dia seguinte foram tomadas as devidas precaucoes por parte da policia e aqui estou eu na prisao federal. Desde aquele dia eu nao disse uma palavra. Nao disse nada que pudesse aliviar a minha pena, como fornecer nomes. Mas agora e tarde eu estava no meu ultimo ano da faculdade e estava fazendo curso de verao. Tinha um excelente emprego com o DoD (Departamento de Defesa) e o meu futuro era promissor. Eu nao ia fazer mais nada ilegal e ia andar na linha.

Todo isto se foi agora. Mesmo se eu sair da cadeia sem multas, eu ja perdi o semestre inteiro na faculdade e tenho poucas esperancas de ter o meu emprego de volta depois da vinda do FBI ao meu escritorio. Eu perdi seis meses da minha vida para sempre.

Minha prisao foi noticiada em todos os jornais e meu futuro neste estado parece dificil.

A juventude e uma provacao.

A mensagem desta carta e caso voce ingreze no mundo ilegal nao confie em ninguem. Nao existe uma unica pessoa que voce possa confiar. Quando mais de uma pessoa e presa sao oferecidas vantagens para quem testemunhar contra os amigos. Eu nao guardo rancores da pessoa que me pos nesta situacao. Eu estaria mentindo se dissesse que nunca fiz nada errado.(... ..) E terrivel que que vivamos numa epoca em que amigos de outrora, agora testemunham contra voce.

Caso se encontre algum dia numa situacao como a minha, nunca e pouco lembrar quanto e importante nao dizer nada, nunca faca algum tipo de acordo. A policia nao esta aqui para te ajudar. Nunca tente mentir ou engana-los. Eles tem mais recursos doque voce pode imaginar. Eu escutei pessoas dizer que "saberiam exatamente oque faze e dizer" caso sejam presas, mas tristemente, quando se vive a situacao, e impressionante como muitas pessoas nao aguentam. A policia e boa no que ela faz. Ele disseram varias vezes que ja tinha quase 36 anos.

A melhor coisa a fazer em tal situacao e contratar um advogado. Eles podem descobrir exatamente oque a policia sabe a seu respeito e qual e a sua verdadeira situacao.

Se os adolescentes tivessem me escutado antes nenhum de nos estaria nesta situacao. Minha unica esperanca e atingir aqueles que foram delatados antes que eles se achem na mesma situacao.

Toda vez que voce deixa o seu telefone em um boletim board voce esta se expondo. Voce confia que o sysop nunca vai revelar esta informacao. Voce esta arriscando sua liberdade.

No atual "Hacker world" as pessoas teram que melhorar sua seguranca para nunca se verem nesta situacao.

#### MURPHY'S LAWS AND OTHER OBSERVATIONS

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(No proximo numero, talvez eu coloque as leis de murphy aplicadas ao exercito - existe traducao, porem voce nao acha quem tem os 3 livros)

## MURPHY'S LAWS

1. IF ANYTHING CAN GO WRONG, IT WILL.
2. IF THERE IS A POSSIBILITY OF SEVERAL THINGS GOING WRONG, THE ONE THAT WILL CAUSE THE MOST DAMAGE WILL BE THE FIRST ONE TO GO WRONG.
3. IF ANYTHING JUST CANNOT GO WRONG, IT WILL ANYWAY.
4. IF YOU PERCEIVE THAT THERE ARE FOUR POSSIBLE WAYS IN WHICH SOMETHING CAN GO WRONG, AND CIRCUMVENT THESE, THEN A FIFTH WAY, UNPREPARED FOR, WILL PROMPTLY DEVELOP.
5. LEFT TO THEMSELVES, THINGS TEND TO GO FROM BAD TO WORSE.
6. IF EVERYTHING SEEMS TO BE GOING WELL, YOU HAVE OBVIOUSLY OVERLOOKED SOMETHING.
7. NATURE ALWAYS SIDES WITH THE HIDDEN FLAW.
8. MOTHER NATURE IS A BITCH.

O'TOOLE'S COMMENTARY ON MURPHY'S LAWS (comentario de Eugene Gudín)

MURPHY WAS AN OPTOMIST.

GINSBERG'S THEOREMS (Na edicao brasileira, isso foi chamado de Teorema Botafoguense)

1. YOU CAN'T WIN.
2. YOU CAN'T BREAK EVEN.
3. YOU CAN'T EVEN QUIT THE GAME.

FORSYTH'S SECOND COROLLARY TO MURPHY'S LAWS

JUST WHEN YOU SEE THE LIGHT AT THE END OF THE TUNNEL, THE ROOF CAVES IN.

WEILER'S LAW

NOTHING IS IMPOSSIBLE FOR THE MAN WHO DOESN'T HAVE TO DO IT HIMSELF.

## THE LAWS OF COMPUTER PROGRAMMING

1. ANY GIVEN PROGRAM, WHEN RUNNING, IS OBSOLETE.
2. ANY GIVEN PROGRAM COSTS MORE AND TAKES LONGER EACH TIME IT IS RUN.
3. IF A PROGRAM IS USEFUL, IT WILL HAVE TO BE CHANGED.
4. IF A PROGRAM IS USELESS, IT WILL HAVE TO BE DOCUMENTED.
5. ANY GIVEN PROGRAM WILL EXPAND TO FILL ALL THE AVAILABLE MEMORY.
6. THE VALUE OF A PROGRAM IS INVERSELY PROPORTIONAL TO THE WEIGHT OF ITS OUTPUT.
7. PROGRAM COMPLEXITY GROWS UNTIL IT EXCEEDS THE CAPABILITY OF THE PROGRAMMER WHO MUST MAINTAIN IT.

## PIERCE'S LAW

IN ANY COMPUTER SYSTEM, THE MACHINE WILL ALWAYS MISINTERPRET, MISCONSTRUE, MISPRINT, OR NOT EVALUATE ANY MATH OR SUBROUTINES OR FAIL TO PRINT ANY OUTPUT ON AT LEAST THE FIRST RUN THROUGH.

## COROLLARY TO PIERCE'S LAW

WHEN A COMPILER ACCEPTS A PROGRAM WITHOUT ERROR ON THE FIRST RUN, THE PROGRAM WILL NOT YIELD THE DESIRED OUTPUT.

## ADDITION TO MURPHY'S LAWS

IN NATURE, NOTHING IS EVER RIGHT. THEREFORE, IF EVERYTHING IS GOING RIGHT... SOMETHING IS WRONG.

#### BROOK'S LAW

IF AT FIRST YOU DON'T SUCCEED, TRANSFORM YOUR DATA SET!

#### GROSCH'S LAW

COMPUTING POWER INCREASES AS THE SQUARE OF THE COST.

#### GOLUB'S LAWS OF COMPUTERDOM

1. FUZZY PROJECT OBJECTIVES ARE USED TO AVOID EMBARRASSMENT OF ESTIMATING THE CORRESPONDING COSTS.
2. A CARELESSLY PLANNED PROJECT TAKES THREE LONGER TO COMPLETE THAN EXPECTED; A CAREFULLY PLANNED PROJECT TAKES ONLY TWICE AS LONG.
3. THE EFFORT REQUIRED TO CORRECT COURSE INCREASES GEOMETRICALLY WITH TIME.
4. PROJECT TEAMS DETEST WEEKLY PROGRESS REPORTING BECAUSE IT SO VIVIDLY MANIFESTS THEIR LACK OF PROGRESS.

#### OSBORN'S LAW

VARIABLES WON'T; CONSTANTS AREN'T.

#### GILB'S LAWS OF UNRELIABILITY

1. COMPUTERS ARE UNRELIABLE, BUT HUMANS ARE EVEN MORE UNRELIABLE.
2. ANY SYSTEM THAT DEPENDS UPON HUMAN RELIABILITY IS UNRELIABLE.
3. UNDETECTABLE ERRORS ARE INFINITE IN VARIETY, IN CONTRAST TO DETECTABLE ERRORS, WHICH BY DEFINITION ARE LIMITED.
4. INVESTMENT IN RELIABILITY WILL INCREASE UNTIL IT EXCEEDS THE PROBABLE COST OF ERRORS, OR UNTIL SOMEONE INSISTS ON GETTING SOME USEFUL WORK DONE.

#### LUBARSKY'S LAW OF CYBERNETIC ENTOMOLOGY

THERE'S ALWAYS ONE MORE BUG.

#### TROUTMAN'S POSTULATE

1. PROFANITY IS THE ONE LANGUAGE UNDERSTOOD BY ALL PROGRAMMERS.  
(A segunda linguagem dominada por todos os programadores e' a pornografica)
2. NOT UNTIL A PROGRAM HAS BEEN IN PRODUCTION FOR SIX MONTHS WILL THE MOST HARMFUL ERROR BE DISCOVERED.
3. JOB CONTROL CARDS THAT POSITIVELY CANNOT BE ARRANGED IN IMPROPER ORDER WILL BE.
4. INTERCHANGEABLE TAPES WON'T.
5. IF THE INPUT EDITOR HAS BEEN DESIGNED TO REJECT ALL BAD INPUT, AN INGENIOUS IDIOT WILL DISCOVER A METHOD TO GET BAD DATA PAST IT.
6. IF A TEST INSTALLATION FUNCTIONS PERFECTLY, ALL SUBSEQUENT SYSTEMS WILL MALFUNCTION.

#### WEINBERG'S SECOND LAW

IF BUILDERS BUILT BUILDINGS THE WAY PROGRAMMERS WROTE PROGRAMS, THEN THE FIRST WOODPECKER THAT CAME ALONG WOULD DESTROY CIVILIZATION.

GUMPERSON'S LAW

THE PROBABILITY OF ANYTHING HAPPENING IS IN INVERSE RATIO TO ITS DESIRABILITY.

GUMMIDGE'S LAW

THE AMOUNT OF EXPERTISE VARIES IN INVERSE RATIO TO THE NUMBER OF STATEMENTS UNDERSTOOD BY THE GENERAL PUBLIC.

ZYMURGY'S FIRST LAW OF EVOLVING SYSTEM DYNAMICS

ONCE YOU OPEN A CAN OF WORMS, THE ONLY WAY TO RECAN THEM IS TO USE A LARGER CAN (OLD WORMS NEVER DIE, THEY JUST WORM THEIR WAY INTO LARGER CANS).

HARVARD'S LAW, AS APPLIED TO COMPUTERS

UNDER THE MOST RIGOROUSLY CONTROLLED CONDITIONS OF PRESSURE, TEMPERATURE, VOLUME, HUMIDITY AND OTHER VARIABLES, THE COMPUTER WILL DO AS IT DAMN WELL PLEASES.

SATTINGER'S LAW

IT WORKS BETTER IF YOU PLUG IT IN.

JENKINSON'S LAW (Lei de Sartre - na traducaõ)

IT WON'T WORK.

HORNER'S FIVE THUMB POSTULATE

EXPERIENCE VARIES DIRECTLY WITH EQUIPMENT RUINED.

CHEOP'S LAW

NOTHING EVER GETS BUILT ON SCHEDULE OR WITHIN BUDGET.

RULE OF ACCURACY

WHEN WORKING TOWARD THE SOLUTION OF A PROBLEM, IT ALWAYS HELPS IF YOU KNOW THE ANSWER.

ZYMURG'S SEVENTH EXCEPTION TO MURPHY'S LAW

WHEN IT RAINS, IT POURS

PUDDER'S LAWS

1. ANYTHING THAT BEGINS WELL ENDS BADLY
2. ANYTHING THAT BEGINS BADLY ENDS WORSE.

WESTHEIMER'S RULE

TO ESTIMATE THE TIME IT TAKES TO DO A TASK: ESTIMATE THE TIME YOU THINK IT SHOULD TAKE, MULTIPLY BY TWO AND CHANGE THE UNIT OF MEASURE TO THE NEXT HIGHEST UNIT. THUS, WE ALLOCATE TWO DAYS FOR A ONE HOUR TASK.

STOCKMAYER'S THEOREM

IF IT LOOKS EASY,IT'S TOUGH.IF IT LOOKS TOUGH,IT'S DAMN NEAR IMPOS-  
SIBLE.

ATWOODS COROLLARY

NO BOOKS ARE LOST BY LENDING EXCEPT THOSE YOU PARTICULARLY WANTED TO  
KEEP.

JOHNSON'S THIRD LAW

IF YOU MISS ONE ISSUE OF ANY MAGAZINE,IT WILL BE THE ISSUE THAT CON-  
TAINS THE ARTICLE,STORY OR INSTALLMENT YOU WERE MOST ANXIOUS TO READ.

COROLLARY TO JOHNSON'S THIRD LAW

ALL OF YOUR FRIENDS EITHER MISSED IT,LOST IT OR THREW IT OUT.

HARPER'S MAGAZINE LAW

YOU NEVER FIND THE ARTICLE UNTIL YOU REPLACE IT.

BROOKE'S LAW

ADDING MANPOWER TO A LATE SOFTWARE MAKES IT LATER.

FINAGLE'S FOURTH LAW

ONCE A JOB IS FOULED UP,ANYTHING DONE TO IMPROVE IT WILL ONLY MAKE  
IT WORSE.

FEATHERKILE'S RULE

WHATEVER YOU DID,THAT'S WHAT YOU PLANNED.

FLAP'S LAW

ANY INANIMATE OBJECT,REGARDLESS OF ITS POSITION,CONFIGURATION OR  
PURPOSE,MAY BE EXPECTED TO PERFORM AT ANY TIME IN A TOTALLY UN-  
EXPECTED MANNER FOR REASONS THAT ARE EITHER ENTIRELY OBSCURE OR  
ELSE COMPLETELY MYSTERIOUS.

NOTICIAS - DICAS - CARTAS

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Linux e Apple:

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Apple and Open Software Foundation Announce Linux for Power Macintosh

Leading User-Supported Version of UNIX to be Available to Power  
Macintosh Users

CAMBRIDGE, Massachusetts-February 5, 1996-Apple Computer, Inc.  
announced today that it is supporting a project with the Open Software  
Foundation (OSF) to port Linux, a freely distributed version of UNIX.,  
to a variety of Power Macintosh. products. This version of Linux

operates on the OSF Mach microkernel which will be running natively on the PowerPC microprocessor. The announcement was made at the Conference on Freely Redistributable Software held in Cambridge. A demo of an early prototype was shown as part of the announcement.

"This is part of Apple's overall effort to embrace more open industry standards, particularly those popular in the Internet community," said Ike Nassi, vice president of Apple system software technologies. "This software will be particularly popular with Mac users in higher education as well as the scientific research communities who have asked for our support of Linux."

"We are pleased to be working with Apple on this important new port of the Mach microkernel, now hosting the popular Linux environment," said Ira Goldstein, executive vice president and chief scientist of the Open Software Foundation. "We have a strong working relationship with Apple and this is an important result of our cooperation."

Linux is a broadly used version of UNIX supported by a wide community of programmers. Linux provides UNIX features such as true multitasking, virtual memory, shared libraries, demand loading, TCP/IP networking and many other advanced features. Versions of Linux are being ported to a wide variety of platforms, including other PowerPC-based computers. This effort marks the first time that Linux will be hosted on the Mach microkernel. (For more information, visit the Linux Web site.)

Linux on Power Macintosh will be especially significant in several of Apple's key markets, particularly the higher education and scientific communities. With Linux a student will have an extremely low-cost, yet high-performance PowerPC-based UNIX system for personal use. Advanced research that requires UNIX applications will now be possible on an engineer's personal Macintosh..

"As a long time Linux user, I am absolutely delighted about the announcement of Linux on Power Macintosh," said Professor George Blumenthal, chair of the astronomy & astrophysics department at Lick Observatory, University of California, Santa Cruz. "Now Macs will have a dual personality, in the best sense of the word; on the one hand they will allow users to exploit the ever popular and easy to use Macintosh software, while on the other hand, they now provide a platform that appears virtually identical to the UNIX machines that many of us use daily in our work."

Linux for Power Macintosh adds a new UNIX alternative for PowerPC systems to existing products such as AIX from IBM and MachTen from Tenon Intersystems. This gives Macintosh users a range of options from a free, user supported UNIX implementation up to commercial, mission critical solutions for large enterprises.

In keeping with the spirit of the Linux community, Apple and OSF will make the source code for this Linux port freely available. This includes source code to the Mach microkernel and the required Macintosh platform driver support. Linux is distributed throughout the world over the Internet and other means, generally through the GNU General Public License, which allows people to use it and change it so long as no further restrictions are imposed and that the source code is made available.

Apple and OSF expect that the first port of Linux for Power Macintosh

will be available this summer. The system will initially support the first generation of Power Macintosh computers based on NuBus expansion, and will later be extended to PCI-based Power Macs as well as the upcoming PowerPC Platform (formerly CHRP.) Information regarding this version of Linux is available on the Linux on Power Macintosh web site. Apple expects to make the software available at this location as well.

This project is an outcome of Apple's ongoing relationship with OSF, which includes consulting work for Copland, the next major release of the Mac OS. The Linux port provides Apple an open environment for OS research work, as well as enabling an exciting new opportunity for Power Macintosh users. This port delivers both the Mach 3.0 microkernel (developed by the OSF Research Institute) and Linux as an OS "personality" on Mach. The OSF microkernel was originally developed at Carnegie Mellon as Mach and subsequently enhanced extensively by the OSF Research Institute.

Virus no Windows 95  
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Subject: Win95.Boza (WIN95)

Win95.Boza

It's not a dangerous parasitic NewEXE(PE)-virus. It searches for EXE files, checks the files for the PE signature, then creates in the EXE file a new section named ".vlad", and writes its code into that section.

When infection occurs the virus uses calls to functions GetDir, SetDir, FindFirst, FindNext, OpenFile, LSeek, Read, Write, and CloseFile. First, it gets the current directory, and checks the Windows95 kernel for some specific code. Then the virus searches for .EXE files, and checks them for the PE signature. Then the virus increases NumberOfSections field in PE header, writes into the file new Section Header that describes the new Sections in the file, and writes itself to the end of the file.

When execution occurs the virus infects up to 3 files, and looks for EXE files in parent directories, if there are no more .EXE files in the current one. Before returning to the host program the virus restores the current directory.

The virus checks some data (the system date?) and in some cases displays the messages:

Bizatch by Quantum / VLAD  
The taste of fame just got tastier!  
VLAD Australia does it again with the world's first Win95 Virus  
From the old school to the new..  
Metabolis  
Qark  
Darkman  
Automag  
Antigen  
RhinceWind  
Quantum

Absolute Overlord  
CoKe

The virus also contains the internal text strings:

.vlad

Please note: the name of this virus is [Bizatch] written by Quantum of VLAD

The virus is not bug free, and in some cases Windows95 displays a error message while executing of infected EXE-files.

Keith

```
=====
Central Command Inc.          USA Distributor for
P.O. Box 856                  AntiViral Toolkit Pro
Bruswick, Ohio 44212         216-273-2820
Internet: info@command-hq.com  Compuserve:102404,3654
FTP: ftp.command-hq.com /pub/command/avp      :GO AVPRO
WWW: http://www.command-hq.com/command
=====
```

From: Graham Cluley  
Newsgroups: comp.virus  
Subject: Re: Win95.Boza (WIN95)  
sysop@command-bbs.com (Keith Peer) writes:

> The virus checks some data (the system date?) and in some cases displays  
> the messages:

The date you are looking for is the 31st of any month. You will find further information about this virus at our website:

<http://www.drsolomon.com/vircen/boza.html>

We also have a screenshot of what the dialog looks like there, AND a detection driver which allows users of Dr Solomon's to detect this virus (not that there is any reason to believe this virus is in the wild of course)

Regards  
Graham

- - -

Graham Cluley CompuServe: GO DRSOLOMON  
Senior Technology Consultant, UK Support: support@uk.drsolomon.com  
Dr Solomon's Anti-Virus Toolkit. US Support: support@us.drsolomon.com  
Email: gcluley@uk.drsolomon.com UK Tel: +44 (0)1296 318700  
Web: <http://www.drsolomon.com> USA Tel: +1 617-273-7400

Subject: Re: Boza Virus?

In article <0000ade7+00013f68@msn.com>, taoqi@msn.com says...

>

>Yesterday I heard a report on KCBS AM 740 in San Francisco about what  
>is believed to be the first Win95 specific virus. They think it  
>originated in Australia. I've been searching around the Web, but  
>haven't found anything yet. Has anyone out there heard anything?  
>-George



New York Times Computer News Daily  
[http://nytsyn.com/live/News3/035\\_020496\\_114617\\_28055.html](http://nytsyn.com/live/News3/035_020496_114617_28055.html)

Subject: Re: Boza Virus?

J A S wrote:

>  
> In article <0000ade7+00013f68@msn.com>, taoqi@msn.com says...  
> >  
> >Yesterday I heard a report on KCBS AM 740 in San Francisco about what  
> >is believed to be the first Win95 specific virus. They think it  
> >originated in Australia. I've been searching around the Web, but  
> >haven't found anything yet. Has anyone out there heard anything?  
> >-George  
>  
> New York Times Computer News Daily  
> [http://nytsyn.com/live/News3/035\\_020496\\_114617\\_28055.html](http://nytsyn.com/live/News3/035_020496_114617_28055.html)

Or just check the web site of nearly any anti-virus program publisher. You will find information about it at Symantec (Norton Anti-Virus) <http://www.symantec.com/avcenter/avcenter.html>, Dr. Solomon's (Dr. Solomon's Anti-Virus Toolkit) <http://drsolomon.com/>, Data Fellows (publisher of F-Prot Professional) <http://www.datafellows.fi/>, and MetroNet (the Web site of one of the AVP Anti-Virus Toolkit Professional distributors <http://www.thenet.ch/metro/avp-news.htm>, and even on the logon page at Microsoft.

McAfee's Scan has an updated DAT file that will detect the virus, AVP has a;n update for it, Dr. Solomon's has an update for it, and it can be detected by F-Prot by adding the following to the user.def file:

E Boza  
81BD200A440050450F85A60100006681BD6C0A44

The virus, written by an Australian virus writing group, VLAD, is the first identified virus to infect only Win95 PE files. The virus is not in the wild yet.

There are good analyses of the virus at Data Fellows WWW site, and at Dr. Solomon's.

--  
---==Steve===--

shoke@northnet.org  
steven\_hoke@msn.com

Newsgroups: alt.whistleblowing  
From: ld231782@LANCE.ColoState.Edu (L. Detweiler)  
Subject: Clipper chip  
Sender: news@yuma.ACNS.ColoState.EDU (News Account)  
Message-ID:  
Date: Wed, 02 Jun 1993 22:47:59 GMT  
Organization: Colorado State University, Fort Collins, CO 80523  
Lines: 206

Hello. Probably virtually everyone reading this has heard of the Clinton Clipper Chip Initiative. If you haven't, the rundown is that it is a proposed

standard that will allow the government to wiretap phones and other electronic devices using the chip. An excellent article appears in this weeks Newsweek under `Society -- Technology' (June 7 1993 p.70) with the headline `The Code of the Future' subhead `Uncle Sam wants you to use ciphers it can crack'. A great collection of articles from the press and elsewhere, including the original announcement, is available on [soda.berkeley.edu:/pub/cypherpunks/clipper](http://soda.berkeley.edu:/pub/cypherpunks/clipper). Also, some documentation is contained in the Privacy & Anonymity FAQ on [rtfm.mit.edu:/pub/usenet/news.answers/net-privacy](http://rtfm.mit.edu:/pub/usenet/news.answers/net-privacy).

Some very interesting comments and traffic have appeared in the risks forum (comp.risks) on this issue. In particular D. Denning's role and participation in the project has been called into question. Ms. Denning was among the first to propose a `key escrow system' in the academic realm (in Communications of the ACM). A massive electronic uproar ensued in sci.crypt after a warning sounded by T.C. May, in which Denning wrote several messages defending the proposal and also first volunteering/introducing the idea of `split keys' for the escrow system about eight months ago on sci.crypt. She has written on the internet that she was unaware of the Clipper announcement until its public introduction on April 16.

Disturbing inconsistencies in her public statements are apparent. In posting this information and message it is not my intent to demean or harass Ms. Denning. However, I do believe that the scientific, electronic, and academic communities deserve better than her evasive and duplicitous treatment. In short, an apology is warranted, not for any political considerations of the Clipper proposal or her involvement but because of her unacceptable unwillingness to adhere to complete and total honesty among her respectful peers. Involvement in the project alone is, to say the least, a problematic stance for many, but the barefaced denial of participation or knowledge given strong evidence to the contrary is completely intolerable. It is my personal opinion that Ms. Denning desires to be associated with the Clipper proposal only to the extent it is successful and accepted. This cowardly misrepresentation should be scorned.

The following is a statement by E. S. Raymond, editor of many popular electronic documents, and Denning's reply, excerpted from:

RISKS-LIST: RISKS-FORUM Digest Wednesday 19 May 1993 Volume 14 : Issue 64

Date: Wed, 19 May 1993 16:32:46 -0400 (EDT)  
From: [esr@snark.thyrsus.com](mailto:esr@snark.thyrsus.com) (Eric S. Raymond)  
Subject: Re: Clipper (Denning, RISKS-14.60; Rotenberg, RISKS-14.62)

In Marc Rotenberg wrote:

> Denning has to be kidding. The comments on the proposed DSS were uniformly  
> critical. Both Marty Hellman and Ron Rivest questioned the desirability of  
> the proposed standard.

Mr. Rotenberg, as a public figure operating in the political arena, has to exercise a certain diplomatic restraint in responding to Ms. Denning's claims. I am, thankfully, under no such requirement.

As a long-time RISKS reader and contributor, I observe that that this is not the first time that Ms. Denning has apparently operated as a mouthpiece for the NSA's anti-privacy party line on DES and related issues.

I believe Ms. Denning's remarks must be understood as part of a continuing propaganda campaign to marginalize and demonize advocates of electronic privacy rights. Other facets of this campaign have attempted to link privacy advocates to terrorists and drug dealers by suggesting that only criminals need fear wiretapping.

These are serious charges. I make them because, in the wake of the Clipper proposal, I do not believe civil libertarians can afford any longer to assume that their opponents are persons of good will with whom they can simply debate minor differences of institutional means in a collegial way.

It's time for someone to say, in public and on this list, what I know many of us have been thinking. The future is \*now\*. Electronic privacy issues are no longer a parlor game for futurologists; they are the focus of a critical political struggle, \*and the opponents of privacy are fighting their war with all the tools of force, deception, and propaganda they can command\*.

The histories of the DES, the FBI wiretap proposal, and now the Clipper proposal must be considered against a wider background of abuses including the Steve Jackson case, "Operation Longarm", and the routine tapping of U.S. domestic telecommunications by NSA interception stations located outside the geographic borders of the United States.

These form a continuing pattern of attempts by agencies of the U.S. government to pre-empt efforts to extend First and Fourth Amendment privacy protections to the new electronic media. In each case, the attempt was made to present civil libertarians with a fait accompli, invoking "national security" (or the nastiness of "kiddie porn") to justify legislative, judicial and practical precedents prejudicial against electronic privacy rights.

While I would not go so far as to claim that these efforts are masterminded by a unitary conspiracy, I believe that the interlocking groups of spies, bureaucrats and lawmen who have originated them recognize each other as cooperating fellow-travelers in much the same way as opposing groups like the EFF, CPSR and the Cypherpunks do. Their implicit agenda is to make the new electronic communications media transparent to government surveillance and (eventually) pliant to government control.

One of the traits of this culture of control is the belief that manipulative lying and dissemblage can be justified for a `higher good'.

I believe that Ms. Denning's disingenuous claim that the DSS "is now considered to be just as strong as RSA" is no mere technical misapprehension. I believe it is propaganda aimed at making objectors non-persons in the debate. I cannot know whether Ms. Denning actually believes this claim, but it reminds me all too strongly of the classic "Big Lie" technique.

It is important for us to recognize that the propaganda lie is not an aberration, but a routine tool of the authoritarian mindset. And the authoritarian mindset is, ultimately, what we are confronting here --- the mindset that regards the fighting of elastically-defined `crime' as more important than privacy, that presumes guilt until innocence is proven, that demands for government a license to override any individual's natural rights at political whim.

We cannot trust representatives of an institutional culture that was \*constructed\* to deal in information control, lies, secrecy, paranoia and deception to tell us the truth.

We cannot accept the authoritarians' unverified assurances that the sealed

interior of the Clipper chip contains no `trapdoor' enabling the NSA to eavesdrop at will.

We cannot trust the authoritarians' assertions that they have no intention of outlawing cryptographic technologies potentially more secure than the Clipper chip.

We cannot believe the authoritarians' claims that `independent' key registries will prevent abuse of decryption keys by government and/or corrupt individuals.

We cannot --- we *\*must not\** --- cede control of encryption technology to the authoritarians. To do so would betray our children and their descendants, who will work and *\*live\** in cyberspace to an extent we can barely imagine.

We cannot any longer afford the luxury of treating the authoritarians as honest dealers with whom compromise is morally advisable, or even possible. Whatever their own valuation of themselves, the thinly-veiled power grab represented by the Clipper proposal reveals a desire to institutionalize means which a free society, wishing to remain free, *\*cannot tolerate\**.

Big Brother must be stopped *\*here\**. *\*Now.\** While it is still possible.

Eric S. Raymond

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Date: Wed, 19 May 93 18:37:24 EDT  
From: denning@cs.cosc.georgetown.edu (Dorothy Denning)  
Subject: Re: Clipper (Raymond, RISKS-14.64)

Eric Raymond has accused me of being part of a propaganda campaign and a "Big Lie." Among his wild speculations, he wrote:

I believe that Ms. Denning's disingenuous claim that the DSS "is now considered to be just as strong as RSA" is no mere technical misapprehension. I believe it is propaganda aimed at making objectors non-persons in the debate. I cannot know whether Ms. Denning actually believes this claim, but it reminds me all too strongly of the classic "Big Lie" technique.

Frankly, I don't know how to respond his allegations other than by saying that I am not and have never been on the payroll of NIST, NSA, or the FBI and that every word I have published has been completely on my own initiative. While I frequently speak with people in these agencies (mainly to ask them questions so that I can be informed) and have considerable respect for them, I am operating on my own initiative and making my own independent evaluations based on all the evidence I can find. I try to avoid pure speculation as much as possible.

My objective in responding to Sobel in the first place was to point out that, in my best judgement, the DSS as revised is as secure as RSA. I did that so that readers would not be led to believe the contrary. Let me elaborate more.

The security of the DSS is based on the difficulty of computing the discreet log. (The Diffie-Hellman key exchange, invented in 1976, is likewise so based.) The security of the RSA is based on factoring. My understanding is that the computational difficulty of these two problems is about the same for comparable key lengths, and indeed, the fastest solutions with both come using the same basic technique, namely the number field sieve. If I'm wrong here, I am happy to be corrected by someone who knows more than I do about this.

There are other factors, of course, that must be taken into account. With both schemes, you have to make sure you get good primes. In the case of the DSS, you want really random ones so that you don't get ones with "trapdoors." This is readily done and the chances of getting a trapdoor one are minuscule. For a reference, see Daniel Gordon's paper from Crypto '92.

I still remember the day when George Davida called me up to say that he had cracked RSA. It turned out that he had found a way of exploiting the digital signatures to get access to plaintext (but not keys). I generalized his mathematics and published a paper in CACM (April 84). The solution is to hash messages before they are signed, which has other advantages anyway. I also remember various articles by people pointing other potential vulnerabilities with RSA if the primes weren't picked right.

There are potential weaknesses in all of these public-key methods, but they can be resolved. As near as I can tell, NIST has resolved the potential problems with the DSS, and I am confident that if new ones are found, they will resolve them too.

Dorothy Denning

--

ld231782@longs.LANCE.ColoState.EDU

Subject: ANNOUNCE: Nautilus 1.0a Secure Phone Software  
Keywords: telephone speech compression encryption

Announcing Nautilus 1.0: Secure Telephony on your Personal Computer  
=====

WHAT IS NAUTILUS?

- -----

Nautilus is a program that lets you have encrypted voice telephone conversations with your friends without needing any special equipment. Nautilus runs on IBM-PC compatible personal computers (386DX25 or faster) under MSDOS or Linux as well as desktop Sun workstations running SunOS or Solaris. The MSDOS version requires a Soundblaster compatible sound card while the Linux version can also support some additional cards. All versions need a high speed (9600 bps or faster) modem to work. The speech quality is pretty good at 14.4kbps and acceptable at speeds as low as 7200 bps. This means that Nautilus can be used reasonably reliably over cellular phones, in good reception areas.

Nautilus is the first program of this type that we know of to be distributed for free with source code. A few similar commercial programs have been distributed without source, so that their security cannot be independently examined. Other free programs with source are now beginning to appear.

GET IT WHILE YOU CAN

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Certain parts of the US Government appear to be working to ban civilian use of cryptography whose keys are not accessible to the government. Documents recently obtained from the FBI under the

Freedom of Information Act support this conclusion. If programs like Nautilus are made illegal, we will have to stop further development and distribution.

We believe that the US Constitution entitles every citizen to use secure communications that only he or she controls the keys to (see the First and Fourth Amendments for more information). So we urge everybody to get a copy of Nautilus \*now\* and start using it. Although we have many enhancements planned for future versions that will make Nautilus better to use, the current version is already reliable and provides everything necessary to protect your privacy even if no further improvements are released.

For more info about the recently published FBI documents, see the Electronic Privacy Information Center's web page on the subject at [http://www.epic.org/crypto/ban/fbi\\_dox/](http://www.epic.org/crypto/ban/fbi_dox/).

#### WHAT IS NEW IN THIS RELEASE?

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We are pleased to announce that with this release, Nautilus is officially out of beta test. Nautilus has been through three public beta test releases and been examined by several knowledgeable cryptographers. No catastrophic security bugs were found in any of the beta releases, though some minor ones have been found and fixed. Nautilus 1.0 has a few minor user interface and other improvements and some non-security-related bug fixes compared to 0.9.2, but 0.9.2 has been operating stably for several months and has needed \*no\* security fixes. Version 1.0 is entirely compatible with 0.9.2 and we have deliberately postponed adding any new features that we feared might introduce bugs. Version 1.1 will have some interesting new features including an automatic key exchange protocol that gives forward secrecy and does not require secret passphrases.

While Nautilus still has had nowhere near the net-wide scrutiny of email programs like PGP, its ciphers are well-tested and its protocols are simple and robust. We are now willing to place more confidence in Nautilus's security than we would in any of the comparable programs that we know of. This is mostly because the other programs have not withstood public scrutiny of their source code for as long (or at all).

#### New Feature Summary for Version 1.0:

- + Linux and Solaris support
- + Updated documentation
- + "Verbose mode" prints more info about Nautilus's operation
- + Enhanced 8500bps coder (improved audio quality)
- + Ability to change mic sensitivity from config file (see docs)
- + Ability to change output volume from config file (see docs)
- + Ability to set arbitrary com port addresses and IRQ's.
- + Automatically detects incompatible versions at the other end and tells you what is wrong (previous versions mysteriously just didn't work when the other end was incompatible).

The remainder of this announcement is similar to earlier Nautilus announcements, so if you have already seen the earlier ones, just connect to the nearest ftp site mentioned below to download the 1.0 release of Nautilus.

## HOW DOES NAUTILUS WORK?

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Nautilus uses your computer's audio hardware to digitize and play back your speech using homebrew speech compression functions built into the program. It encrypts the compressed speech using your choice of the Blowfish, Triple DES, or IDEA block ciphers, and transmits the encrypted packets over your modem to your friend's computer. At the other end, the process is reversed. The program is half-duplex; just hit a key to switch between talking and listening.

Nautilus's encryption key is generated from a shared secret passphrase that you and your friend choose together ahead of time, perhaps via email using PGP, RIPEM, or a similar program. Nautilus itself does not currently incorporate any form of public key cryptography.

Further details are in the documentation file included with the program.

## FTP SITES

- -----

Nautilus is available in three different formats:

nautilus-1.0a.tar.gz - full source code  
nautl0a.zip - MSDOS executable and associated documentation  
nautl0as.zip - full source code

It is available at the following FTP sites:

ftp://ftp.csn.org:/mpj/I\_will\_not\_export/crypto\_??????/voice/  
This is an export controlled ftp site: read /mpj/README for  
information on access.

ftp://miyako.dorm.duke.edu/mpj/crypto/voice/  
This is an export controlled ftp site: read /mpj/GETTING\_ACCESS for  
information on access.

ftp://ripem.msu.edu/pub/crypt/other/nautilus-phone-1.0a-source.tar.gz  
ftp://ripem.msu.edu/pub/crypt/msdos/nautilus-phone-1.0a-source.zip  
ftp://ripem.msu.edu/pub/crypt/msdos/nautilus-phone-1.0a-exe.zip  
This is an export controlled ftp site: read /pub/crypt/GETTING\_ACCESS  
for information on access.

You may be able to find additional ftp sites using the "archie"  
ftp site locating program. See <http://www.earn.net/gnrt/archie.html>  
for more info.

It is also available at:

Colorado Catacombs BBS - (303) 772-1062

## INTERNATIONAL USE

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Sorry, but under current US law, Nautilus is legal for domestic use in the US only. We don't like this law but have to abide by it while it is in effect. Nautilus is distributed through export-restricted FTP sites for this reason. Export it at your own risk.

IMPORTANT

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Although we've done our best to choose secure ciphers and protocols for Nautilus, and its design details have been reviewed by several experts, it is still VERY EASY to make mistakes in such programs that mess up the security. It is still possible, though less likely than before, that some security bugs remain. We urge that users needing very high security take an in-depth approach to protecting their privacy. See the Nautilus documentation file for more info.

As usual, we encourage cryptographers and users alike to examine and test the program thoroughly, and \*please\* let us know if you find anything wrong. And as always, although we'll try to fix any bugs reported to us, WE CANNOT BE RESPONSIBLE FOR ANY ERRORS.

CONTACTING THE DEVELOPERS

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The Nautilus development team is now made up of Bill Dorsey, Pat Mullarky, Paul Rubin, Gil Spencer, and Andy Fingerhut. To contact the developers, send email to .

This announcement, and the source and executable distribution files, are all signed with the following PGP public key. Please use it to check the authenticity of the files and of any fixes we may post. You can also use it to send us encrypted email if you want. We will try to keep such email confidential, but cannot guarantee it.

- -----BEGIN PGP PUBLIC KEY BLOCK-----

{Por uma questao de espaco, editei fora a assinatura}

Bill Dorsey

DICAS:

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Algumas publicacoes e zines que estao pintando na rede Internet, alem do Barata Eletrica.

Hack.br - <http://ruby.magiclink.com.br/~biggest> ou mail para o Gaspari, grande sujeito: [biggest@magiclink.com.br](mailto:biggest@magiclink.com.br) - hacker zine

Dr.Byte - mail para [waldemir@caju.larc.usp.br](mailto:waldemir@caju.larc.usp.br) - Varios topicos, regioo santista em geral

Infotime - <http://www.iserv.com.br/infotime> - Gostei do dito. Visual legal alem de artigos de gente finissima (eu, por exemplo)

3X4 - <http://www.tecepe.com.br/3X4.htm> - Achei legal - Sobre a Internet em geral

Uivo - <http://www.dcc.ufmg.br/~sapao/uivo> - Zine dedicado a literatura

Mundi - <http://www.di.ufpe.br/~mundi> - Alguns artigos interessantes

Meu povo - <http://www.lci.ufrj.br/mpovo/meupovo.html> - Lista feita por Dario Mor

AlterNETive - <http://www.ufsm.br/alternet/zine/zine.html> - Ganhou premio da



Internet World pelo visual. Bom Zine, varios artigos bons.

Existem varios catalogos no <http://www.embratel.net.br/dirweb.html> onde se pode procurar sobre outros zines.

#### BIBLIOGRAFIA:

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TENDINITE: A ideia de fazer o artigo veio do typing-injury faq, que ajudou um amigo a prevenir o problema. Conversando com o pessoal do H.U. da USP, consegui mais material, cuja origem esta' na materia. Para quem deseja ler mais sobre o assunto, o principal lugar e' o [ftp.csua.berkeley.edu](ftp://ftp.csua.berkeley.edu), mas tem varios outros "sites" estocando desde textos ate' MPEGs mostrando exercicios e GIFs ilustrando melhores posicoes de maos, etc.. Existem inclusive programas p. regular o uso do computador.

Periodicamente sai em jornais e revistas artigos sobre o assunto.

No artigo sobre desgaste visual, foi usado um texto da revista CPU-PC.

Vao ai algumas referencias:

Wallach, Dan S. (1995) "Typing Injury FAQ: General Information".

<http://www.cs.princeton.edu/~dwallach/tifaq/general.html>

<ftp://ftp.std.com/pub/rsi>

<gopher://gopher.std.com/11/FTP/world/pub/rsi>

----> <ftp://ftp.csua.berkeley.edu/pub/typing-injury>

<gopher://sjuvm.stjohns.edu/11/disabled>

<ftp://ftp.demon.co.uk/pub/rsi>

----> <ftp://ftp.demon.co.uk/pub/mirrors/csua/typing-injury>

<http://engr-www.unl.edu/ee/eeshop/rsi.html>

Other WWW sites:

The Ergonomic Page, from Applied Software Unlimited [- NEW!]

<http://www.best.com:80/~ergoware/>

Emacs keybindings and ergonomics [- NEW!]

<http://www.santafe.edu/~nelson/ergo/>

Amara's RSI Page [- NEW!]

<http://www.amara.com/aboutme/rsi.html>

MouseMitt International - padded lycra wrist braces [- NEW!]

<http://www.mousemitt.com/>

Workstation Environments - a company which designs high-end furniture

[- NEW!]

<http://www.workenv.com/>

Safety Related Internet Resources [- NEW!]

<http://www.sas.ab.ca/biz/christie/safelist.html>

Some human factors and ergonomics research by Alan Hedge

<http://www.tc.cornell.edu/~hedge>

TechTime articles on RSI Injuries

<http://hoohana.aloha.net/~billpeay/TECHT08.html>

A Patient's Guide to Carpal Tunnel Syndrome

<http://www.cyberport.net/mmg/cts/ctsintro.html>

Medical Matrix - A Guide to Internet Medical Resources

<http://kuhttp.cc.ukans.edu/cwis/units/medcntr/Lee/HOMEPAGE.HTML>

ErgoWeb - lots of information for designers of ergonomic tools

<http://ergoweb.mech.utah.edu/>

Oversensitivity to Electricity

<http://www.isy.liu.se/~tegen/febost.html>

Disability Resources from Evan Kemp Associates

<http://disability.com/>

Intergraph Workstation Furniture

<http://www.intergraph.com/furn.shtml>

Safe Computing's Internet Store - buy ergonomic products online

<http://www.netmedia.com/safe/>

The Martial Arts FAQ

<http://www.cis.ohio-state.edu/hypertext/faq/usenet/martial-arts/top.html>

The Ergonomic Sciences Corp, Mountain View, CA.

<http://www.internex.net/multipresence/ergonomics.html>

The (USA's) Occupational Safety and Health Administration

<http://www.osha.gov>

Canadian Centre for Occupational Health and Safety

<http://www.ccohs.ca>

Repetitive Stress Injury Help Page (CMU)

<http://http://www.cs.cmu.edu/afs/cs.cmu.edu/help/www/06-Miscellaneous/RSI/repstrTOC.html>

Some other WWW indices to the typing-injury archive

<http://www.santafe.edu/~nelson/rsi/typing-gif.html>

<http://alumni.caltech.edu/~dank/typing-archive.html>

THE .. USENET: tirei do Amateur Computerist. Esta' disponivel, entre outros lugares, no <ftp://pub.Publications/CuD>

CENSURA NA REDE: Varios lugares, incluindo a Computer Underground Digest, tambem disponivel no <ftp://pub.Publications/CuD>

Os artigos na secao de News - Dicas vieram de cartas do [scy.crypt](mailto:scy.crypt), [comp.security](mailto:comp.security) e [alt.2600](mailto:alt.2600) newsgroups

APENDICE:

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Estes dois programas abaixo sao listagens destinadas a criacao do programa UUDECODE.COM, capaz de decodificar o arquivo PCX contido na materia sobre tendinite. Se voce nao domina o basico de programa-macao para conseguir fazer tais programas funcionar, sugiro que procure ajuda. Nao me responsabilizo pelo mal funcionamento dos programas e/ou erros de qualquer especie. O programa UUDECODE.COM e' comum em sistemas UNIX e esta' disponivel em qualquer ftp site Mirror do simtel20 no subdiretorio [simtel/msdos/starter](ftp://simtel/msdos/starter). Por ex:

<ftp://ftp.unicamp.br/pub/simtelnet/msdos/starter>

Nao me enviem cartas perguntando sobre como fazer isso. Nao vou responder

Boa sorte

uudecode.bas

100 REM - BASIC PROGRAM TO CREATE UUDECODE.COM v2.0 (a fast uudecoder)  
105 REM UUDECODE.BAS created by w8sdz@SimTel.Coast.NET (Keith Petersen)

```

110 CLS:PRINT "Creating UUDECODE.COM. See UUDECODE.DOC for instructions."
115 OPEN "UUDECODE.COM" AS #1 LEN = 1
120 FIELD #1, 1 AS A$: CHECKSUM#=0
130 FOR I = 1 TO 73
140 LINESUM#=0: LOCATE 2,3: PRINT "Countdown: " 73 - I ;
150 FOR J = 1 TO 16: READ BYTE$: BYTE = VAL("&H" + BYTE$)
160 CHECKSUM# = CHECKSUM# + BYTE: LINESUM# = LINESUM# + BYTE
170 IF (BYTE < 256) THEN LSET A$=CHR$(BYTE): PUT #1
180 NEXT J
190 READ LINETOT$: LINECHECK# = VAL("&H"+LINETOT$)
200 IF LINECHECK# = LINESUM# THEN GOTO 220
210 LOCATE 4,2: PRINT "Error in line #" ; 260 + 10 * I: GOTO 260
220 NEXT I
230 CLOSE: READ FILETOT$ : FILECHECK# = VAL(FILETOT$)
240 IF CHECKSUM# <> FILECHECK# THEN GOTO 260
250 PRINT: PRINT "UUDECODE.COM created successfully": SYSTEM
260 PRINT: PRINT "UUDECODE.COM is not valid!": END
270 DATA EB,5F,90,49,6E,70,75,74,20,66,69,6C,65,20,65,72, 6A1
280 DATA 72,6F,72,2E,4F,75,74,70,75,74,20,66,69,6C,65,20, 5F2
290 DATA 65,72,72,6F,72,2E,73,74,61,72,74,20,6E,6F,74,20, 617
300 DATA 66,6F,75,6E,64,2E,45,6E,64,20,6E,6F,74,20,66,6F, 5C7
310 DATA 75,6E,64,2E,20,65,78,69,73,74,73,2E,20,41,62,6F, 595
320 DATA 72,74,69,6E,67,21, 0, 0, 0, 0,AC, 3,AC, 3,5C, 3, 402
330 DATA 0,E8,FA, 1,E8,54, 1,BF,5C, 3,E8,D1, 0,AD,3D,62, 743
340 DATA 65,75,F4,AD,3D,67,69,75,EE,AD,3D,6E,20,75,E8,BF, 87F
350 DATA 5C, 3,B4,20,AC,3A,C4,76,FB,AC,3A,C4,75,FB,AC,3A, 84E
360 DATA C4,76,FB,3A,C4,74, 4,AA,AC,EB,F8,BA,5C, 3,33,C9, 8F9
370 DATA 88, D,80,3E,60, 1,FF,74,1E,B4,4E,CD,21,3C, 2,74, 5E7
380 DATA 16,3C,12,74,12,8B,CF,2B,CA,E8,2F, 1,BA,44, 1,B9, 609
390 DATA 12, 0,B0, 5,E9,16, 1,B4,3C,CD,21,73, 3,E9,E3, 0, 5E7
400 DATA A3,58, 1,BF,5C, 3,E8,65, 0,AC, A,C0,74,48,BB,20, 674
410 DATA 20,2A,C3, A,C0,74,3F,32,E4,8B,E8,B9, 4, 6,AC,8A, 70C
420 DATA E0,AC,8A,D0,2B,C3,D0,E4,D0,E4,D2,E8, A,C4,AA,4D, ABB
430 DATA 74,D4,8A,E2,AC,8A,D0,2B,C3,D2,E4,D0,E8,D0,E8, A, AD8
440 DATA C4,AA,4D,74,C1,8A,E2,AC,2B,C3,8A,CD,D2,E4, A,C4, 9D1
450 DATA AA,4D,75,C7,EB,B0,E8,15, 0,AD,3D,65,6E,75, 5,AC, 7AE
460 DATA 3C,64,74, 3,E8,AE, 0,E8,61, 0,B4,4C,CD,21,8B,36, 6A5
470 DATA 5A, 1,89,3E,5E, 1,BD,50, 0,BF, C, 3,33,C0,AB,B9, 5B3
480 DATA 27, 0,B8,20,20,F3,AB,BF, C, 3,3B,36,5C, 1,72, 6, 4D1
490 DATA E8,38, 0,E8,55, 0,AC,3C,60,75, 4,B0,20,EB, 8,3C, 61D
500 DATA D,74,1B,3C, A,74,18,AA,4D,75,DF,3B,36,5C, 1,72, 4F9
510 DATA 3,E8,37, 0,AC,3C, A,75,F2,BF,5C, 3,EB,B4,46,89, 707
520 DATA 36,5A, 1,8B,3E,5E, 1,BE, C, 3,C3,BA,5C, 3,8B,CA, 5B7
530 DATA 87, E,5E, 1,2B,CA,76, A,8B,1E,58, 1,B4,40,CD,21, 54D
540 DATA 72, 1,C3,BA,14, 1,B9,12, 0,EB,22,BA,AC, 3,B9,54, 653
550 DATA FA,8B,1E,56, 1,B4,3F,CD,21,72, C, B,C0,74, 8,8B, 62B
560 DATA F2, 3,C6,A3,5C, 1,C3,BA, 3, 1,B9,11, 0,50,E8, A, 648
570 DATA 0,58,E9,55,FF,BA,36, 1,B9, E, 0,52,51,BA,3E, 3, 5EB
580 DATA B9, 2, 0,90,E8, C, 0,59,5A,E8, 7, 0,BA,3E, 3,B9, 595
590 DATA 2, 0,90,BB, 2, 0,B4,40,CD,21,C3,90, D, A,54,68, 557
600 DATA 69,73,20,50,72,6F,67,72,61,6D,20,52,65,71,75,69, 5FA
610 DATA 72,65,73,20,44,4F,53,20,56,65,72,73,69,6F,6E,20, 576
620 DATA 32,2E,30,20,6F,72,20,68,69,67,68,65,72,2E, D, A, 46D
630 DATA 24, D, A,49,6E,70,75,74,20,70,61,74,68,2F,66,69, 516
640 DATA 6C,65,3A,20,20,4E,6F,20,61,63,74,69,6F,6E,B4,30, 58A
650 DATA CD,21,3C, 2,73, C,BA, C, 3,B4, 9,CD,21,B8, 1,4C, 524
660 DATA CD,21,E8,46, 0,73,33,BA,68, 4,B9,1B, 1,90,E8,6A, 69F
670 DATA FF,BA,41, 3,B9,14, 0,BB, 2, 0,B4,40,CD,21,BF,7F, 6A7
680 DATA 0,C6, 5,50,8B,D7,B4, A,CD,21,E8,1E, 0,73, B,BA, 667
690 DATA 55, 3,B9, 9, 0,B0, 1,E9,33,FF,BA, 4, 4,B8, 0,3D, 59D

```

700 DATA CD,21,72, 4,A3,56, 1,C3,E9,1C,FF,BE,80, 0,BF, 4, 726  
710 DATA 4,FC,AC, A,C0,74,2F,B4,20,AC,3A,C4,76,FB,3A,C4, 806  
720 DATA 76,26,3C,2F,74, 4,3C,2D,75,18,8B,D0,8B, 4,3C,3F, 4DA  
730 DATA 74,1B,24,5F,3D,4F,20,8B,C2,75, 7,F6,16,60, 1,46, 53A  
740 DATA 46,AC,AA,AC,EB,D8,F9,C3,C6, 5, 0,F8,C3,BA,68, 4, 973  
750 DATA E9,66,FF,90,55,55,44,45,43,4F,44,45,20,76,32,2E, 622  
760 DATA 30, 0,4F,72,69,67,69,6E,61,6C,6C,79,20,62,79,20, 565  
770 DATA 54,68,65,6F,64,6F,72,65,20,41,2E,20,4B,61,6C,64, 565  
780 DATA 69,73, 0,54,68,6F,72,6F,75,67,68,6C,79,20,72,65, 608  
790 DATA 68,61,63,6B,65,64,20,62,79,20,44,61,76,69,64,20, 583  
800 DATA 50,20,4B,69,72,73,63,68,62,61,75,6D,2C,20,54,6F, 588  
810 DATA 61,64,20,48,61,6C,6C, 0,55,55,44,45,43,4F,44,45, 4B4  
820 DATA 20,5B,2D,3F,5D,5B,2D,6F,5D,20,5B,64,3A,5D,5B,5C, 4C5  
830 DATA 70,61,74,68,5C,5D,62,69,6E,61,72,79,2E,55,55,45, 608  
840 DATA 20,3C,52,45,54,55,52,4E,3E, D, A,55,73,69,6E,67, 497  
850 DATA 20,74,68,65,20,66,69,6C,65,6E,61,6D,65,2E,74,79, 5DD  
860 DATA 70,20,69,6E,20,74,68,65,20,22,62,65,67,69,6E,22, 531  
870 DATA 20,6C,69,6E,65,2C, D, A,70,72,6F,64,75,63,65,73, 570  
880 DATA 20,75,75,64,65,63,6F,64,65,64,20,66,69,6C,65,6E, 600  
890 DATA 61,6D,65,2E,74,79,70,20,6F,6E,20,63,75,72,72,65, 5FC  
900 DATA 6E,74,20,64,72,69,76,65,5C,70,61,74,68, D, A,28, 564  
910 DATA 70,72,6F,76,69,64,69,6E,67,20,66,69,6C,65,6E,61, 661  
920 DATA 6D,65,2E,74,79,70,20,64,6F,65,73,6E,27,74,20,61, 5B2  
930 DATA 6C,72,65,61,64,79,20,65,78,69,73,74,29,2E, D, A, 53C  
940 DATA 2D,6F,20,73,77,69,74,63,68,20,66,6F,72,63,65,73, 5F0  
950 DATA 20,6F,76,65,72,77,72,69,74,65,20,6F,66,20,65,78, 5F9  
960 DATA 69,73,74,69,6E,67,20,66,69,6C,65,6E,61,6D,65,2E, 61D  
970 DATA 74,79,70, D, A,2D,3F,20,70,72,6F,64,75,63,65,73, 565  
980 DATA 20,74,68,69,73,20,68,65,6C,70,20,6D,65,73,73,61, 5DA  
990 DATA 67,65,2E, D, A,24, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 135  
1000 DATA 114365

-----  
uudecode.c

```
/*
 * Copyright (c) 1983 Regents of the University of California.
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms are permitted
 * provided that the above copyright notice and this paragraph are
 * duplicated in all such forms and that any documentation,
 * advertising materials, and other materials related to such
 * distribution and use acknowledge that the software was developed
 * by the University of California, Berkeley. The name of the
 * University may not be used to endorse or promote products derived
 * from this software without specific prior written permission.
 * THIS SOFTWARE IS PROVIDED ``AS IS'' AND WITHOUT ANY EXPRESS OR
 * IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED
 * WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
 */

/*
 * Modified 12 April 1990 by Mark Adler for use on MSDOS systems with
 * Microsoft C and Turbo C.
 *
 * Modified 13 February 1991 by Greg Roelofs for use on VMS systems. As
 * with the MS-DOS version, the setting of the file mode has been disabled.
```

```

* Compile and link normally (but note that the shared-image link option
* produces a binary only 6 blocks long, as opposed to the 137-block one
* produced by an ordinary link). To set up the VMS symbol to run the
* program ("run udecode filename" won't work), do:
*         udecode := "$disk:[directory]udecode.exe"
* and don't forget the leading "$" or it still won't work. The binaries
* produced by this program are in VMS "stream-LF" format; this makes no
* difference to VMS when running decoded executables, nor to VMS unzip,
* but other programs such as zoo or arc may or may not require the file
* to be "BILFed" (or "unBILFed" or whatever). Also, unlike the other
* flavors, VMS files don't get overwritten (a higher version is created).
*
* Modified 13 April 1991 by Gary Mussar to be forgiving of systems that
* appear to be stripping trailing blanks.
*/

```

```

#ifndef lint
static char sccsid[] = "@(#)udecode.c 5.5 (Berkeley) 7/6/88";
#endif /* not lint */

```

```

#ifdef __MSDOS__          /* For Turbo C */
#define MSDOS 1
#endif

```

```

/*
 * udecode [input]
 *
 * create the specified file, decoding as you go.
 * used with uuencode.
 */

```

```

#include

```

```

#ifdef VMS
# include
# include
#else
# ifndef MSDOS          /* i.e., UNIX */
# include
# endif
# include /* MSDOS or UNIX */
# include
#endif

```

```

/* single-character decode */
#define DEC(c) (((c) - ' ') & 077)

```

```

main(argc, argv)
char **argv;
{
    FILE *in, *out;
    int mode;
    char dest[128];
    char buf[80];

    /* optional input arg */
    if (argc > 1) {
        if ((in = fopen(argv[1], "r")) == NULL) {
            perror(argv[1]);
            exit(1);
        }
    }
}

```

```

        argv++; argc--;
    } else
        in = stdin;

    if (argc != 1) {
        printf("Usage: uudecode [infile]\n");
        exit(2);
    }

    /* search for header line */
    for (;;) {
        if (fgets(buf, sizeof buf, in) == NULL) {
            fprintf(stderr, "No begin line\n");
            exit(3);
        }
        if (strncmp(buf, "begin ", 6) == 0)
            break;
    }
    (void)sscanf(buf, "begin %o %s", &mode, dest);

#if !defined(MSDOS) && !defined(VMS)    /* i.e., UNIX */
    /* handle ~user/file format */
    if (dest[0] == '~') {
        char *sl;
        struct passwd *getpwnam();
        struct passwd *user;
        char ddbuf[100], *index(), *strcat(), *strcpy();

        sl = index(dest, '/');
        if (sl == NULL) {
            fprintf(stderr, "Illegal ~user\n");
            exit(3);
        }
        *sl++ = 0;
        user = getpwnam(dest+1);
        if (user == NULL) {
            fprintf(stderr, "No such user as %s\n", dest);
            exit(4);
        }
        strcpy(ddbuf, user->pw_dir);
        strcat(ddbuf, "/");
        strcat(ddbuf, sl);
        strcpy(dest, ddbuf);
    }
#endif /* !defined(MSDOS) && !defined(VMS) */

    /* create output file */
#ifdef MSDOS
    out = fopen(dest, "wb");          /* Binary file */
#else
    out = fopen(dest, "w");
#endif
    if (out == NULL) {
        perror(dest);
        exit(4);
    }

#if !defined(MSDOS) && !defined(VMS)    /* i.e., UNIX */
    chmod(dest, mode);
#endif
#endif

```

```

    decode(in, out);

    if (fgets(buf, sizeof buf, in) == NULL || strcmp(buf, "end\n")) {
        fprintf(stderr, "No end line\n");
        exit(5);
    }
    exit(0);
}

/*
 * copy from in to out, decoding as you go along.
 */
decode(in, out)
FILE *in;
FILE *out;
{
    char buf[80];
    char *bp;
    int n, i, expected;

    for (;;) {
        /* for each input line */
        if (fgets(buf, sizeof buf, in) == NULL) {
            printf("Short file\n");
            exit(10);
        }
        n = DEC(buf[0]);
        if ((n <= 0) || (buf[0] == '\n'))
            break;

        /* Calculate expected # of chars and pad if necessary */
        expected = ((n+2)/3)<<2;
        for (i = strlen(buf)-1; i <= expected; i++) buf[i] = ' ';

        bp = &buf[1];
        while (n > 0) {
            outdec(bp, out, n);
            bp += 4;
            n -= 3;
        }
    }
}

/*
 * output a group of 3 bytes (4 input characters).
 * the input chars are pointed to by p, they are to
 * be output to file f. n is used to tell us not to
 * output all of them at the end of the file.
 */
outdec(p, f, n)
char *p;
FILE *f;
{
    int c1, c2, c3;

    c1 = DEC(*p) << 2 | DEC(p[1]) >> 4;
    c2 = DEC(p[1]) << 4 | DEC(p[2]) >> 2;
    c3 = DEC(p[2]) << 6 | DEC(p[3]);
    if (n >= 1)
        putc(c1, f);
}

```

```
        if (n >= 2)
            putc(c2, f);
        if (n >= 3)
            putc(c3, f);
    }

/*
 * Return the ptr in sp at which the character c appears;
 * NULL if not found
 */

#define NULL    0

char *
index(sp, c)
register char *sp, c;
{
    do {
        if (*sp == c)
            return(sp);
    } while (*sp++);
    return(NULL);
}
-----
```