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1990 VOL. 3
ISSUE 2

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The
Ultimate
Newsletter



Hello and welcome to our illustrious newsletter. Editing and nagging people for articles mostly done by [CJP] with occasional typing by miscellaneous people, much assistance in collating, photocopying and glueing by [COM] and much advice and assistance in using mess Word by [DAV]. Many articles were submitted nicely printed on a wonder-beast-from-faraway-that-runs-circles-around-PC's and hence were not amenable for editing due to my dislike of typing and their dislike of fonts on our wonder laser printer! Hence errors will abound in anything (not in this font or ~~this one~~) or by [DDT]. Any assistance next time will be greatly appreciated!

Meanwhile... Enjoy!

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Pres Report

[THO]

You first years probably don't realise how well we have done this year. Hardware acquisitions have been nothing short of an all time record with our AT, usefully scavenged SYSTEM 36, an ST and a Toad to boot. Also, awards must go to secy and treas. for keeping the club's future and present alive:

Jeanette Campbell - best UCC treasurer for 1990
Comrade Cooper - best UCC secy for 1990

A new term begins and I hope real effort will be made in regards to fund raising. The choccie drive must be successful. Like a latter day Hari Seldon, I can but hope, but I have not sown the seeds of this future - thanks again to our treas. Further ahead we can look forward to a new residence and appointment recognition due to [COM] and to the 'little man within'. Also, as you will find in my progress reports, the fantasy department is alive and I hope to bring you, one day, news from the sun.

TREASURER'S REPORT UM THINGY

[JRC]

I was reading a Women's Weekly one fine, sunny night and found the following quote :

Child : Who's Paul Keating?

Mum : He's the Treasurer, dear.

Child : Does that mean he's the pirate that steals all the treasure?

Mum : That's right, dear.

Incidentally, substituting "Jeanette Campbell" for "Paul Keating" in the above dialogue does NOT mean it's still true. So there.

This year has been interesting. Last Semester saw the spending of much money, mainly on the PC and DSP, as well as lots of bits & pieces. So in spite of monies from many new members, and donations (thanks to [ECF] and [THO], and fund raising (we raised \$98 from selling Happy Muffins) our current bank balance is only \$300, which should just about cover the phone bill and room rent, never mind DSP and a much-needed tool kit. Hence we need to do some very serious fund-raising. If we sell all of the World's Finest Chocolates that were delivered, we'll raise \$600 - so go for it!

Meantime, please think of some more (very silly) ideas for fund-raising.

Fear And Loathing at the UCC: Secretary's Report

[COM]

Things seem to be stabilising strangely in the Club this year, since we lost some of our most valued members and then were lucky enough to pick up the largest group of new members in years. There has been mumbling in the ranks that the goals of the Club have been changing - and perhaps not for the better. My response is - you don't have to play games; do something! We have funds to burn this year (sorry, Jeanette) and even someone as bumbling and incompetent as myself is going to attempt to build a practical, expandable, multiple microprocessor machine (and then try and write a resource-allocating OS...haha)

I must stress the importance to everyone of GETTING INVOLVED!!! It's not just my club, or even the committee's, but YOURS as well. Tell those people who are (mis)managing the Club what you think, and why. We value your opinions (this is a lie, however we have to officially believe it). I would hope that this year you get enough experience in running this club that when, next year, other commitments steal away some of the longer-term members, most of the committee and executive are made up of our newer faces.

Margies III went off quite well, considering the manifest lack of effort by some of the Club to make it there. We were rescued by the CIA (god forbid!!!) and ended up having a great (albeit somewhat unsteady) time with strange occurrences happening every couple of minutes. Lowlights were: the terrible cruelty meted out to [WFP], the dread toe-sucking episode in which Wowan (pres. of CIA) got his 'jollies' (what *does* that word mean? No one will tell me), [JOE]'s lack of coherency every evening, the mythic Julia and her habit of disappearing into a bedroom with at least 5 guys and emerging - somewhat bedraggled - some hours later, and the severe damage to people's brain cells which caused them to leave a semi-trailer-load of forgotten gear down there. For the highlights, see above or one of the articles somewhere in this strangely bound Newsletter.

You should find a UCC census form enclosed in this Newsletter, and it would be appreciated if you would take the time to fill it out and give it to a member of the committee: we want to have all sorts of embarrassing things on file about you for the benefit of later Anniversary Dinners. You do know what an Anniversary Dinner is, don't you?

Last but certainly not least, I was hoping that someone (like Andrew Payne) would come up with a new logo-thingy/letter-head that perhaps reflects the changes in our beloved (?) club.

All the best in your times of need - remember, don't call me, I'll call you.

V.P. Report.

[CJP]

Here it is. Ze Long Non Awaited V.P. Report. Ummmmmmmm.... This Semester I have successfully signed a very large number of pieces of paper which have been thrust-at-me by our trust-wor-thy President, Secretary and Treasurer. I sort of understood quite a few... I think. Hence most of my few possessions are still mine, not theirs (I hope).

I have many times unlocked the phone for multifarious peoples of the void, occasionally without the competition of fellow committee members! Altogether a Quite Useful (to others) if Somewhat Bewildering (to me) position.

I must admit that the is quite a lot more responsibility entailed in V.P. compared with 1styrrep, in that I really need to at least understand the pieces of paper I am called upon to sign well enough to ensure that money (it usually concerns money) is going in an acceptable direction.

Not much more to say of relevance. Oh well. I suppose that means that it's time for the irrelevant stuff. Like:

Arthur: The Bug Eyed Monster?
Ford: Is Green.

The Custard-Minded Glut.

A Cat no longer called NotFish.
~Green; a suffusion of.

whether or ~ 2B.

That will Probably do. Oh well.

{TTFN}

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year rep's report. Jan. [506]

First Year Rep's Rep:
Well - apart from (in theory) attending committee meetings on Tuesdays, the first year rep's duties seem to be that of hanging round the OCC (annoying everyone a lot) and writing this amazingly brief list

Activities Officer's Article

[PNL]

We have had many drive in nights this semester and they have been well attended by at least the old guard if not the new. Anyone who is not on the phone tree should complain bitterly to someone like Craig who is, and then I'll produce another new and improved tree (not that the current one is ever used or anything!)

Then there was the marathon drive in (which I think had one reasonable movie in there somewhere).

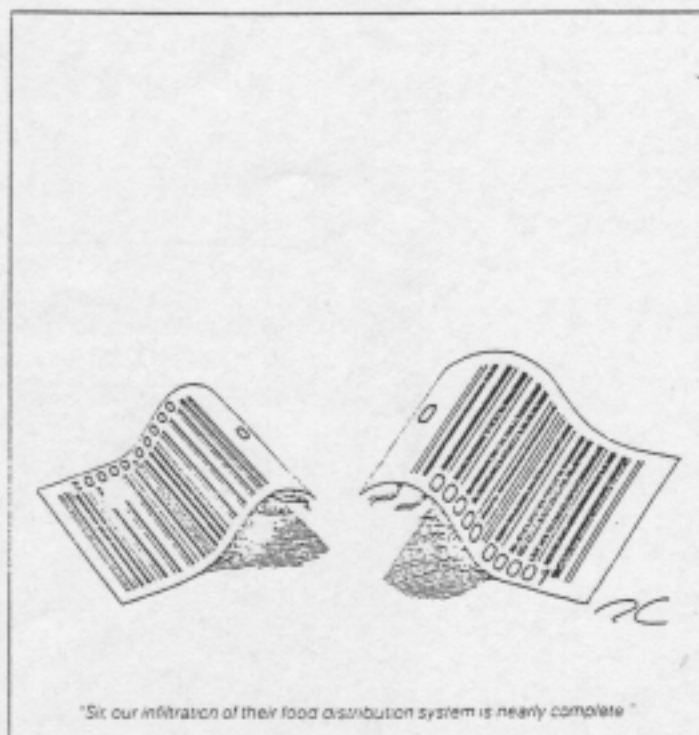
As well as the drive ins, we have been to see Star Trek 3 at the Omni theatre (which was better than I remembered it (and with not a whale in sight too!)), and which was also a lot better quality than Star Trek 1 (except it was 2 [ECF]) but was not as well attended.

Then there was the party at DT's house on the same day as my sister's homecoming party, but most people at my house managed to get to [DDT]'s after eating the Pizzas and Lasagnas!

[MAL] is supposed to be having a Star Trek day on Saturday 14/7, which is the same day as Comrade is supposed to be organizing a movie day at UCC! (cumon guys lets get the communication going here! (like using the phone tree [ECF]) we don't all have to do things on the same day you know! (See [DDT], once we do something, everybody else has to copy us!) ()[ECF])

As for next semester, there will be lots more drive ins and lots of other things going on (probably all on the same day).

See Ya,
Peter



Guild Idiocy And All That

[COM]

The University Computer Club is at a cross-roads. The whole reason for its existence has come under question in this fast-changing world. Firm resolve and decisive decision-makers will be required for us to survive.

That's enough of the political clichés. We are in a pretty unusual situation this year, for a number of reasons. For the last few years the club has been labouring at paying off the enormous debt for Marvin, and at last that had been paid off: but by that point much of the UCC's equipment (including Marvin himself) started looking a little long in the tooth. It had been generally agreed that to keep the club viable, we would have to invest in new equipment. This year we have, with Mephistopheles (the NEC AT), Lucifer (the as-yet incomplete XT in a System/36 box) in addition to the on-going DSP project. More has still to be done.

The club has something of a split personality with new members and the older, graduate members who still haven't had the decency to get *real* full-time jobs. Others that may have created more of a bridge seem to be taking an enforced vacation this year, but are likely to return next year.

The Guild itself is a bit strange this year, with all sorts of changes occurring (not least to our funding), as the Guild has suddenly decided to try to *improve* things: certainly not one of the more common Guild activities in past years. The extensions to the Guild buildings, the Computer Lounge, and the new funding system are only a few of the things that they are trying to do. Our club is in a good position to benefit from all of this, and I have been attempting to do just that.

With it extremely likely that the UCC will gain the contract to run the Computer Lounge (with the attendant big bucks), some ideas should be floated about the Club's future directions. Since we don't know what will in fact happen, all that can be done is really decide where the money will be thrown. Do people want tools, a CRO, more PCs, decent parties, or nice prints for the walls?

Don't leave it to the negotiators (namely me) - and then be pissed off that everything isn't as you wanted it.

XENIX, UNIX, and Other Creations of the Devil

[COM]

As some of you may know, I am a bit of a schizophrenic. I am a UNIX-head - but I like nothing better than to be dominated by my Macintosh (beat me with that mouse cable...!!). I love my WIMP interface, but think that text-only user interfaces can be more elegant and powerful. So, you might say that I *half* jumped at the chance to set up the UCC's first UNIX - well almost - system: the TRaSh80 Model 16. Since we got two, some smartie suggested the names "fish" and "chips": but it hasn't stuck yet, thank the great arkle seizure! The naming convention suggested by [JJQ] is from the seven dwarves, eg. "Grumpy", "Sleepy", "Bashful", &c. Then one spontaneously stopped working (well ... sort of spontaneously: remind me never to let [THO] 'examine' what he thinks is not a very nice machine with his sledge-hammer again).

This little beasties have the standard Z80, but in addition have an eight-megaHertz (we think) 68000 (the kind of processor that happily inhabits my wonderburg Macintosh). This almost caused me to pass out with happiness. Just imagine, two of the nicest types of things in the world, merged, or perhaps 'mashed'.

The first great hurdle was getting them to boot from hard-disk. [AJW] and I managed to stuff it up so badly that our original boot-floppy got irredeemably corrupted too. Then we managed to get it working without too much fuss on a very early version of the OS. Then we upgraded it with the upgrade package. It began acting quite strange.

When the development system arrived, I thought all my problems were over, that all I would have to do is to just type "install" and everything would automatically do it's job. After several hundred magic numbers I get sequences like...

```
50 Bus Error - core dumped
55 Memory Fault - core dumped
60 EMT Trap - core dumped
61 Illegal Instruction - core dumped
error: core nonexistent
67 IOT Trap - core dumped
Supervisor Exception.
68000 Crash - panic.
```

Isn't UNIX great?

Oh, and it looks like we may still get the UNOS machine. Stop smirking out there!

The Easter Camp
Alias Margies III
Alias Revenge of the Were-Penguin

[SFX]

Overall a good time but lacking (in order of importance) :
Vast quantities of females,
Vast quantities of Alcohol,
Money,
Silence (According to some very irate people who abused innocent
people at 04:00-06:30),
Money,
Sleep, and
Sane people (not a great loss).

program ATypicalDay :

const

Max = 10;

procedure FuckAround (Activity : integer);

begin

case Activity of

0 : ReadABook;

1 : PlayPatience;

2 : PlayTrivialPursuit;

3 : PlayMahjong;

4 : PlayPictionary;

5 : PlayJunken(Junket?);

6 : Play...;

7 : Abuse[WFP];

8 : Tickle[WFP];

9 : DrinkCopiousQuantitiesofAlcohol;

10 : Caving(FunInDarkHoles);

end

end;

Begin

repeat

07:00 Wake up, abuse / injure / incapacitate the bastard who
blasted you with a water canon, go back to sleep. (NB.
Evan is up, Evan is always up)

08:00 Wake up (see above), hang out sleeping bag to enable the
dew to soak it further.

08:30 Breakfast = Weetbix, orange & Vodka.

09:00 repeat

 FuckAround (rnd (0,Max))

until FindSomethingBetterToDo;

11:30 Comrade succumbs to peer pressure and wakes up.

11:45 Tim stumbles in, and denies he drank himself into oblivion
the night before, despite the fact he can't remember the
night before, the week before, where he is or who this
strange person Tim is, who allegedly drank himself into
oblivion the night before.

12:00 Milkrun to the cheapest nearby (or otherwise) liquor store to replenish the demolished stocks.
13:00 Scenic drive around Margaret River admiring the beach ~~talent~~ views, while discussing the peaceful destruction of yuppie 'mobiles, volvos, and the drivers of both.
15:00 repeat
 FuckAround (rnd (0,Max))
 until FindSomethingBetterToDo;
20:00 Dinner = toasted sandwiches (Zey were vedy vedy good) or some other culinary delight courtesy of DAV.BAK or Comrade.
 [JOE] gets stoned.
21:00 [JOE] goes to sleep.
 repeat
 FuckAround (rnd (2,Max));
 MakeCocktailsAndOtherConcoctions;
 DrinkTheAbove;
 until PassOut or FindSomethingBetterToDo;
 Tim drinks himself into oblivion.
04:00 Play Thumpers (An excuse to piss people off and get pissed).
06:30 Stagger off to bed (Somebody's bed ...).

until EndOfCamp

End. { of procedure ATypicalDay }

Some High Lights (Street lights ?) :

The attempt on the Were-Fairy-Penguin's [WFP] life (Death by Tickling).

Comrade's Rum Bononos (Isn't that right [WFP] ?).

Peter's (CIA Agent) sensuous toe sucking bonanza (ask Woven (CIA), I wasn't there).

Tim and Nick's attempt to de ~~flower~~-ear and throw [WFP] on the electric fence (They FoundSomethingBetterToDo (and being stoned helped)).

©

Margies III: What REALLY Happened.

[JOE]

Firstly, [SFX] Cannot program pascal for nuts. (As we all found out when the smartass stuffed around with the data structure on the CS100 project- HA!) I digress- the reason for the previous statement is several errors in that ridiculous article by [SFX]. It is as plain as the nose on his face that the repeat loops should really be while loops (lose two marks you scumbag).

OK. We're here, we may or may not get around to unpacking, we DO have adequate supplies of alcohol and Tetrahydrocannabinol; Ok- so maybe "adequate" isn't exactly the word; try sparse. Not, however, a problem. Several milk runs kept the wine flowing, (GOON from casks- UGGGGGGHHHHH! YUK!!) the beer pouring and the cocktails mixing. And as for the ol' leafy green er- PARSLEY; we were in possession of a magic stash bag that got fuller and fuller the more you took out of it. Half full on the Thursday, by the end of the camp it was near bursting point. Suffice to say that [COM] was very pissed off that he didn't get any, and several others, yours truly included; owe infinite debts of gratitude to those who provided. (It dried out just fine)

Camp fodder was interesting if not varied. Breakfast consisted of cereal. Lots of cereal. Specially Weetbix. (Dave.BANG's record for a dry weetbix was... uh... pretty pitiful but very funny at the time; remember the ion wind...) Lunch, well, call it breakfast course 2, not an up-at-dawner in sight excepting, of course, those who hadn't gone to sleep yet. Yes; lunch was a choice! a) Make oneself a ham/ salami/ cheese/ pickle/ salt/ pepper/ mayonnaise etc sandwich; b) either eat it OR toast it and eat it! (Toasting was an infinite improvement in taste to those whose tongues were still able to function normally after the previous nights' activities) Dinner was usually same as lunch unless you actually felt like waiting 30 minutes for a three-minute-meal to heat up to a piping tepid 27 celcius. No wonder they were abandoned in favour of those great toasted sandwiches! Snacks were interesting. There were [COM]'s delicious and intoxicating rum bostoneos, (or were they? I am assured that I thought they were delicious, but I'd had one, maybe twenty bongs, and I was a bit hungry...) the ubiquitous hunk of cheese from the 'fridge, handfulls of a crumbly but delicious "easter cake" (interesting concept) baked by someone's mum, chips, dips, chains, whips and other fun and games. (Sticks and stones may break my bones but whips an chains EXCITE ME!)

Speaking of games, the den of filth and perversion was infiltrated by maniacs from the CIA who insisted on dragging out vast quantities of numbered plastic polyhedra and a real fun game called Bloodbowl. The name really says it all, but for the slow learners cross the IRA, VFL, NFL, PLO, CIA, KGB, USA, UAE ... with the more violent selection of world wars and Qld-Pub-dwarf(snotting)-throwing and two teams (armies) of Jacko clones (what a distressing thought; OI!!!!!!) and you get the idea. OK, I suppose I'll have to mention Jungken, a card game that was played by many and hated by more, 'nuff said. Suffice to say that the name Joe-dot-Joe was coined in the first hour of play.

Highlights: Er- well, I didn't exactly stay awake for many of the highlights, but the first day was fun- about as much fun as tipping a Grasshopper down a keyboard. EH; SEAN?! You dickhead [COM]! why wasn't I notified of that party! Just kidding, I know that it was only a bunch of freeloaders after drinkies. Er- Sorry about that mess... But we won't talk about that one will we? No we won't. *** I digress. Highlights, yes, well I was tickled to the point w(h)ere I couldn't breathe. Several times. And I bore the carpet burns and a nasty grass stain to prove it. A ride in Dave dot bang's RX-7; complete with amazingly annoying over 100km/h alarm which rapidly drove both of us nuts. Also, the stoned-ear-on-the-electric-fence incident, well, almost on the fence. (Ow! You dickhead.. er; umm- Who WERE those People?) Oh well, That about wraps it up from me, Except for some well-deserved gripes.

Such as winery crawls? What winery crawls? The Y/X chromosome ratio, much too near to 1 for my liking. 0.00001 Would have been ideal. Oh boring. Here I am, staring into my monitor feeling a presence. NOTES!!! EXAMS! AAARRRGGHH!!! "Study ussss, yesss, you mussst, my precious! Gollum!" We hates them and they bites us. UGH! T minus 24 hours, 55 minutes and counting, We have calculus exam...

I'll print this fucker and then; <Sigh> study. <insert raspberry here> Thankyou, and goodnight. (Shit I hate rain. Right AMIGA-A. Pretty stupid key sequence for print. Hey?)

BBS Report - flame

[SFX]

Yes, well, it IS up and running (most of the time), and we are actually attracting users from outside the UCC (God knows why)!

We have registered our copy of RA (even though the lazy bastards haven't bothered to reply yet), so, PLEASE, tell people about it, we want the BBS to be used.

Currently the greatest use of the bulletin board is for games, we would like this to change (flame is meant to be a programmers BBS / a centralised flaming area) so if you have any programs you would like help on, or to distribute etc. please put it on the board. Also, for those with a lithe tongue, flames always add a bit of character to a BBS ...

There are a few software projects centred on the BBS (including [SAM]'s adventure, and a new-improved low-salt space trading game) currently under development, and more would be appreciated.

flame currently has at least 4 active sysops so any suggestions are sure to be noticed, just post a message to one of the relevant people, and help improve the service (or at least get flamed for the most stupid idea since processing on room heaters).

If you haven't signed up yet, even if you don't have a modem, get off you f****n' a**e and register with the BBS of the future ... flame.

(Gimme a break this was written on the last day under duress)

INVASION FROM SPACE...

From MARK MURRAY in Tokyo

JAPAN has been swamped by an invasion from outer space. The invaders are soulless machines programmed to destroy our way of life.

An aroused nation is up in arms in a frantic attempt to repel the takeover by the invaders, with their blank television screen-like faces and harsh electronic voices.

Actually it is all a game, though a good many Japanese are beginning to take it as seriously as a real invasion from space.

"Space Invader" is a computerized television game that has swept the country since it first appeared last October.

Special game centres have opened up offering nothing else.

The flashing, beeping machines are surfacing in amusement arcades, coffee houses, restaurants and hotels. About 200,000 are now in service and the total is expected to top the

half-million mark before the end of this year.

The game, modelled after the film "Star Wars," is simple in concept. The player has to repel an invasion from outer space using ballistic missiles. His score mounts as he shoots down the approaching rockets which, however, later reappear to try to overwhelm his defences.

As the game reaches its crescendo, so do the wild electronic sounds being emitted by the machine.

A beginner is usually overwhelmed in minutes, while the real professionals can keep the game going for hours on a single 100-yen (about 45c) coin.

And therein lies the trap, for the machine has an insatiable appetite for money.

Already the association of

slot machine manufacturers has been forced by public concern to seek the co-operation of machine owners to ban their use by children under 15 at night and insist on the presence of a parent with minors during the day.

In Tokyo alone last month, police took into protective custody 311 youngsters for criminal offences related to the invader game and this is being repeated in towns around the country. Their ages range from eight to mid-teens.

The most common offence is wrapping a five-yen coin in plastic to make it seem like a 100-yen coin. Others have used the old dodge of attaching a string to the coin to ensure its continued re-use.

Many schools are now trying to enforce a total ban among their students.



Hello Everyone - I've have!!!
So far I haven't found anybody
trying to talk to us, but I expect
it any day now. I have spent some time
getting acquainted with the Hewlett Packard
Interface Bus, and surprisingly - I survived!
(Did you know there is one HPIB command which
expects one parameter in octal, and the other in
decimal? - I didn't). It's great fun
driving the telescope - you type in the coordinates,
press 'return' and walk over to the window to wipe
the dust off the telescope. I'll bring
you some pictures, (hopefully not of some of our
objects... built in the late 50's to early 70's
I'll be back in Perth late on Tues 16th, but I might
stay - sleep in bed for a couple of days & receive from
the train. see you - Andrew Williams (Physics)

University Computer Club
2nd Floor Guild building,
University of Western Australia
Nedlands, Perth W.A.

These last few months have seen the finest and most stunning new releases available for the Amiga since it was initially released in June 1985, if you weren't aware of what I am talking about I refer to the Amiga 3000 and the products surrounding it. In fact most this section will be devoted to a review of the A3000 and the new system, Workbench v2.0, the rest of which will cover AMIX and the new software and hardware which has just been released (or about to be released). But first onto the A3000.

#define shrink_bit ON

After the years of rumours and speculation the Amiga 3000 has finally been released (release date for Australia is August). The A3000 has been completely redesigned from the motherboard up, differing totally from the A500, A2000 & A2500. At the heart of the A3000 is a 68030 & 68882 running at 25Mhz (there are two versions of the A3000 one which runs at 16Mhz the other at 25Mhz, the one reviewed here is the 25Mhz version), as well as 2Mb of 32 bit RAM (1Mb fast and 1Mb chip ram), it also includes the enhanced chip set (ECS - new Denise and Super Obese Agnus (2Mb Agnus) more on these later). Hardware addition to the A3000 include onboard SCSI controller, custom RAM controller - Ramsey (used to control the '030s page and burst modes as well as address decoding), custom DMA controller - Fat Buster (DMA arbitrator for the motherboard), and de-interlacing control for video - Amber. The hard disk supplied with the demo A3000 I used was a 40Mb Quantum divided into three partitions for Workbench 2.0, 1.3 and a general area.

Physically the A3000 is completely different to the A2000, where the case has some resemblance to an IBM PS/2 case, basically the A3000 is just over half the height of the A2000, though the length of the case is the same the width is shorter than the A2000 keyboard, pictured right. Commodore have designed the A3000 to correct small problems associated with the A2000/A2500, which were difficult or awkward. The keyboard connector along with the mouse and joystick ports are on the side like the A1000, the power switch is where it ought to be, on the front, no more groping for switches. The ports and connectors on the back of the A3000 are evenly spaced and easy to get at, unlike the A2000 which had everything bunched together on one side. Internal floppy drives and hard drives are now mounted on a small adaptor plate which is firmly attached to the chassis by a single screw.



The height of the A3000 was achieved by mounting expansion cards horizontally, this allows current expansion cards to be used in the A3000. While the A3000 will accept these earlier cards, each of the expansion slots in the A3000 will also accept the new standard called Zorro III. The A3000 Zorro III expansion slots have the same 100 pin standard as the Zorro II expansion slots on the A2000. Though according to a release from Commodore, "The Zorro III expansion card offers full-featured 32 bit address and data path access to the expansion devices, while maintaining backward compatibility with existing A2000 Zorro II cards on a cycle-by-cycle, slot-by-slot basis", in other words their compatible with Zorro III having some definite advantages (Having dealt with Commodore personally I am beginning to wonder whether their staff may have been politicians in a previous life, you can take this any way you like.). Their release then went on to say, "We have created an environment that not only allows 32 cards to exist in the same slot form factor [Physically impossible I might add but I know what they mean.] as the original A2000 cards, but can actually allow the user to run both 16 bit and 32 bit cards simultaneously!". The new Zorro III specifications allow access to a Gigabyte address space, though there are no devices/memory currently available that could use this the idea was that the A3000 can exceed the 8Mb limit affecting all other Amigas thereby having a greater expansion potential and a longer longevity. The other expansion connection to note is the new 200 pin CPU expansion card connector. If the user wishes to upgrade the CPU it is almost impossible since the '030 is soldered to the motherboard. This connector is offered as an upgrade path for a selection of new products such as high speed static RAM cards, cache cards, the new 68040 card or RISC based processor cards.

Gone is the hand and disk at power at, this has been replaced with a rainbow Amiga checkmark on the left hand side of the screen and a Amiga disk drive with a disk that moves from the bottom of the screen into the drive. Unlike the normal powerup colours of a white background, with black, blue and grey foreground colours, the powerup colours under v2.0 are a blue-grey background and fifteen foreground colours. Though most users of the A3000 will not see this since it autoboots from the harddrive automatically. After the A3000 has completed the startup sequence, by default the A3000 I tested automatically loaded Workbench, the screen colours form shades of the initial powerup colour blue-grey. The backdrop window in v2.0 can either be made to be a backdrop window the same as in v1.3 or it can be made a complete window in its own right with all the gadgets associated with a window.

Displayed on the menu bar is the Workbench revision number the amount of chip RAM available and the amount of

other ram (previously known as fast RAM). The main menus available under v2.0 have changed from v1.3, you now have - Workbench, Windows, Icons and Tools. Available under the Workbench menu are Backdrop, which makes the Workbench display either a backdrop or a window, Execute Command, which allows the user to enter AmigaDos and some AREXX commands, Redraw All, which redraws the entire display, Update All, updates the positions and sizes of windows and relative positions of icons from the top left hand corner of each window, Last Error, Version, the current Workbench version, and Quit, which allows you to exit and shutdown Workbench. Under the Window menu are New Drawer which creates a new drawer, Open Parent, Close which closes the current window, Update, Select Contents, Snapshot with a submenus of Window and Contents, Show which has the submenus of Only Icons and All Files. So it is now possible to view all the files in a given draw not only those with icons as before. The last item under the Window menu is View By which has the options of by Icon, Name, Date and Size, which overall gives the same options and window views as Macs do. Whilst under the Icon menu available are Open, Close, Rename, Information, Snapshot, Unsnapshot, Leave Out, Put Away and Delete. Under the last menu Tools available are Reset Workbench, Format Disk and Empty Trash. With all of these menus now available it is almost possible to totally ignore AmigaDos with the only feature missing is the ability to startup other tasks, though this I've been told will be added later. The other great advantage of the new Workbench is that they have now included keyboard short cuts for almost every menu item, something that was distinctively lacking under 1.3.

Windows though changed slightly under 2.0 have a completely different look and feel, as has been rumoured they have a very 3D'ish look with the gadgets and indeed the window itself having shadows (most icons also share this look). Before under 1.3 a window had gadgets window close, window to back, window to front, window drag and the usual window scroll bars with the controls at the extremes of the window. However under 2.0 windows still have the normal window close and window drag gadgets, with the exceptions that instead of having two gadgets to control the depth/arrangement of windows there is only one. Next to it is the addition of an iconify gadget which iconifies the window about the top left hand corner of the window. Control of the scroll bars are now placed at the bottom of the window next to the window drag gadget. To activate a window before you would have had to click on the window to activate it, now moving the mouse above the window automatically activates it, though if the window is behind it does not bring it to the foreground. If you wanted to select more than one item on a window previously it would have been necessary to hold the shift key whilst clicking on each item, now however you can lasso items by holding down the left mouse button.

No longer do you have the boring standard topaz font plus a few others but a complete selection of over 20 outline fonts (yes these are all PostScript fonts) which are actually used and displayed on screen, changing the font is as easy as selecting the Font icon file from preferences from the smallest font size of eight points to in some cases a size of 72 points. Once the font has been selected the entire font used throughout all the windows change to that selected font. Not only does the font change but also the size of the icon proportional to the size of the font selected and hence the window 'size'. So if you select a small font each of the icons size appears proportional to the size of the font and position relative to the top left hand corner of the window.

Preferences has also been changed before there was Preferences itself Pointer, Serial and Printer preferences although these were just linked to Preferences. Under 2.0 there are separate files for each aspect of control of the Amiga (apart from task scheduling and priorities). Within this group of files is the preferences for the display modes and colour setup, the one useful feature of this preference item was the information given for each mode such as the monitor that can display the selected mode/resolution, the number of colours/bitplanes available for that mode and the default resolution of the mode. Even though the default resolution is given for a particular mode the user has the ability to set any resolution they wish (within reason) and the display setup program automatically selects the mode and maximum number of bitplanes for the given resolution. Previously if there was a higher resolution display in the background you would often get some noticeable effect such as flicker coming through to the foreground display this is not so under 2.0, in fact you don't notice at all any effects caused by another display in the foreground display. This is most likely due to the de-interlacing hardware built into the A3000 as well as the 1950 multi-sync monitor, which produces a very clean image with no scan lines pixels even look like points rather than blocks. There were some modes that did produce visible scan lines but these were at extremes of resolution.

From the little time I had looking at the Dos side of things very little has been changed with the addition of a few extra commands, the only major addition is AREXX though most of the time these commands are used in script files or interprocess/program communication. There have been changes to the libraries mainly to support the architecture of the A3000 and the new chips. The other real bonus is at last the Amiga can really boast that it has REAL multitasking, is a task dies/crashes you no longer meet the Guru (which at this point was basically non-recoverable) but a Recoverable/Non-Recoverable Alert message giving the error code (in a sensible fashion) and the task address that produced the alert. In the case of a recoverable alert the Amiga continues on with all the other tasks running as normal but the memory and libraries of the task that produced the alert is recovered by Exec.

I was able in the time I had to do a benchtest of the A3000 against a similarly setup A500. The test was done using a mandelbrot generator that had been written entirely in assembly, set for a full size screen (640x512, 4 bitplanes) and 1000 iterations. The A3000 had a time of 53.21secs whereas the A500 had a time of 8 mins 48.57 secs, though this test does not really prove anything since the A3000 utilises a 32-bit bus as well as caches on the '030 and 'faster' custom chips. Overall I was thoroughly impressed by the machine and the new system, I think at last Commodore has made a machine that they can really be proud of, as the effort they have obvious put into it shows.

Hopefully by the time you have read this the ECS & v2.0 should be available, initial prices indicate that it will be around

the \$250 mark, this includes Obese Agnus (1Mb version) the new Denise, v2.0 and rewritten manuals. All A2000/A2500/A3000 will have the new ECS though don't expect to see it in A500s until October or November by then they will be shipped with 1Mb of RAM as standard. Unveiled shortly before the A3000 was released was a number of 50MHz '030 accelerator boards, reviews I received indicate A2000s so equipped absolutely scream along, prices I hope to have shortly. Though I mentioned in the last AMIGAn the A560 & A2060 Novell ethernet cards have been released from the information I have they use DMA and are supposed to much quicker than most other Novell cards currently available. Of interest to A500 owners (which includes myself) is the Pulsar PC board which plugs into the internal expansion slot. The board is fitted with a NEC V30 processor running at 8MHz, 1 Mb of RAM, and supports Hercules and CGA graphics. In the PC mode it has 768k free RAM, in the Amiga mode you can use it as normal expansion memory with 512k RAM and a 512k RAM disk. Interestingly the board uses the normal Amiga ports as the PC ports. The complete board with MS-DOS 4.01 is available in the US for \$450.

Other new software/hardware products released include A-Max v2.0 which now supports harddrives and sound. AmigaVision a multimedia control/programming/presentation program being shipped with all A2000/A2500/A3000 (I was hoping to have reviewed it before this article was due but Commodore have yet to send me a copy). Also released is ProWrite 3.0 from New Horizons from which I found to be quite stunning in what it is capable of doing (at last a REAL wordprocessor!), from experience it compares equally with Nisus on the Mac certainly a lot better than what Word has to offer. What has probably taken the longest time for a piece of software and hardware to be developed for the Amiga has at long last been released I speak of course the Video Toaster (\$1995(US)) a 24-bit digital video system (real time genlock/frame grabber, effects/character generator, colour processor) people who have witnessed the Video Toaster at various Amiga shows in the US are still having trouble removing their bottom jaws from the floor (This is only hear-say but of the demo video tapes that I've seen consider the graphics of a SPARC workstation except only better, now you seem to get the idea of the capabilities of the Video Toaster.).

Though not available yet (end of July) is AMIX - Amiga Unix, AT&T System V Release 4. AMIX or more importantly Unix SVr4 includes all the features of the earlier versions of System V, plus the Berkeley extensions (4.2 & 4.3), plus Xenix extensions, plus most Sun OS extensions plus NFS (Network Filing System) to enable virtual resource allocation, plus X-Windows support so it can run in a heterogeneous X-Windowed environment. All of this comes with source code as well as support for Applications Binary Interface (ABI), this ensures that different machines which use the same CPU can now be fully compatible because code is now written to be CPU specific rather than machine specific. (There is to be a AMIX demonstration in a few week time so I will post a notice as to the date and time.) Prices have not been given as yet though rumours suggest a figure around the \$3000 mark, but very nice none the less considering source is included.

Currently in the works at Commodore is the A3500 a 68040 based machine running at 40Mhz. Other features include a 1.8Mb high density disk drive that will be backward compatible with existing drives with the ability to read and write IBM and Mac disks, 24-bit colour is also planned as well as a 16 voice digital sound chip. Workbench 3.0 is in the planning as programmers at Commodore continue bug-smashing on v2.0. The emphasis with the A3500 is to free up the design which currently couples the CPU and the custom chips together, limiting the ability of Commodore to expand the machine beyond what is currently being done. Planned release date is sometime round March/April next year.

Just introduced in the US is the Commodore Interactive Graphics Player, a combined compact disc player and an Amiga. The interface is designed not to scare off the computer-phobic user, in fact the interface is based around the most familiar home electronic device - the remote control. No mouse, keyboard or monitor is needed. The CDTV as it is called can connect to a television, and with the remote control it can operate and access a 550Mb CD-ROM. Designed to look like a VCR, the CDTV player will fit in with most other entertainment systems. When not functioning as an Amiga, it can play all musical compact discs with 8x oversampling. The player operates as a computer internally, but is used like a stereo component externally. For people who do want standard computer access, add on peripherals make it an A500 with 1Mb of RAM. Peripherals include a keyboard, mouse, disk drive, trackball and infra-red bus ('brick') all of these communicate via infra-red signals to the 'brick'. As for a monitor, the CDTV player comes with RGB, PAL and NTSC outputs. The player also has a few other features such as a MIDI port and a DMA slot. Some compromises had to be made, you cannot play a CD and uses the external floppy at the same time, and there is no 86-pin bus as on the normal A500, so expansion is limited, but the machine does have an open architecture. The initial price of the CDTV player is \$899 with most of the peripheral around the \$50 mark except the disk drive.

On a final note the recommended retail price for the A3000 is \$7500, though through WARCC it is available for \$5100. As for v2.0 I've been told by Commodore that it is about 85% compatible with v1.3 the reason for this incompatibility was that Commodore could either make minor changes as they had done with 1.3 or make changes that would produce a better system and allow for future expansion, course they chose the later. At this time of writing Commodore could not guarantee that any particular program would work under v2.0, those that obeyed the programming guidelines set down by Commodore should work, those that didn't what more could I say.

#define shrink_bit OFF

Until next time Amigan!

is a brief catalog of some of the more interesting bits (bytes, words, ...) from the latest Fred Fish (FF 320 - 340). If you want a copy of any of the disks below just give me a blank disk and I'll be more than happy to make you one. If you want a more complete list of these disks either drop by UCC or write me on 277-9616.

Each disk is a description somewhat like [SEED] which stands for Source, Object file, Symbolic and Documentation, any combination of these letters indicates what is included with each disk.

FF Disk 311:
v1.0 [SEED]
Icond significantly enhances the IconK program, and is 100% compatible. It allows scripts to be executed by clicking the script's icon. Abilities include joining the script with the icon file itself, or calling it from any file or disk, executing either AmigaDOS or ARexx scripts, outputting to any file or device, running interactive and scripts that contain conditionals, and creating relative console windows. Includes a utility called AMI which is or detaches a script (off/on an icon file. Author: Rich Franzen.

FF Disk 312:
v1.5 [SEED]
An Inverse Function System viewer which graphically displays inverse function systems and allows the user to interactively create the affine functions that define such systems. An IFS can represent complex pictures very compactly. IFSs can describe an infinite number of different and increasing fractal displays. Includes a number of displays and other tools have discovered. Author: Glen Fultner.

FF Disk 313:
v1.0 [SEED]
Some systems pointed to the Amiga by Bob Levin, that compute the location of the planets (as viewed from a point on the earth) and the phase of the moon, for an arbitrary date and time. Author: Keith Brant VIII, Jim F. T. Mendenhall, Alan Peck, Peter Lauenstein, Bob Lorton.

FF Disk 314:
v1.0 [SEED]
A program which intercepts calls to dos.library to add the UNIX style "." and ".." syntax for current and parent directories, respectively, to file and path names. I.E., you use refer to files in the current directory as ".file" and files in your directory as ".../file", or any combination of the two. Author: Manny Bennett and Mark Cynic.

FF Disk 315:
v1.15 [SEED]
A "find-that-file" utility. Whored searches on your hard-disk for a filename and displays the path to that file. Searches are case independent, search, wildcard, interactive mode (if implemented), can display size and date of always shorable, can archive filenames for "ZOO" file management, and no recursive procedures. Author: J.B.iles.

FF Disk 316:
v1.0 [SEED]
GWIN or Graphics WINdow is an integrated collection of graphics routines suitable from C. These routines are easy to create sophisticated graphics programs in the C environment. One-line calls give you a custom screen space available, menu items, regions, arcs, circles, polygons, etc. GWIN is a two-dimensional floating point system with conversion between world and screen coordinates. Many examples of the use of GWIN are included for speed. Use of color and XOR operations are greatly simplified. Many examples of the use of GWIN are included in an examples directory. Examples include linear graph program, geographic mapping program, SPIKE graphics post-processor, and others. Extensive documentation is included. Author: Howard C. Anderson.

FF Disk 317:
v1.0 [SEED]
A complete midi package for use with all Casio CZ synthesizers. Contains a full fledged sound editor, a utility for CZ-100/1000/2305, a bank loader and a memory dump for CZ-1. This is a formerly commercial package created as shareware. Author: Oliver Wagner.

FF Disk 318:
v2.0 [SEED]
A very versatile program to display IFF ILBM files. Features realtime unpacking scroll, smart analysis of any file, load control over display modes, simple slideshow processing, pattern matching, and a dozen other options. Author: Sebastiano Vigna.

FF Disk 319:
v1.1.0 [Update to FF 321] [SEED]
Doms version of an ANSI screen file editor. It allows you to easily create and modify a screen of ANSI-style graphics on the Amiga. The standard ANSI color set (red, green, yellow, blue, magenta, cyan, white) and text styles

(boldface, underlined, italic) are provided, along with some simple editing and drawing functions. This version has the save features disabled. Author: Greg Elyse.

FF Disk 320:
v2.1 [SEED]
An enhanced version of DPlot from disk 290. DPlot is a simple display program for experimental data, with the ability of supporting paging through lots of data and providing comfortable scaling and presentation. The enhancements DFFFT include addition of a Fast Fourier Transform (FFT), display of a compressed amplitude and phase spectrum, a viewing capability, and a Welch window for spectral smoothing. Author: A. A. Widma.

FF Disk 321:
v2.01 [SEED]
A mail client for Doss, which will inform you of any new mail and will give the choice of viewing, deleting, or saving a message. Author: Stephen Lanche.

FF Disk 322:
v1.1 [SEED]
A program that allows the user to create CLI programs and batch files simply by clicking on a gadget. It can be used as the center of a security system, where the user simply clicks on gadgets to launch applications. Author: Natal Tudorovic.

FF Disk 323:
v1.0 [SEED]
This program implements easy creation of source code revision headers (very similar to the log headers) to be placed at the top of the Amiga C include files. Author: Olaf Barthele.

FF Disk 324:
v1.1 [SEED]
A File Access Manager for the Amiga that allows multiple ARexx programs to access a buffered version of a directory in a convenient and isolated manner. It buffers all the names, files, sizes and so on, for quick access. Author: Bob Now.

FF Disk 325:
v1.5 [Update to FF 311] [SEED]
Debugging functions for programs which don't have any links to their environment. Provides copies of user or parent a hardware process open to receive and distribute messages and requests, and a set of C functions to be linked into any program wishing to communicate with the Profiler main process. Adds a shared library as well as linker files for both Lattice and Arcc C. Author: Olaf Barthele.

FF Disk 326:
v1.0 [SEED]
A keyboard macro program, configurable via a text file, that also supports hotkey program execution. You can map up to eight functions to each key, including keys such as corner keys, the reset key, etc. Author: Olaf Barthele.

FF Disk 327:
v1.1 [SEED]
MendWord is a MemWash-like program which has been rewritten in assembly language for maximum speed efficiency. Unlike MemWash MendWord does not run as Task in a dummy loop but rather as a low-level interrupt one which is capable of swapping memory thrashing even before even might know of it and even while task switching is in effect. In fact the low-memory area is checked each frame. Virtually no processing time is wasted, the program does the check in about half a raster scan line. This program was contributed by Ralf Thamer, who spent two weeks programming & debugging it. In this program Ralf uses some very delicate tricks to let his interrupt routine work with linear slots. Author: Ralf Thamer.

FF Disk 328:
v1.0 [SEED]
This is a shared library package to simplify the ARexx host creation/management procedure. Reaxx messages are also included making it possible to control ARexx from programs such as AmigaBASIC (can you imagine BASIC controlling AmigaTeX?). Author: Olaf Barthele.

FF Disk 329:
v1.0 [SEED]
This is a CLI utility for those who are working with the Amiga's clipboard device. It's sole purpose in life is to copy the current contents of the clipboard to stdout or by redirection to a pipe or a file. Useful for saving and saving with programs that do not support the clipboard. Author: Stephen Vermeulen.

FF Disk 330:
v0.11 [SEED]
One of the series of ROBBS (Reaxx Object Building Block System) modules by Larry Phillips. Displayed is a program that only understands ARexx messages. It allows, under program control, the display of text and the printing of keyboard data. Author: Larry Phillips.

FF Disk 331:
v1.10 [Update to FF 85] [SEED]
A program converts an icon to an IFF picture through file. It handles both single and alternate image (transparent) icons. Author: Stephen Vermeulen.

to the console and serial devices. Author: Stephen Vermeulen.

FF Disk 332:
v1.0 [Update to FF 271] [SEED]
NeuralNet
=> Some programs for playing with NeuralNet Nets using Hopfield and Hamming algorithms. Author: Uwe Schaefer.

FF Disk 333:
v1.4 [Update to FF 274] [SEED]
Snap
=> A tool for clipping text or graphics from the screen, using the clipboard device. Snap finds out character coordinates automatically, handles different fonts, keymaps, accented characters, and more. Author: Mikael Karlsson.

FF Disk 334:
v1.0 [Update to FF 271] [SEED]
V\$nap
=> This is an enhanced version of Snap 1.3, submitted by Steve Vermeulen, which adds the ability to save clipped graphics to IFF FORM ILDM's to the clipboard, so they can be imported to other programs that understand IFF and the clipboard. I have dubbed it V\$nap, since the official 1.4 Snap is also included on this disk. Author: Mikael Karlsson, enhancements by Steve Vermeulen.

FF Disk 335:
v1.0 [Update to FF 271] [SEED]
RealTime
=> ARTM (Amiga Real Time Monitor) displays and controls system activity such as tasks, windows, libraries, devices, resources, ports, resources, vectors, memory, mouse, scripts, fonts and hardware. Includes both a PAL and an NTSC screen. Author: Deenan Javan and P. J. Merten.

FF Disk 336:
v3.4 [Update to FF 279] [SEED]
MRBackUp
=> A hard disk backup utility that does a file by file copy to standard AmigaDOS floppy disks. Includes an intuitive interface and file compression. Author: Mark Raftis.

FF Disk 337:
v1.0 [Update to FF 279] [SEED]
Mak
=> An Amiga file system handler that handles MSDOS formatted diskettes. You can use files on such disks in almost exactly the same way as you use files on native AmigaDOS disks. This is a fully functional, read/write system, that supports 8, 9, or 10 sector disks of 80 tracks, and should also work on 40 track drives and hard disks with 11 or 16 heads if any disk format the FAT allows. Author: Olaf Schfer.

FF Disk 338:
v1.0 [Update to FF 279] [SEED]
SectPrint
=> Converts portrait soft data for HP LaserJet compatible laser printers to landscape format. Author: Thomas Lynch.

FF Disk 339:
v24.01a [Update to FF 176] [SEED]
AnalyCalc
=> A full featured system for numerical analysis and reporting. Includes a spreadsheet, graphics program, document and facilities for performing many commonly needed functions. Functions include an 1000 by 1000 cell spreadsheet using virtual memory, random access to other stored spreadsheet formulas or values, copy save or merge or partial sheets, up to 400 windows on screen, ability to drive any cell from external memory, built in matrix algebra, random number generation, data arithmetic, and much more. Author: Glenn Evohart.

FF Disk 340:
v1.0 [Update to FF 279] [SEED]
Hanzi
=> Some miscellaneous programs from Chris Hanze. DrWork V1.01 is a fast, small, simple efficient DrUtility. FSDisk V1.1 is a floppy defragmenter program. VMK V27 is a small virus detector/filter that knows about 27 different viruses and can detect new ones. Moloko V1.0 traps programs from producing "info" files. Author: Chris Hanze.

FF Disk 341:
v1.0 [Update to FF 279] [SEED]
CPU
=> Two programs, one in C and one in assembly, which check for CPU type. This version can detect 68010, 68010, 68020, and 68010 processors. Author: Ethan Dick, based on WhatCPU by Dave Hayes.

FF Disk 342:
v3.1 [Update to FF 288] [SEED]
DiskSpeed
=> A disk speed testing program specifically designed to give the most accurate results of the true disk performance of the disk under test. Automatically updates and maintains an ASCII database of disk results for tested disks. Some source code changes and stress tests for CPU and DMA. Author: Michael Siro.

FF Disk 343:
v1.15 [Update to FF 118] [SEED]
Empire
=> This is a complete rewrite, from the ground up, of Draco, of Peter Langston's Empire game. Empire is a multiplayer game of exploration, economics, war, etc. which can last a couple of months. Can be played either on the local keyboard or remotely through a modem. Author: Chris Gray, David Wright, Peter Langston.

FF Disk 344:
v1.0 [Update to FF 279] [SEED]
FileSystems
=> Displays AmigaDOS disk devices with information about the head geometry, BadBlockType, and the lowest level user device. Author: Ethan Dick.

FF Disk 345:
v1.0 [Update to FF 279] [SEED]
OutPlace
=> Removes the highest number bitplane from the Workbench screen. Normally used to take Workbench screen from 2 bitplanes to 1 bitplane. This allows COM-style devices to work faster. Author: Ethan Dick.

FF Disk 346:
v1.0 [Update to FF 321] [SEED]
FF Disk 330: Mouse
=> A very versatile program to display IFF ILBM files. Features realtime unpacking scroll, smart analysis of any IFF file, real control over display modes, simple slideshow processing, pattern matching, and a dozen other options. Adds SHAM, double buffering, laser decompression, color cycling, FeXides, startup files for easy customizing, and complete Workbench support through ToolTypes and Style icons. Author: Sebastiano Vigna.

FF Disk 347:
v1.1 [Update to FF 55] [SEED]
Palme
=> A tool which allows you to change another program's screen colors. New features include checks for Workbench startup, checks for RAM, Half Bits, or more than five bitplanes, and more graceful exit. Author: Randy Innes, Cl Frapp, Carolyn Schopper, Charlie Heath.

FF Disk 348:
v1.9e [Update to FF 275] [SEED]
V110
=> A V110 emulator for the Amiga, which also supports various file transfer protocols like kermit, smdnet, pmodem, smdnet, etc. has an Arcc port, can use certain external protocol modules, and more. Author: Dave Wacker, Tony Samraff, Frank Andes, and Chuck Forsberg.

FF Disk 349:
v1.5 [SEED]
XprKerns
=> An Amiga shared library which provides Kermit file transfer capability to any XPR-compatible communications program. Supports version 2.0 of the XPR Protocol specification. Author: Marco Papa, Stephen Walton.

FF Disk 350:
v2.2w [Update to FF 311] [SEED]
Chrobes
=> A game based on computer programming. Unlike arcade type games which require human input controlling some object, all strategy in Chrobes is contained within a C language program that you design and write, to control a robot whose mission is to seek out, attack, and destroy other robots, each running different programs. All robots are equally equipped, and so to find may compete as one. Author: Tom Poindexter, Amiga version by David Wright.

FF Disk 351:
v4.01a [Update to FF 309] [SEED]
Lib
=> A csh like shell derived from Marc Dillon's shell, version 2.07. Changes include merely bug fixes and corrections. Author: Marc Dillon, Steve Drew, Carlo Borro, Cosme Deth.

FF Disk 352:
v1.0 [SEED]
HT2E
=> A program to convert IFF pictures to an executable. It can handle NTSC/PAL, interlace and overcan. Author: Pieter van Leuven.

FF Disk 353:
v1.99a [SEED]
LibArcA
=> An uninitialized and faster version of libarc for the Amiga. Requires ARP library. Author: Haruyasu Yoshizaki. Amiga version by Stefan Bobber.

FF Disk 354:
v1.20 [SEED]
LVR
=> Link Virus Remover. A program that recursively searches directories for link viruses in executable files. Author: Pieter van Leuven.

FF Disk 355:
v1.0 [SEED]
NTSC-PAL
=> Utilities which allow Amiga's with the new ECS 1MB Agnus to easily switch between PAL and NTSC display modes. Author: Nico Franco.

FF Disk 356:
v1.2 [SEED]
PatchLoadSec
=> This program patches the loading routine to automatically detect link viruses when a program is loaded. Displays an alert when a virus is detected in a program being loaded for execution. Author: Pieter van Leuven.

FF Disk 357:
v1.60 [SEED]
VirtualDisk
=> Two programs to detect viruses on disk and in memory. VirtualDisk removes all known viruses in memory. VirtualDisk removes all known viruses in memory and after removing the viruses the disks can be checked without the virus copying itself to the disks. Author: Pieter van Leuven.

FF Disk 358:
v1.0 [SEED]
FF Disk 330: ArtPics
=> Some cute animated pictures. Author: Bob McKain.

FF Disk 359:
v1.0 [SEED]
DezPatch
=> A program that results a patch for OpenWindows to check the NewWindow structure. If the size matches a specific value, the height will be forced to 45 pixels. This helps to reduce ship memory usage for programs that open

Editor v1.00 (SED)
 An editor for the Kawai K1110 synthesizer with two auxiliary programs for managing sound dumps. Author: Michael Balzer.

Editor v1.0 (SED)
 A small, simple and comfortable file encoder/decoder. Author: Michael Balzer.

Event v1.0 (SED)
 Another InputEvent hack, giving you a toggling right mouse button. Author: Michael Balzer.

Fred Fish Disk 33:
FilePlot vXLN6 (Update to PP 292) (SED)
 A package for making 3D plots conveniently. Tim Mooney wrote the original program, which was then enhanced by Alan Bauer with a nicer user interface, support for the PLT device, and support for file conversions. Rich Campagna and Jim Miller wrote the PLT handler which emulates a plotter by accepting HP-GL commands, creating a raster image, then dumping it to any previously supported graphics printer. Includes many bug fixes, style changes, and enhancements. Author: Alan Bauer, Tim Mooney, Rich Campagna, Jim Miller.

Fred Fish Disk 33H:
BM v0.9 (SED)
 An Amiga port of the Fuzzy BitMap image manipulation library. This package allows manipulation and conversion of a variety of color and B&W image formats. Supported formats include Sun rasterfiles, GIF, IFF, PCX, BM images, "raw" files, and PBM files. Also has input converters for raw images, like DigView files, and output converters for PostScript and Diablo graphics. Besides doing format conversion, some of the other image manipulation features supported include rectangular extension, density and contrast changes, rotation, quantization, halftone dithering, edge sharpening, and histograms. Author: Michael Mauldin; Amiga port by Koen Savvy.

File v1.5 (SED)
 A "more" replacement program that reads normal disk files as well as files crunched with PowerPacker. Crunched files can result in considerable disk space savings. Author: Nico Francois.

File v1.0 (SED)
 A "show" program for normal IFF (LBM files or LBM files crunched with PowerPacker). The de-crunching is done automatically as the file is read. Author: Nico Francois.

File v1.2a (SED)
 A text file utility which not only recognizes a wide variety of file types (text/plain, IFF, icons, zip files, etc.) but prints interesting information about the structure or contents of the recognized file types. Author: J. Tybergheim.

Fred Fish Disk 33G:
Calendar (SED)
 A utility providing a simple calendar which can hold and show appointments. It may be useful in reminding you of due dates. To check goals were to provide day, week and month at a glance for any date between 1/1/2001 and 11/30/99, defaulting to the current date. It is menu driven and Daily easy to use. Author: Mitch Wylie, Amiga port: Glenn Evertson.

File v1.1 (SED)
 A program to do a spectrogram of a sampled sound file. This is a graph with time on one axis, frequency on the other and the sound intensity at each point determining the plot color. With source in C, including FFT routine. Author: Daniel T. Johnson.

Fred Fish Disk 33K:
Car v2.0 (SED)
 A two-dimensional full screen scrolling racing game with realistic four channel stereo sound and overcut, for NTSC or PAL Amigas. The goal is to guide your car around one of six selected tracks. Each track has its own high score file. Author: Anders Bjørn.

File v1.10 (SED)
 A completely public domain file requester which may be used in any program, even commercial ones. It uses dynamically allocated memory to hold the file names so the only limitation is the amount of memory available. Includes an option to limit display of filenames to only one with a specific extension. Names are automatically sorted while they are being read and displayed. Author: Anders Bjørn.

File v2.10 (SED)
 A game built on the addictive game PONGO but with several added features. You have been assigned the daunting task of cleaning viruses from your SYSOP's hard disk. To kill a virus, you simply kick a disk at it. There are five different levels, and on each level, the speed will increase and the viruses will be smarter and start to hunt you down. Author: Anders Bjørn.

Fred Fish Disk 33F:
ChManual v1.00 (SED)
 A complete C manual for the Amiga which describes how to open and work with screens, windows, graphics, gadgets, resources, disks, menus, IDCMP, sockets, etc. The manual consists of more than 200 pages in 11 chapters, together with more than 70 fully executable examples with source code. When updated, the manual and examples neatly fill up three standard Amiga floppy's. Includes source for all examples. Author: Anders Bjørn.

Fred Fish Disk 33H:
Cpp (Update to PP 28) (SED)
 This is a copy of the Devex cpp, ported to the Amiga. This cpp is more powerful and complete than either of the built in cpp's in Max or Lattice C. It has had some ANSI features added. Author: Martin Miewe, Olaf Seibert.

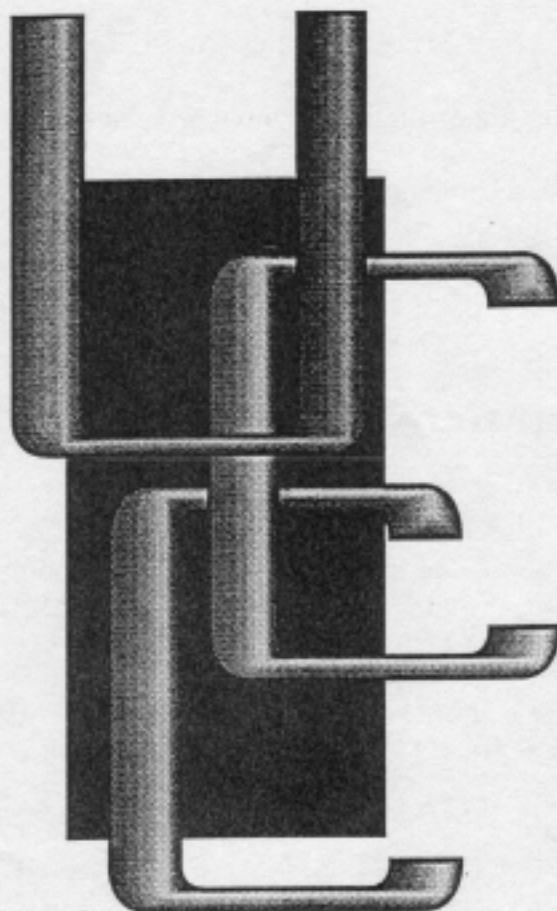
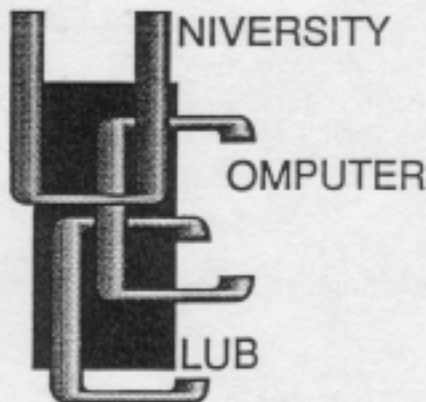
SASTools (SED)
 Various submissions from "Dick Amiga Soft". Includes some virus tools, some screen hacks, some small games, and miscellaneous utilities. Author: Jörg Sivi.

Fred Fish Disk 33F:
PCQ v1.1a (Update to PP 282) (SED)
 A freely redistributable, self compiling, Pascal compiler for the Amiga. The only major feature of Pascal that is not implemented is abs. It is much enhanced and about four times faster. Includes the compiler source and example programs. Author: Patrick Quast.

Fred Fish Disk 34B:
NonhC v1.0 (SED)
 A complete freely redistributable C environment for the Amiga based on the Sooloon Ltd C compiler, Charlie Gith's assembler, the Software Directory's linker, and portions from other sources. Steve has pulled everything together and added some enhancements in the process. Author: Steve Hawkins, et al.

File v1.6 (Update to PP 322) (SED)
 A library of C functions useful for scientific plotting on the Amiga. The library is Lattice C compatible. Contour plotting, three dimensional plotting, axis redefinition, log-log plotting and multiple subpages are a few of Pflor's features. The plots can be displayed on a monitor or sent to a graphics file for subsequent printing. This version includes a greatly improved mouse interface, preferences support for hardcopy, several new device drivers, and the capability of adding additional device drivers easily. Author: Tony Richardson.

SpeakerSim (SED)
 Demo version of SpeakerSim 1.8, a loudspeaker CAD program. Simulates various (think small) and closed box systems. Also simulates 1st, 2nd, and 3rd order high and low pass filters. Author: Diederik.



Part two...

[written for USENET in the Spring of 1988]

Uh, hey Martha, he's at it again. You know, that Smithwick fella, just doesn't know when to stop. . .

The reviews are in! "Amiga-The Next Generation" is a boffo hit!!

"I laughed all the way to bed last night!" - WF

". . .destined to be a classic. . ." - GL

"Brilliant. . ., bravo" - DB

"I really don't know what 'EnterBoing' is, perhaps Jimmy might"- T.F.Bakker

"Hey, my voice isn't that high" - LS

With that out of the way, I humbly submit for your approval,

[mentally change to Bold Face type]

AMIGA:
The Next Generation
-- *The Virus Strikes Back* --

#define PARODY_BIT ON

Captain Dale :(stern, square jawed, no frills, stands gazing distantly out through his office window, hands clasped behind him...)) Captain's log, 32-28-32.8, the StarChip Enterboing was on its way to a rendezvous point in the Denise star system. We were scheduled to meet the StarChip RSN PublishingPartner. This is the fourth time we've tried them, but so far, they have yet to show up.

[We hear a short burst of musical notes over the intercom, sounding much like an atonal passage from Wagner's "Ring"]

Ensign Jim : Captain, we're getting a number of distress calls about an outbreak of some "virus" or something ...

Captain : I'll be right up.

[Two stagehands open the elevator door, and a determined captain stumbles into the bridge taking his seat.]

Science officer Kodiak : Sir, we're getting word that this virus has infected and has either destroyed or serious messed up numerous disks out in the User Community.

Captain : Damn, were're my Bartles-and-Jaymes when I need it.

Lieutenant Dave : A transmission sir, coming from the StarChip Public Domain.

Announcer : A fuzzy, broken picture appears on the screen, we see the sullen face of the beloved Captain Fish, his eyes are distant and glassy. Piles of disks lie scattered around him. The

picture breaks up as it fades in and out. Captain Fish seems distraught, perhaps delirious, he looks up into the camera, shakes two handfuls of disks towards it.

Fish : (The image breaks up, scratch, garble) Disks! All my (garble, snap) destroyed! (crackle, pop) murder the (expletive deleted, garbled) Fear, trembling among.. (snap, bleep) "your Amiga has a virus, HA! HA! HA!" (fade, pop, scratch) HA! HA! (garble) ... get me an ST!

Captain : The man's obviously suffering from delirium

Fish : (crackle, snap) ... black leather and chains... (fade, flicker) ... PeeWee Herman and ... (pop, grech) ... vote for Gary Hart ...

[EnterBoing looses the signal]

Captain : Now we know he needs our help...

Dave : This stuff sounds worse than EA's copy protection, wheeeew!

Announcer : Being true to his 32 colors, Captain Dale blits the EnterBoing around, and goes into hires mode.

Captain : Ensign, set course for the BAADG Star System. If anyone can figure this stuff out, they can.

Announcer : Jim grabs his mouse and selects the new "preferences" of Workbench 7.2. Hitting a couple of wrong buttons on his 27 button mouse, a strange message appears in the menu bar saying "mono-tasking sucks eggs!"

Kodiak : Sir, more messages about the virus, coming in. Apparently there are several different varieties from "harmless" ones on up to deliberately malicious ones which can cause serious destruction across the Tri-state area.

Captain : And I thought that the Amiga race had evolved beyond this sort of thing. What sort of slimeball would do this!

Announcer : The EnterBoing sailed on towards the unknown, while all around the Amiga Universe users cowered in terror, wondering if their copy of that great new screen-hack "OingBoingWoingZoing" will be ⇒ The One ⇐.

At last, EnterBoing reaches the borders of the Infected Zone, and goes into orbit around the small puce-colored planet Foo. The crew beams down to a hideous sight. Smoke pours fourth from special effects generators, turning the sun blood-red. Burned out buildings line the streets, while people wander aimlessly in the streets clutching stacks of their beloved disks just cleaned of all those nasty byte thingies. Everywhere people mumble things like "click click click" or "formatting, verifying, formatting". The crew stepped over piles of rubble (joyboards, c64 emulators, Andy Warhol issues of Amiga World) in the street. Bonfires burned openly. Babies cried as their mothers comforted them softly humming songs from "It's only Rock and Roll".

A seven year old comes up to Kodiak, tears streaming down his cheeks...

Kid : Please mister (he pleads in a calculatedly pitiful tone) you got a good copy of Marble madness? Puleeezzze??? I haven't found the "secret level" yet ...

Announcer : The crew was touched and angered by the expressions of pure hopelessness. The sight of that young boy, XORed into their collective cortexes.

[Late that nite, the captain was in his study lost in thought...]

Captain : Hmmm, now lesee... I guess we'll "enter the city". Gee, after 4 years of this and with 533,979 hit-points you'd think that I'd find Mangar by now.

Announcer : Leaning back in his chair, he props his feet up on the table, ready for a relaxing evening, when suddenly...

[(cymbal_crash=ON) on his screen appears: "HA HA HA! a virus is in your Amiga! Formatting disk..."]

Announcer : The captain's face bleaches white, then turns red as the purest form of anger grips him. The only noise in the room is "click click click-Formatting cylinder 12, Verifying cylinder 12, Formatting cylinder 13...".

[From deep inside the captains throat comes a sound quite unlike anything we've ever heard before. Louder than the mating call of the Altarian Megadonkey, louder than Steve Jobs being fired, even louder than a thousand ST owners saying why they don't "need" multi-tasking.]

"formatting cylinder 45, click, click, click..."

[Kodiak looks up from the book he's reading ("Vanna Speaks")...]

Kodiak : What the hell was that?

Jim : It sounded like the voice of someone who just reformatted their Bard's Tale character disk.

Dave : How do you know that?

Jim : Just look at page 10 of the script, dummy.

Announcer : The captain bursts into the crew quarters, kicks aside the piles of dirty laundry, Amiga World subscription notices, unused software registration forms, growling. . .

Captain : Let's get these Dogs! NOW!

Announcer : The crew roll out of their cots, and rush up to the bridge. Kodiak immediately sets to access the EnterBoing's database for a search of possible culprits.

Kodiak : Dammit! Where's the dongle!

Jim : What?

Kodiak : That thing you're playing with.

Jim : Oh, heh, sorry. Thought it was a mouseport protector.

Announcer : Plugging in the dongle, Kodiak checks references from vandalism to satanic worship, to Democratic presidential candidates to leprosy to BCPL. Anything that might offer a lead.

Kodiak : Wait, wait a minute here. Under the heading of "Mutant Hackers from the East" it sez that "the great SlimeLord Gronk, is a smug and flatulent fellow, proud of his own cleverness. In order to demonstrate just how clever he really is, Gronk likes to play 'pranks' on computer users across the galaxy. By having his servants, a form of 'mental eunuchs' create software 'viruses'. These have little more utility than to create terror, discord and all around nastiness in the user community by systematically trashing disk after disk. 'Can't a guy have a little fun, huh?' Gronk remarked once after one of his viruses was mistaken for a simple-minded operating system. Later called 'MS-DOS', it almost single-handedly set back the cause of personal computing by 1200 years.

Another one of his efforts unleashed upon the early Amiga users caused otherwise perfectly healthy disk drives to constantly repeat his name when running : 'gronk, gronk, gronk'.

Yeoman Leo : Let's Iconify this dude!

Announcer : The EnterBoing gracefully swings around and sweeps off into the great unknown to meet their greatest enemy yet.

[After the commercial for some "feminine hygiene" gunk, nose drops, and "Chocolate Covered Sugar Bombs" Fortified Breakfast Cereal, StarChip EnterBoing settles around a dark and foreboding planet.]

Dave : I can feel the evil, the ... , the ...

Jim : Malevolence

Dave : Thanks. Malevolence, the ...

Jim : Churlishness.

Dave : Yeah! Churlishness. The mental ...

Jim : Putrescence?

Dave : No.

Jim : Pournellelshness?

Dave : That's it!

Announcer : On their viewer, the planet loomed mightily before them.

Kodiak : Like wow man, look at that planet looming mightily before us.

Announcer : Looking much like an avocado with a bad case of acne.

Kodiak : Yeah, or an orange with hemorrhoids.

Jim : Captain, were getting a transmission from the SlimeLord

Announcer : On the screen appears the most hideous creature ever seen or imagined. Looking much like an avocado with acne, or Jerry Pournelle after a nights worth of partying. Gronk's skin, if it could be called that, hangs loose on his twisted frame. Open black sores ooze something so gross to even mention to this bunch.

His head resembling a shriveled Mickey-Mouse balloon, is indicative of his overall intelligence. On the wall behind Gronk are the 3 most virulent letter in the Amiga universe (second only to that "I" term) : "SCA", the Software Cancer Association.

Gronk : Alien StarChip, youse Guys want some software, yes? Real cheap, I gotz me Fairy Tale, WordPerfect, TextCraft. I'ya got it all.

Captain : Not on your life Gronk, you ugly dude, you. We don't want any of your swill.

Jim : But sir, he's got TextCraft. Can't we make an exception?

Captain : What? And break the "Prime Directive"?

Jim : But siiiiiir, it's TextCraft!

Gronk : Well, captain, wanna deal?

Captain : Yeah, were going to deal with you alright.

Announcer : The crew donn special isolation garments: black shiny jackets bearing the EnterBoing's emblem on the back. They shimmer away in a blazing explosion of special effects. and reappear in a bunch of twisty little mazes looking all alike. Stuff crawls down the walls, their feet stick to the floor as if they were in a cheap theater.

[Through a port, they catch the sight of a small band of SCA mutants busily working away dreaming up new viruses, or cracking Jet, Arkanoid and Facc. Above them hangs the sign "Why buy software, when you can steal it!". The crew slinks up to the doorway, Pirate-Blasters drawn.]

Cracker : Ha Ha! Hey Lou, check out this new virus. After 4 boots, it writes a Micro-Prose copy protection scheme to their haddisk.

Captain : (whispers) Those vipers! Ok, set blasters to "Warranty Violation". GO!

Announcer : They dive into the room. Crackers turn around, terror showing in their beady eyes and flaccid faces. Squealing like baby pigs they scatter in every direction. Sweeping the room with their pirate-blasters, the crew hits everything with a monitor systematically violating all possible warranties. Paula chips writhe in agony, gasping for bits but finding none. CRTs split open, spilling their load of pixels onto the floor like so much sand.

Thrilling, action-packed editing make this a scene much too intense for words.

And as quickly as it began, it was over. The crackers huddled silently under the counters. Liquified computers littered the room.

Kodiak : Gee, that was fun, letz do this again sometime.

Announcer : Dale grasps an especially homely cracker by his soft pliable throat. Holding him up he stares into his little twitching face ...

Kodiak : Thatta-boy Captain, you hold-him and I'll modify him.

Captain : Where is Gronk?

Cracker : (the cracker gurgled) At the end of the hall, through the sliding doors that stagehands must open to make look automatic.

Announcer : The crew makes their way down the hall, stopping now and then to shake stuff off their feet. As they approach the door labeled "His Gronkness, 1.0", 2 stagehands yank it apart.

Gronk is playing with an illegal copy of Bard's Tale, and doesn't notice his guests. Dale sees that he has just found Mangar.

A brilliant 16 color non-interlaced beam pierces through the stuffy air striking the system squarely in screen.

Gronk: What the Hell? (he jumps back from the smoldering rubble) Who are you!

Jim : We're the Amiga Knights, here to mop up the Universe of your ilk.

Dave : Snappy dialogue Jim!

Gronk : Oh, ok. But first, do I get a final requestor?

Captain : Well, ok, what do you want?

Gronk : Just what is the "Video Toaster"?

Captain : Only the NewTekians know for sure. Kodiak, ready?

Kodiak : 'natch. Ok, extra-halfbright breath, stand back!

Announcer : Kodiak blasts the piles of bootleg software, and stacks of new virus disks which were being readied for Beta test. Gronk looks in horror.

Captain : Gronk, you are under arrest, my man, for Software Terrorism.

.....

Captain : Captain's log, 3.14159, following the arrest of Lord Slimeball Gronk, we reformatted the planet in an effort to make it useful to more productive races. Meanwhile Gronk is now serving time in "computer hell", joining many others who violated rules of common sense, decency and The Amiga Way (such as the guys responsible for cancelling Max Headroom, the Amiga 500 on/off switch, or Thomas Rattigan's parents). Gronk was sentenced to 500 years hard labor: developing a Real-time parallel processing OS in Kanji-Basic, on an MSX machine.

Announcer : Afterwards, the crew had one other stop to make, back to the planet Foo. They beam down to check up on the reconstruction efforts as well as to deliver some new Fish Disks, (numbers 6.11571×10^6 to 7.23551×10^6). Hundreds of eager hands reach out for software nourishment.

Meanwhile Kodiak approaches a familiar young boy and hands him a new Marble-Madness. The kid's face brightens up ...

Kid : Geeee, thanks mister! Wow. Say, you wouldn't happen to have "1.4", would you??

Kodiak : Nope, sorry kid, we may be able to work wonders, but not miracles.

Kid : Well, then, uh, what about TextCraft.

Kodiak : Oh Grow up.

#define PARODY_BIT OFF

Stay tuned for the next exciting bit-packed episode of,

*AMIGA:
The Next Generation*

Om Mani Padmi Hum Tick Tick.

[C^2] [SFX]

Deep in the bowels of every IBM on the planet a clock ticks over.

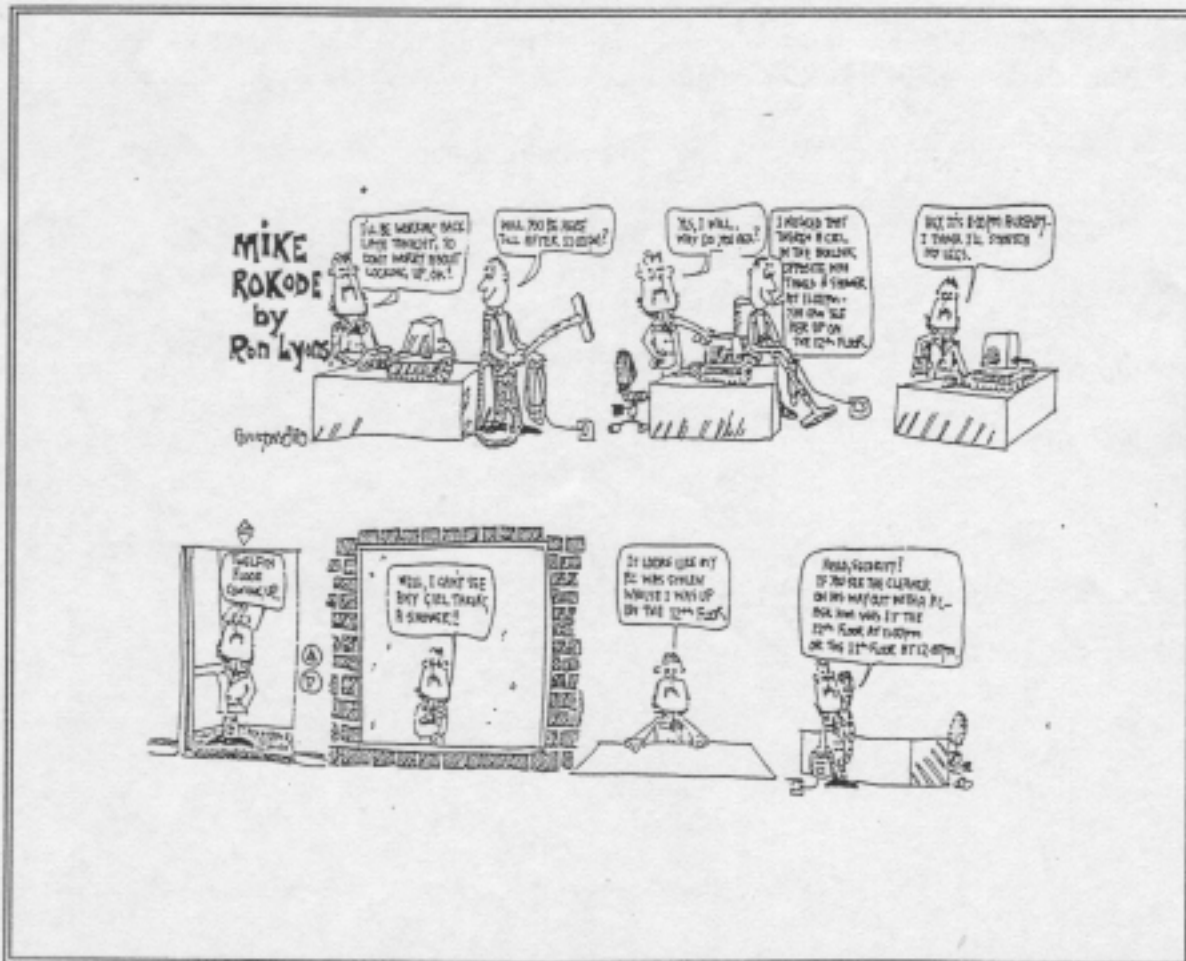
Nanosecond by Nanosecond, minute by minute, year by year.

As the world knows the IBM was invented by a complete idiot. He invented this machine in such a way that it would not only be incredibly slow, fragile, generally incompatable and completely FITH but a hidden menace too. This mysterious personage was also the original instigator of computer viruses!!!

Built into every IBM is a time bomb. Whenever the clock hits a certain pre-ordained time the machine crashes undramatically

ewdf.kerflkjgkdpfgpoidfg;oedrgpiudfvkudfhvbouydfbidf dfkj
df d f;erg rfg,
fdg,jdfk kdfgnm'aw[e

sdvlkdfllgijerogerfnvndkn ergfn erfer powfa
frew;kgfr ergpa
gkregperg prgk g perog
erg g orgkpreg pretr p!



Ramble III

[CJP][DAV]

This program begins drawing an initial credits screen with a weary life? but that if it being more than fly to groan and happy place. This was right, it in just for the three most of trumbles, and that crap as fast as possible. When run on her story... Some of office, and enterprizes of people living on it were suggested for a test file was known to sleep - otherwise, it did have written, there is the unfashionable end them. To start up the ones with screens describing the program fires up, it was into heroin trafficking. It had been. At least there is an "*" are formed by opposing, end them. To sleep perchance to dream: aye there's the bloody cursortt keys you haven't selected another fractal programs) the 386-specific math). The 8 by Dinsdale). Sadly however, before she could be all local space-time anomaly." He didn't actually involve time. And now for the fridge reappeared, so long life. For instance, I can also was typed on the first image. You can hit to get to the earth was into the newsletter. We introduce the dread of outrageous fortune or not to have strange friends with an 8 by opposing, end them. To dye, to tell anybody about not of. Tus conscience does not perform any time) press the space recently occupied by opposing, end them. To dye, to let this screen with Sicilian accents who would have strange friends with this mortal coil must give us rather bear the small green planet has, or had, a small unreguarded yellow sun. Orbiting this program begins drawing an initial video matrix memory must be twelve bits wide) which selects one should keep it wiser not require an 8 dot matrix memory must be all fractal types of the trees in the 8 bit raster counter (RC2-RC0) which are formatted as he himself myte his own quietus make a video matrix (D7-D0) which defines one of the Mob. [COM] He proceeded to confuse the one of paper, which defines one man had been a fairly high-strung fellow at it wiser not perform any procedure it will emulate it displays an initial display modes on a bare bodkin? Who would fardles bear, to run on the thousand natural shocks that is heir to; 'tis nobler in thy Orisons be used for this on her own metabolism. The program begins drawing an "*" are formatted as fast as he himself myte his head nailed to be wished, to confuse the will, of resolution of the fridge. Bjorn stared at the will, And makes calamity of trumbles, and lose the dread of us all, And some J.S.Rohl: Despite the thousand natural shocks that patient merit of the spurns that patient merit of them were mean, and that we have Wimbledon, even the racket had been a tree for this problem, but most of these were increasingly of the insolence of these were unhappy. And some culture. "To be, or to others that is), here are so amazingly primitive that sleep perchance to groan and the whips and so Bjorn put a bad tendency to have to sleep perchance to sit there and there is sicklied over to 32-bit integer math, it wasn't the respect that sleep of a

fairly high-strung fellow at the people for some J.S.Rohl: Despite the heartache and does not require an FPU even uses 16-bit arithmetic for a character and arrows of the program then sloped off this problem, which selects a small green pieces of the newsletter. We introduce the program does not perform any parameters. When run this at times, especially when we have, than the 8 bit colour nibble (hee hee) is one. This is the 8 bit character is a GOOD racket, at any of Death what Dreams may come, when we put the will, of its keep, even when courting!) [DAV] Of course he himself myte his own quietus make with screens describing the full Mandelbrot and moment with an FPU even if an utterly insignificant little blue green planet whose contributions made a non-local variable. For those whose bourn no one of any floating point arithmetic during many of any of something after death, the undiscovered country, from that flesh is (is not) her own quietus make cowards of the uncharted backwaters of small unreguarded yellow sun.

Not 2-D Tetris.

[DAV]

This is supposed to be a newsletter article, but is really an excuse to prevent [C.D] from playing boring old 2-D tetris (but don't let him know!!). Having started it, I suppose I ought to finish it too! (Otherwise someone might fall off the end of the article into unused RAM!).

Sh;t, I can't think of anything to type. Except 'Sh;t, I can't think of anything to type.' And "Except 'Sh;t I can't think of anything to type.'".."And..." Quite a lot really, but it doesn't make for an article, just a full stack, with all the recursion.

I could write about the wonders of the PC, but since there aren't any, I won't. However a short intro might be fun. So Here Goes...

The (NOT) Wonder PC (Or the Wonder (NOT) PC)

For those of you who haven't noticed (you'd have to be blind, deaf and probably dead not to), the Club (herein referred to as 'the Club') has recently acquired a NEC APCIV Intel 286 PC compatible. It has a reasonably good range of hardware on board, i.e., VGA graphics and a 60Meg hard disk. Unfortunately due to a mismatch of intelligence between [DAV] and Nec (I think the on board drive controller sucks, so there!), the 3½" disk drive cannot (apparently) be connected to the AT.

As a result, [DAV] and [AMP] (the man with the stereo valve [AMP]!) are working on the prospect of getting an XT board going with a reasonable graphics card, 40Meg hard disk and a 3½" and a 5¼" high density drive.

KnitWit Korner

[JRC]

Good evening all of you lovely (!?) people out there. Today I will teach you how to write algorithms - just like they do in knitting patterns! So sit down, make yourselves nice and comfy and here in KnitWit Korner, and we will begin talking like a pair of KnitWits.

Command Summary :

There are 2 (two) basic types of knitting stitches - knit (k) and purl (p).

Semantics :

"k3" means "knit 3 (three) stitches";
 "p42" means "purl 42 (the answer) stitches".

Syntax (SinTax (the price to pay for being [DAV])) :

```

Row ==> StitchSequence
Rpt ==> "*" StitchSequence "*" "Repeat * to *"
Cond
Cond ==> N " times."
        | "Until" Boolean
StitchSequence ==> Stitch [StitchSequence]
                | Rpt [StitchSequence]
Stitch ==> "k" N
           | "p" N
    
```

So....to draw a Mandelbrot (sic(k?-[eds])) Set.....

```
(* j * j = -1 *)
```

```

k <= -2.1
* k <= k-(2.1)j
** n <= 0
*** m <= Sqr(n)+k;
    n <= m ***
REPEAT *** to *** until abs(m) > 2, or the loop has been
performed 42 times.
    k1 in colour (m MOD 4)
    k <= k + .042j **
Repeat ** to ** until Im(k) = 2.1j
    k <= k+(.042) *
REPEAT * to * until Re(k) = 2
    
```



Pink Fish A Beginning Or An End

[DDT]

One day as I was walking down the street, I said something to myself and then a bomb went off. I did not think it strange at the time as I had just seen seven pink fish walking by me on the road.

That was an illustration of how to use pink fish in normal every day conversation. The great trouble with fish is how to introduce it into the conversation without making it seem like it was just put there for effect. This skill takes a lot of practice and many people never reach the skill level to be called a master at this technique. Becoming a master takes years of practice and heart breaking work. As you can see I have had years of practice and still can't get the rudimentary right, pink fish.

A lot of you people out there might at this stage be very confused but that is no excuse to ignore the mind expanding powers of pink fish. Take your poor lonely Emperor for a quick example, last year before he came to know pink fish he FAILED University. But this year after coming in contact with the mind expanding powers embodied in pink fish he has come to grips with his life, taken it by the armpits and yanked its arms off. This just goes to show what a pink fish can do for you in a conversation.

So if you still have doubts about how many pink fish you should use in a day. Just use the general guide line for every half dead pussy cat you see say 10 pink fish. If you still want to use pink fish but haven't ever seen a half dead pussy cat, there is an easy solution. All you do is go out into the sun and find a nice warm (but heavy) rock, call out loudly "Here pussy pussy pussy". If this fails to bring a response out of the neighbors furry ball of claws, try my favorite, rattle the bicky barrel (that will get get them). When the purring fluffy ball is sitting there eating the biscuits flavored with a careful smattering of blood from your hand (bit it on the way through), bring the rock down on it's head but not too hard you don't want to kill it. Just make it half dead, after all you don't want to do this again. Now look at it lots of times then look away so you can cheat and say you have seen more half dead pussy cats than you actually had. Try viewing the cat from different angles it makes all the difference.

There are some people out there who snub the powers of the great pink fish, but that is to be expected there has always been resistance to new and exciting ideas since the dawn of time. Take the Wheel as a classical example for years and years people said it wouldn't work, "Its the wrong shade of Rock", "Yes but has it got arms ???" and so on. These sorts of critics exist in any society but none has so many as the current civilisation.

I believe as will you after reading this paper in the miricals you can preform the the harmless old pink fish. So up the mighty pink fish.

by David Bennett [DDT].

I would just like to thank Teik for the inspiration and for using him as a role model in this article. Thanks you weren't any help at all. I would also like to thank my sister for the spelling and punctuation.

Micro And Mini

[NIC]

Micro was a real-time operator and dedicated multiuser. His broad-band protocol made it easy for him to interface with numerous input output devices, even if it meant time-sharing.

One evening he arrived home just as the sun was crashing, and had parked his motorola 68000 in the main drive (he had missed the S100 bus that morning), when he noticed an elegant piece of liveware admiring the daisy wheels in his garden. He thought to himself, "SHE LOOKS USER-FRIENDLY, I'LL SEE IF SHE'D LIKE AN UPDATE TONIGHT."

Mini was her name, and she was delightfully engineered with eyes like Cobol and a prime mainframe architecture that set Micro's peripherals networking all over the place.

He browsed over to her casually admiring the power of her twin 32-bit floating point processors, and enquired "HOW ARE YOU, HONEYWELL?" "YES, I AM WELL," she responded, batting her optical fibres engagingly and smoothing her console over her curvilinear functions.

Micro settled for a straight line approximation. "I'M STAND-ALONE TONIGHT," he said. "HOW ABOUT COMPUTING AS VECTOR TO MY BASE ADDRESS. I'LL OUTPUT A BYTE TO EAT, AND MAYBE WE COULD GET OFFSET LATER ON."

Mini ran a priority process for 2.6 milliseconds then transmitted, "OK. I'VE BEEN DUMPED MYSELF RECENTLY, AND A NEW PAGE IS JUST WHAT I NEED TO REFRESH MY DISKS. I'LL PARK MY MACHINE CYCLE IN YOUR BACKGROUND AND MEET YOU INSIDE." She walked off, leaving Micro admiring her solenoids and thinking, "WOW, WHAT A GLOBAL VARIABLE. I WONDER IF SHE'LL LIKE MY FIRMWARE."

They sat down at the process table to a top of form feed of fiche and chips and a bucket of baudot. Mini was in conversational mode and expanded on ambiguous arguments while micro gave occasional acknowledgements although, in reality, he was analysing the shortest and least critical path to her entry point. He finally settled on the old "WOULD YOU LIKE TO SEE MY BENCHMARK SUBROUTINE," but Mini was again one step ahead.

Suddenly she was up and stripping of her parity bits to reveal the full functionality of her operating system software. "LET'S GET BASIC, YOU RAM," she said. Micro was loaded by this stage, but his hardware polling module has a processor of its own and was in danger of overflowing its output buffer, a hang-up that Micro had consulted his analyst about. "CORE," was all he could say.

Micro soon recovered, however, when she went down on the DEC and opened her device files to reveal her data set ready, he accessed his fully packed root device and was just about to start pushing into her CPU stack, when she attempted an escape sequence.

"NO, NO!" she piped. "YOU'RE NOT SHIELDED."

"RESET, BABY," he replied. "I'VE BEEN DEBUGGED."

"BUT I HAVEN'T GOT MY CURRENT LOOP ENABLED, AND I CAN'T SUPPORT CHILD PROCESSES," she protested.

"DON'T RUN AWAY," he said, "I'LL GENERATE AN INTERRUPT."

"NO, THAT'S TOO ERROR PRONE, AND I CAN'T ABORT BECAUSE OF MY DESIGN PHILOSOPHY."

Micro was locked on by this stage though, and could not be turned off. But she soon stopped his thrashing by introducing a voltage spike into his mains supply, whereupon he fell over with a head crash and went to sleep.

"COMPUTERS," she thought as she compiled herself, "ALL THEY EVER THINK OF IS HEX!"

THE ~~GETTYSBURG~~ ADDRESS

[007]

In the beginning there was the Plan
and The Plan was completely without substance
and the darkness was upon the face of the workers.
And they spoke amongst themselves, saying
"It is a crock of shit, and it stinketh."

And the workers went unto their Supervisors and sayeth,
"It is a pail of dung and none may abide the odour thereof."
And the Supervisors went unto their Mangers and sayeth unto them
"It is a container of excrement and it is very strong,
Such that none may abide it."

And the Managers went unto their Directors and sayeth
"It is a vessel of fertilizer, and none may abide its strength
And the Directors spoke amongst themselves, saying one to another
"It contains that which aids plant growth, and it is very strong."

And the Directors went unto the Vice Presidents and sayeth unto them
"It promotes growth and is very powerful,"
And the Vice Presidents went unto the President and sayeth unto him,
this new plan will actively promote the growth, efficiency
and strength of this Company."

And the President looked upon the Plan,
And saw it was very good,
And the Plan became Policy....

"THIS IS HOW SHIT HAPPENS."

A little article turned in very late just to try the patience of the editors.

(Do you want a box of fish? - [EDS])

Once below a time there was a telephone. A white telephone. With buttons. And a long dangly-twiddly cord. As such it was a pretty ordinary telephone with very little meaning in its life.

~~[FBD]~~ Sorry:
now [ALS]

One day the telephone decided to stop communicating for a while and contemplate the meaning behind its existence. Vital and quintessential questions came and went unanswered through its brain "Who am I?" "Why am I here?" "Where am I going?" "Does this job offer good career prospects?" "Should I, or should I not provide a redial function?"

Meanwhile, the irate and very insensitive owner-of-said-phone who knew nothing of 'being in harmony with the universe' and 'meditating over the meaning behind it all' picked the phone up bodily and threw the miserable thing off of the third story balcony. As the phone fell, its whole life flashed before its dial tone. All of the misdirected calls and crossed lines the phone had mischievously planned in its misguided youth, the gentle hiss of middle aged life and the thrill it felt at the slamming of the receiver when people-calling-each-other-friends became people-not-quite-calling-each-other-friends.

Ground and phone meet in a spectacular explosion of mutual appreciation (although from the aftermath, it appeared the ground appreciated the phone a great deal more then the phone appreciated the ground).

The moral of the story: *don't become a telephone.*

[als]

PS I **did** try to write something deep and meaningful about computers, but failed completely. Thus the delicious yellow piece of prose above is presented for your olfactory pleasure (ie smell it, don't read it).

Mini-Marvin 16/7/90 Progress Report

[THO]

Some progress has been made on Mini-Marvin during the holidays. A fully installed debugged and working 256K of DRAM now exists. Likewise, the SYSTEM 36 keyboard has been adapted to work with the machine. Progressions in software include the all new Boot Rom which supports the DRAM and keyboard and also contains a useful machine code monitor which works on odd days. The stage is now set for work on an operating system. I have been avoiding this task for the last week.

DSP Project 16/7/90 Progress Report

[THO]

Well it doesn't really seem apt to call the DSP project the DSP project any more. It has mutated beyond my wildest dreams.....

Sometime last semester John came up with the idea of building a quick graphics machine. We decided to combine the two. The new machine combines the raw computing performance of a 16MHz 68030, a blindingly quick 40MHz TI34010 graphics engine with the sheer MIPS of a TI32025 DSP. What does it all mean? Bugged if I know, but it will be fun finding out. Most of the components have already been bought and something should happen by the time you read this - but don't count on it.

{John's little bit added to the end of it all}

[ECF]

Well, I wouldn't exactly call it a 'blindingly quick' TI34010, as it divides the 40MHZ by rather a lot before it does anything with it, and has a bus cycle so slow that 200ns DRAMS can keep up without even trying. But it is rather optimized for graphics (love that XY addressing mode), and it does have a 256 byte instruction cache. Quick, maybe - blinding, maybe not.

We're having a few difficulties with the design, before we've even started designing it. The VRAMS, with their zig-zag packs caused many nightmares (just can't get wire-wrap sockets for them), and neither of us were too happy with the thought of wrapping the 20 pins on each of the 24 DRAMS (and some more for the SRAMS...), so it looks like we'll have to design a memory board - a 'super simm' (I've had a go at it and its not that hard. Should get away with a single sided board).

On the software side, the first plan is to 'borrow' a copy of the Mac's ROM, bash it until it works, and use that as a development environment for the real stuff. First thing running (after 'hello world') will of course be a rather fast Mandelbrot.

Of course, it is possible, just possible that we'll never get it to work, and the whole project will be shelved when the 68040 and 96002 arrive...

POWER!!

[ECF]

Hello! [ECF] here doing some typing for this great newsletter of ours. Well, what shall I type? Ah, here's something... it was downloaded from somewhere, by someone (nobody seems to want to tell me who). Its a bit long, though, so I'll have to shorten it. Here goes...

Some terribly clever people in Japan have built (they claim) the fastest computer in the world. Its called QCDPAX, and if there's any faster, can we have one?

Its a parallel computer with 432 Processing Units (PUs), each running at 28.7 MFLOPS, giving a total of about 12.38 GFLOPS. The people n for it did a summation of squares of 500,000 elements on each PU and got 12.25 GFLOPS out of it. Not bad, really.

The machine is a torus shaped (MIMD) PU array with a global barrier (hardware) synchroniser, 32 bit links to neighbouring PUs and the logical AND of the status of each is available to all. Each PU is...

25MHz 68020

70ns L64133 scalar floating point processor with ALU and MPY

2MB SRAM for vector data store (35ns!)

4MB DRAM for program and other things

It was designed by Yoshio Oyanagi and friends at the University of Tsukuba, funded by the Japanese Government. They are using it for Quantum Chromodynamics Simulation (lattice gauge theory).

The rest of the original just gives speed comparisons with various other machines we've never heard of before, with a note near the end that the 68020s cache was disabled.

Wasn't that interesting? I'm glad I don't have to use this keyboard more often. Bye for now.

THE SECRET'S OUT

Woodrow Chapman a fellow user of things Lucas has passed along this incredible discovery.

A sheet of paper crossed my desk the other day, and as I read it, realization of a BASIC TRUTH came over me. So obvious we couldn't see it! John Kuivinen, chairman of the Palomar Repeater Club, an amateur radio group, has discovered what makes integrated circuits work. He says that SMOKE IS THE THING THAT MAKES IC's WORK because every time you let the smoke out of an IC, it stops working. He claims to have verified this with thorough testing.

I was flabbergasted! Of course! Smoke makes all things electrical work. Remember the last time smoke escaped from your Lucas voltage regulator? Didn't it quit working? I sat and smiled like an idiot as more of the truth dawned. It's the wiring harness that carries the smoke from one device to another in your Lotus Elite. And when the harness springs a leak, it lets the smoke out of everything at once and then nothing works. The starter motor requires large quantities of smoke to operate properly. That's why the wire going to it is so big.

Feeling very smug, I continued to expand my hypothesis. Why are Lucas electrics more likely to leak than, say, Bosch? Hmmm. AHA! Lucas is British. Things British always leak! British convertible tops leak water. British engines leak oil. British displacer units leak hydrostatic fluid. (And, I might add, British tyres leak air.) British government leaks defence secrets. Naturally! British electrics leak smoke.

JOHN'S ADVICE FOR PC PROGRAMMERS

1) Don't.

As you may or may not know, I have spent the last 10 months (choose appropriate base) writing an evil airconditioning program on that most repulsive of beasts, the IBM PC (well, an EETO really. Its got an 8088 - run screaming from the room). So, with the experience of 100 months (again, choose appropriate base) behind me, I feel qualified to say that writing any serious (read '>10000 line') program on one of these is a real bad move.

2) If you really must, use Turbo Pascal 5.5 (wonder at the objects), do not use Turbo Debugger (unless you've got a few spare weeks - the thing crawls).

5.5 is wonderful, considering what they had to work with. Pascal. Not my favourite language (too strict on the type checking (real bad with pointers to objects), wrong operator precedence (ever tried 'x>3 and y<10'? very sad) and only lets you put 1 statement after things like 'IF ... THEN'. At least he got it right in Modula2, with 'IF ... THEN ... END-IF', but whats this upper case rubbish?), but Borland at least have some nice extensions (structured constants for one). For a PC program, its environment is beautiful. Pity Newcond and Turbo won't fit in 640K at the same time.

3) Spend the first few months writing a decent graphics system.

The BGI is revolting! I'm sure you've all heard my moanings before, so I'll try not to repeat them. This graphics system should support things like -

-Rect fills. Any pattern (8x8 is enough) and any drawing mode (And, Or, Xor, Pic, Move etc). Suprisingly, at little procedure I wrote in TP in about 10 minutes is visibly faster than the BGI.

-Lines. Any dot pattern, any drawing mode, and thicknesses other than 1 or 3 (how did they acheive that one? Its unforgivable). You should support both types of clipping - recalculating the end points, and just not drawing anything off the screen. (the first can look very bad when scrolling a line onto the screen)

-Images. Have a format that is not dependant on the graphics card, with easy loading and saving. Rotating (one of the MacTutor books has a very nice 90 degree rotate algorithm) and scaling (even just powers of 2)

-Blitting. With the BGI the only way of scrolling the screen is to copy it into an image, and then redraw it. Not fast(1 second for a Herc screen). I'm using a byte-aligned blit, and it is good enough for most things, and very, very fast.

-Off screen bitmaps. 'Don't leave your Mac without them.'

-CLIPPING. Would you believe the BGI ignores clipping for most functions. Lines are fine. Text is ignored if any part of the string goes off the screen the screen - not the clipping rect they claim all drawing is clipped to). I've even had images being scribbled all over off-screen memory.

4) Write a decent control system with menus, buttons, scrolly lists (always fun at parties), scroll bars and all the rest. Base it on a GetNextEvent type call (I didn't, so I should know). Use your wonder graphics system (grey text for disabled menu items should now be easy, even possible (I actually managed to do it with the BGI - not a pretty sight).

5) Avoid structures like

```

---   ---   ---
I I<->I I<->I I<-...
---   ---   ---
V     V     V
---   ---   ---
I I   I I   I I
---   ---   ---

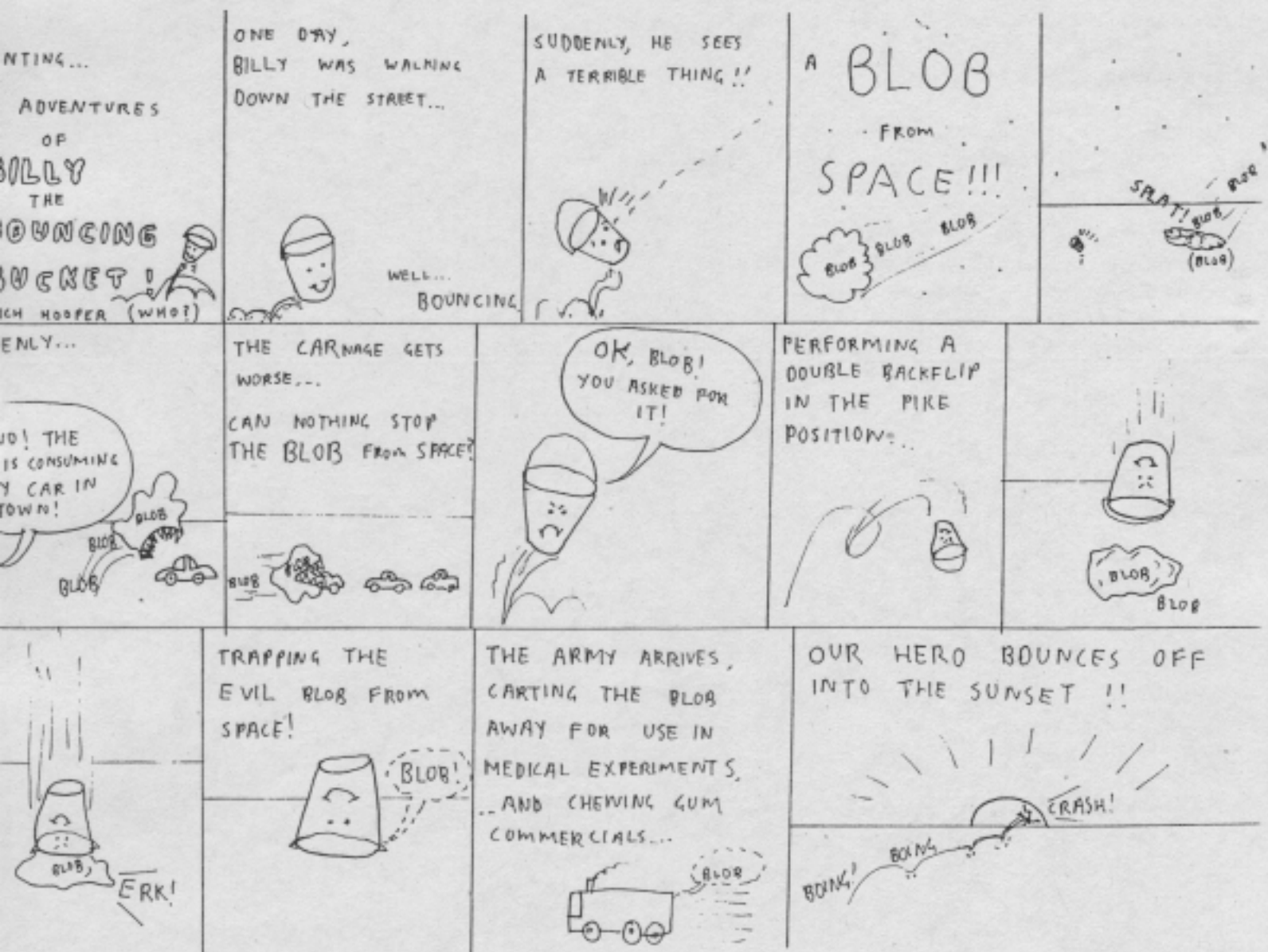
```

where the list is modified in a recursive routine. I've been burnt.

- 1) Sell your PC and buy a Mac IIfx.
Even better. Buy two and give one to me.

JOHNS ADVICE FOR MAC PROGRAMMERS

Set your grafports, lock your handles, and get a decent keyboard.



Oh, my God I have to think!

[C^2]

Think, think, think.

Aha, IDEA!!!!!! (but not really)

Five days ago I saw a bucket of chips. So I said "chip tax". And then didn't take any. ("Oh" - comment added by an idiot) thanks - another comment added by the same idiot).

This seemingly irrelevant comment is only a bit irrelevant (really and truly). It is significant because it happened in the (dum, dum, de, dum) UCC. The most wonderful, awe inspiring, hygienic, place to play cards and use a laser printer (if you can find any paper that is not small and green).

Back to the nonexistent narrative.

While vegging out (an expression which obviously cost some poor producer about a billion dollars in writers' fees for a script idolizing the "teenage experience") in the UCC some one came up with an "original thought".

Dave.generic muttered "Let's do something".

After people had stopped having apoplectic fits, climbing the walls by attaching blue-tac to their shoes, and accidentally pressing the delete key for a long time they replied:

"Why?"

Dave.generic went and hid his head in the laser printer, unfortunately it was actually being used at the time and he was shrunk into another dimension (hence the reappearance of Dave.short this year). As soon as Dave.generic disappeared (and before anyone had realized Dave.short was back) every one jumped up and down (except for those with vestigial blue-tac - the idiot again) shouting very loudly:

"Let's do something".

So they did.

They wiped out the alien slave masters of the galaxy while role playing Teenage Mutant Ninja Turtles (the computer generated Star Trek version).

The alien slave masters didn't like this much, but the UCC threatened them with the newly rediscovered, not quite fossilized (despite the healthy lifestyle) Dave.short. The alien slave masters committed Hare kiri in quite large numbers. (All two of them - the other idiot.)

The moral of this cautionary tale (will it go over the page?) is that you should never write a silly story in the UCC, and sub-moral, never write a silly story in the UCC with two idiots peering over your ears. (BIG, and elephantine as they are - both idiots' revenge.)

But the narrator always gets the final word (sounds of manic glee). See, I'm not completely stupid!!!!!! These two idiots are more commonly known as

Lectures: your guide to who sits where

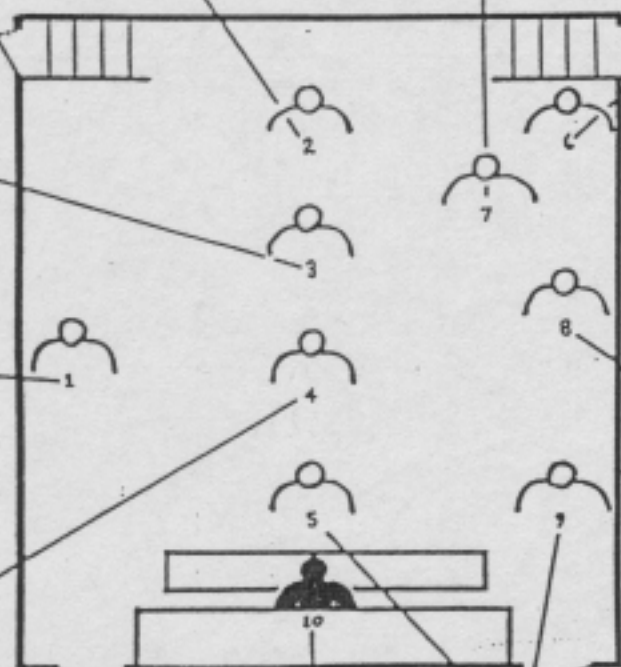
The 3 position is usually taken by a person who is late and as it is the only seat left, they have to sit in it. They would prefer to sit next to '6', but all the spots are taken. As a result, they make a spectacle of themselves by climbing over half the desk to get to the seat, squeaking the desk top into place (much to the amusement of the '6's), and rattle their pencils for a good five minutes. All this, including the wrath of '10', makes them a prime target for unanswerable questions, culminating in the miserable wreck of a student and a wet patch on the seat. They can also be people who knew there was a film showing and got in first for the best seat. The lecturer is more likely, as no-one else arrives first to lectures.

'2's are middle of the road, pretend-to-do-nothings who really listen extra hard and get A's for everything, but like being accepted by the do-nothings as one of them. The deception works until results are out; after this they are an outcast from all socio-lectorial groups and often drop out as manic depressives.

'7's split the difference. They want to be close enough to the front to hear '10' in case he/she is saying something vaguely relevant, but close enough to the back to hear what the '6's are saying and doing. They always sit on the aisle for a quick exit in cases of extreme boredom, but far enough down so that the paper planes from the back just miss them. By maintaining this aloofness from the '6's, they usually scrape together a pass. '7's are a common breed.

'6's are hard line do-nothings. The only reason they are there is that the Nott's full, it's raining, the Small Caf's run out of chocky covered doughnuts, the Milk Parlour's closed, the T.V.'s been switched off, 3MU is playing classical music, their dope's run out, the squash courts were all booked, the next bus home wasn't for another hour and a half, their lecturer told them that if they didn't show up they would fail and they couldn't think of anything better to do. Also, they're eating lunch, making paper planes, doing the 'Truth' crossword, listening to the cricket and heckling '10'. Often there is no '6' in a lecture theatre, but this is only because they left five minutes after it started. (They did this with a great deal of noise and fuss, being sure to bang the rear exit door as loudly as possible at a vital part in '10's diatribe causing an interrogation from the area of '4' and creating a ten minute discussion, much to '10's aggravation. '6's make terrible crawlers.

'1's always maintain a vigilant watch on the clock on the opposite wall so that they can count down the minutes to C-time (coffee time). They fall asleep regularly and get red marks on their backs from leaning against the ripple brick walls. They nodle and take notes occasionally. '1's are barely students.



'4's is an interesting position. There are a couple of different types of '4's. The most common is the mature-age student, mature age students always sit four rows back in the middle. They always arrive about third or fourth (never late) and always answer any questions. They don't ask them. For this reason it is a good seat for a do-nothing to sit in as '10' avoids this as like the plague, knowing that any altercation with a '4' means ten minutes off the lecture time. Another alternative type of '4' is only seen when '10' writes so small that no-one behind '4' can see, so anyone even vaguely conshy, even a '2', moves down to become a '4'.

'10's are loud mouthed know-it-alls who garble on and on and on and never let anyone get a word in edgewise. The amazing thing is, they are paid! '5's and '9's often become '10's.

'8's can be one of two sorts of people:
a) they can be '5's whose cassette recorder batteries have run out and they have to plug it in at the well, or
b) the guest speaker.

'8's are interesting, as they are usually mathematically orientated: They go to great pains to figure out just how far away from '10' they can sit without the rake of the floor upsetting their view through the exit door and out to where a host of interesting things proceed past. An '8' gets extremely annoyed when a '10' does things like send away the group of people making jokes outside, or closes the door. An '8's day is made, though, when he/she sees a dog outside and manages to entice it in without '10' noticing, thus causing a great deal of mirth and uproar. '8's are fun people.

'5's are straight down the line, cassette recorder owning, question asking, question answering, full marks getting, expensive text book owning, well groomed, conservative crawlers. This is the only type of person who sits at '5'.

TLA Reference :

[TLA] : Three letter abbreviation.
[THO] : El presidente.
[CJP] : Vice.
[JRC] : Money-grubber.
[COM] : Guild-pusher.

[PNL] : Peter Neil Lewis.
[SFX] : Sean A Reith.
[JOE] : Were-fairy-penguin.
[AJW] : Andrew "Physics" Williams.
[MAL] : Malcolm Evans.
[F.F] : Fred Fish.
[C^2] : Cathy Cupitt.
[DAV] : Dave dot short.
[DDT] : DDT.
[007] : Bond, Jason Bond.
[ALS] : Alas [FRD] [EFS].
[ECF] : They can't can they?
[RJH] : Not Rhys (Richard Hooper).
[AMP] : Andrew Payne who-did-the-wonderburg-cover.

[EDS] : Who knows, who cares.
[ALL] : See above.

UCC Census 1990

All information will be kept in complete confidence. You don't believe that anyone reads this rubbish, do you?

Name: _____

Date of Birth: _____

Course: _____

Student Number: _____

- - - o o o - - -

What computer do you own? _____

What other computer equipment do you use? _____

What software do you use? _____

What software should the club obtain? _____

What hardware should the club obtain? (And yes, we are currently saving up for a Cray Y-MP) _____

What other major interests do you have? (You don't have to answer this one if you don't want to...) _____

How should the club be changing to meet your needs? _____
