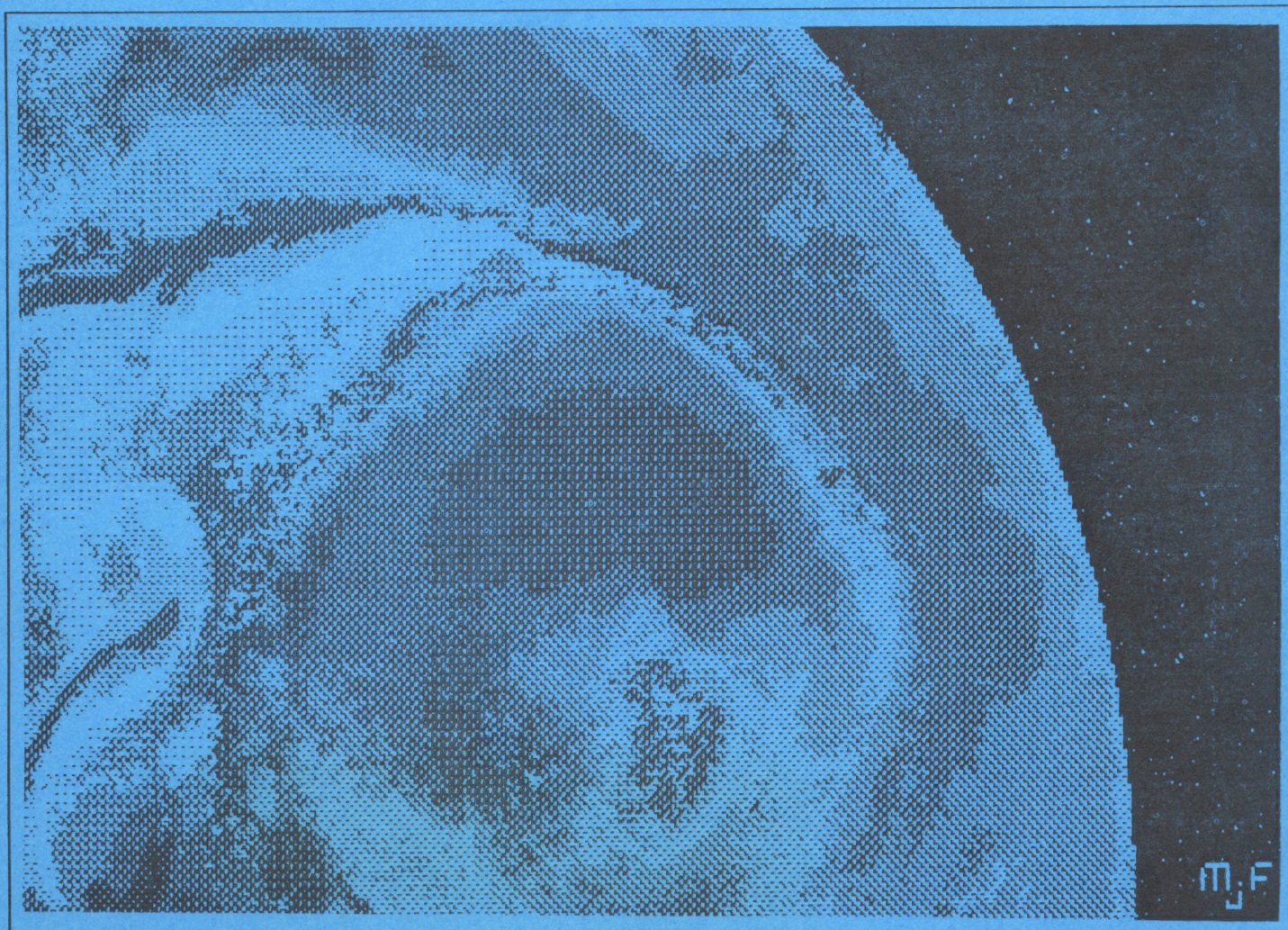# DAL-ACE

Volume 10, Issue 2   February, 1989

Dallas Atari Computer Enthusiasts

PD Disk Library News - 8-Bit and ST!... All About Floppies... Laptop Fantasies...
Tweety Board... Calling all artists... and the Editor's ramblings!

Table of Contents

Smart REMarks

By Angela Burns

Yeah, it's me again. You probably thought you'd heard the last of me, but I'm back. My annual Christmas panic and the ensuing burnout is over now, and I can think straight again. Well, as straight as I ever think.

My thoughts on the past year and on the year to come:

Dal-ACE has been through a heck of a lot in the last few months. There was quite a bit of confusion and not a little feuding among some factions of the club which had differing viewpoints of what we wanted to accomplish and how to go about it. Membership is not what it was a short time ago; in fact, I was not alone in my fear that Dal-ACE was soon to be no more. In short, 1988 was not our best year.

But... some of us didn't give up. Some "old timers," some newcomers, just couldn't bear to see the club die. And we held it together.

1988 saw the demise of some groups. It saw some whose boards resigned en masse because of all the infighting. Some had to give up their newsletters; heck, some of the newsletters even left on their own!

But we're still here. (This is where you start humming *Glory, Glory Hallelujah*.) We still support all Atari computers, from the 400 to the Mega, and yes, the dreaded XEGS. And we'll support the IBM clones, and the laptops, and whatever else is down the road. We still have our libraries, our newsletter, and our BBS; the Big SIG is coming up as I write this, and we're making it. And I don't care how many of you come up to me at the next meeting and tell me how sappy this editorial is; I'm used to it.

So if you're still with me, give yourself a hand. You deserve it. We all do. And I think we're going to make 1989 a standout year. Just watch us.

Newsletter stuff

Thanks to our most recent crop of authors: Sandra Higgins Hanna, Larry Rymal, and Ralph Salmeron. Belated thanks to Ralph Tenney for his informative articles on WordUp and GFA BASIC recently. We expect to be hearing more from him soon.

We also have the second in a series by Bob Wooley of SLCC, detailing his quest for true DTP output from an 8-bit. See how he's doing, then stay tuned for next month.

Rogers

ST Library News

By Angela Burns

New Disks

Dal-ACE ST Disk #114 and #115 are filled with .IMG images, mostly of wildlife, that you can use with your DTP programs such as Timeworks Desktop Publisher ST. They are taken from books of copyright-free clip art and are very well drawn; below are some examples.

Disk #114 also includes a program in an AUTO folder that will play digitized sounds. A recording of HAL, 2001's recalcitrant computer, will play when you boot with this disk. And UD.ACC, a useless but clever accessory that turns your screen upside down. Then it's called "Rightside Up."

Disk #115 includes two monochrome graphics demos. KALEID.PRG draws a beautiful, ever changing kaleidescope-like pattern on your screen. MONODEMO.PRG is a pattern of discs moving across the screen, bouncing from the borders and leaving criss-crossing trails.

Coming up

At our February meeting, we'll have five new disks. We've got games for the whole family, clip art, and lots more, so don't miss 'em!

ST Disk Catalog

The Dal-ACE ST disk catalog has been completed and is available in two forms: on disk in ASCII format, and printed out in convenient folders so that new pages can be added with ease.

The catalog has been divided into three parts:

- The table of contents gives a general category for the disk (i.e. Graphics or Utilities). If applicable, the name of any program(s) that may be of special interest is also mentioned here. Here's where you can sort through and find, in a flash, only those categories of software that interest you, like so:

Dal-ACE ST Disk #1 . . . . . .Telecommunications. Demos.
    Accessories. Drawing

- The disk descriptions section gives you an overview of what's on each disk. Each program on the disk will be mentioned either by name or according to its purpose (disk formatting, sector editor, type-in adventure, etc.). This will tell you exactly what's on each disk without making you wade through technical information that you may not want. Example:

Dal-ACE ST Disk #1
Telecommunications, Demos, Accessories, Drawing

BREAKOUT is an accessory version of the popular game.

HEX.PRG draws a med-res picture. If you like viewing pics, try **SLIDE.PRG**, a slide show program that works in any resolution to show .PIC files (two are included). We also have three color demos, **LOWCIRC.PRG, LOWDEMO.PRG**, and **PIERAM.PRG**. That last one is particularly neat; it's an undulating pie chart.

STERM.TOS is a simple terminal program from Argonaut Software.

DOODLE.PRG is the first of the public domain paint programs. **FAT.PRG** is a rudimentary drawing program.

- The program listing section lists every program on each disk and a short description of each. Such files as source code and resource files will be so noted in this listing. The more technically oriented among you will find more detailed information about exactly which files are on each disk, and what each does. Thus:

Dal-ACE ST Disk #1
Telecommunications, Accessories, Demos, Drawing

BREAKOUT.ACC - desktop implementation of the game Breakout

HEX.PRG - med-res graphics demo
LOWCIRC.PRG - low-res demo of moving circles
LOWDEMO.PRG - low-res demo of moving figures
PIERAM.PRG - moving color pie chart

STERM.TOS - a simple terminal program from Argonaut Software

DOODLE.PRG - pd paint program
DOODLE.RSC - resource file for DOODLE.PRG
WORLD.DOO - low-res Doodle picture file

FAT.PRG - rudimentary drawing program
FAT.BIN - file used by FAT.PRG

SLIDE.PRG - slide show program shows .PIC files on screen
AAFLAG.PIC - low-res picture files
ATARI.PIC

- The index lists each program by name, in alphabetical order within its category, then gives the right disk number(s). If you're looking for a specific program name, this is the place to look. Example:

Have you bopped
your computer today?

ANIMATION

ARC PROGRAMS

It's less complicated than it sounds. I hope that the new catalog format will make it easier for all types of users to find exactly what they want in the library.

Reorganization

As I was doing the catalog, I found that many disks contain a wide variety of subject matter, i.e. utilities, games, telecommunications, and other stuff on the same disk. As I get a chance, I will try to reorganize them to make each disk pertain to only one subject. If you want a game, you won't have to buy a terminal program, too.

I will also try to weed out some duplicate programs. For instance, we have a bunch of disks dedicated to ST Writer. I'll be keeping the last non-GEM version and the latest GEM version, along with any utilities or special modules. But we probably don't want all those ST Writers taking up space. We will keep archive copies of any programs that are removed from the library; they'll be available by special order for those who really want them.

Mail order

It seems that not many people know that they can buy Dal-ACE pd library disks through the mail. Well, you can! Price is $4.00 per disk for members, $7.00 for non-members (postage paid). For fastest service, be sure to make your check or money order payable to Dal-ACE, but mail your orders directly to me at:

Angela Burns
Rt. 2, Box 1237
Scurry, TX 75158

I'll get them in the mail to you immediately upon receipt of your order.

I'm hoping that the opportunity to receive our library disks via mail order will encourage more of you to participate. We realize that many of you are unable to come to meetings because of work, location, and other reasons. Perhaps you will feel more a part of the club this way. We want you!

The Grapevine

News, rumors, and product announcements

News

COMDEX Developers Conference

Atari held a conference with over 300 developers at last fall's COMDEX in Las Vegas, about which we were unable to obtain any information at the time. Thanks to the HAUG Newsletter, we now have some info on announcements made by Sam Tramiel at that conference:

Atari's DRAM shortage is now over, with monthly production of Megas now at 50,000 to 75,000 per month. European markets will no longer be slated to receive 90% of production runs.

The late first quarter of 1989 will see the Atari laptop shipping. The laptop will have 512-1040K, a choice of floppies, a minimum 20 meg hard drive, and a choice between two blue LCD screens. Target price is $1500. The prototype looked great!

The Atari 68030 Unix box will be released in the second quarter of 1989. It'll be TOS compatible and operate under Unix 5.x. Atari anticipates having an abundant supply for interested developers in the first quarter of 1989.

[Interesting footnote: Atari says there was no developers conference. They say it was simply a reception for those who worked at the Gold Room, but they prefer not to discuss what went on there.]

Ad copy

Atari recently had a quarter page ad in The New York Times computer section. Some people are positively frothing at the mouth with excitement over this. It's probably not *that* great, but it does seem to be a good omen.

Speaking of ads, Atari was advertising recently for 23 engineering and support personnel. Maybe they *do* care about R&D.

MAM Feud

Unicorn Publications and CHAOS are feuding over the Michigan Atari Magazine. There is a disagreement over who exactly owns the magazine and what that ownership means. It has gotten to the point where CHAOS has pulled out of the magazine, and Leo Sell, president of CHAOS, is threatening legal action if Unicorn doesn't stop using the MAM name. Unicorn has no intention of stopping publication, so your subscriptions are safe.

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Do you know someone else with an
Atari?  Let them know about Dal-Ace.
Bring them to the meetings.
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Disk Archivers

The New 8-Bit Library Disk

By Ralph Salmeron

You've been scouring your favorite BBSes for weeks now, just waiting for that fabulous public domain (utility, game, application, etc.) program you read about in Zmag to finally show up in your area. Well, tonite's the night! There it is, staring back at you from the "Downloads" files. Your palms start sweating with anticipation, as you go thru the D/L ritual, visualizing the new heights of personal computing to which this little gem will catapult you. Finally, the "Transfer Complete" prompt signals it's all yours. Ha! You're home free; just pop the ole unARCing program into the computer and zap - nirvana.

Oops!... It's "NOT AN ARC FILE." O.K., must be ALFed! Let's see, got the unALFing program right here... and away we go!! Oh-oh... "NOT AN ALF FILE!" Well, all right, let's try SHRINK... Hmmm... Where did I put that disk? (Rummage, rummage...) Gee, you'd think somebody would have come up with a program, by now, that could identify these files for you. Hey, didn't I D/L one like that a couple of months ago, now where is that... Ah! Never mind; here's the SHRINK program... "NOT A SHRINK FILE"... (Grrr!)... O.K., O.K., how about SCRUNCH? Nope. DISKCOMM? No way! SUPERBOOT?? Forget it! SQUEEZE?? SQUISH?? SQUASH??? STOMP???? SMASH??!?*&%!!!... ACKkkkk!!!!!!

If you've ever found yourself in this predicament, then you'll surely appreciate this month's addition to the 8-bit disk library, DISK ARCHIVERS. If you're new to BBSing (telecommunications), then save yourself a lot of aggravation (not to mention sleepless nights) by getting this double-sided disk now. What? You're not into telecommunications? Well, how would you feel about reducing, by one third, the number of disks required to keep your backups on? Read on!

DISK ARCHIVERS is a collection of the best and most popular public domain and/or shareware archiving programs and utilities available for our 8-bit machines.

On side one, you'll find SUPER ARC/UNARC, a new, faster (3x tighter (20-40%), error-free version completely rewritten specifically for th 8-bit. Not only will it ARC/unARC, it'll read and unALF ALFCRUNCHe files and allow you to "view" the contents of ARCed files without unARCin them. This shareware program by Robert Puff, of Disk Communicator fame, : worth the price of the disk alone. But it's not... alone, that is. You'll also fin the excellent aforementioned DISK COMMUNICATOR, for compacting boo disks (e.g., DOS.SYS, etc.). But wait, there's more. You'll also find SHRINK SCRUNCH, and SUPERBOOT. All are user friendly and menu driven.

On side two, you'll find documentation and three utilities, includin COMPACT DETECTOR, a super little menu driven program that will identif nine (9) different file formats (six types of compacting plus BASIC, Object, an PIC files).

So, hey! What are you waiting for? Fork over three bucks ($6 fc non-members) and start gettin' a good night's rest. You deserve it.

What Kind of Member are You?

Originally from FEEDBACK, 9/85, via ACORN Kernel, 1/89

Are you an active member,
The kind who would be missed?
Or are you just contented
That your name is on the list?
Do you attend the meetings
And mingle with the flock?
Or do you stay at home,
Then criticize and knock?
Do you take an active part
To help the work along?
Or are you satisfied
To only just belong?
Think this over, member,
You know what's right from wrong.
Are you an active member,
Or do you just belong?

Laptops. Boxtops. and Rubles

By Sandra Higgins Hanna

I'm a writer. I use a word processor, namely my trusty Atari 800XL. That is, when it's good weather. When it rains, I pout. I seem to obtain most of my inspired thoughts when the wind rages and lightening strobes through the gloom. That is when words flow forth from my fingertips but are forced through the point of a pen instead of ten digits hitting the keys with fevered orchestration. Simply put, I gotta use pen and paper instead of my computer. Dull, dull, dull. To me, this is not writing. It is agony. I am not good at reading longhand that has turned into chicken scratches by the time the weather clears.

I'm also not always home when a good story hits me, like when I'm on the freeway or at work, or at my in-laws. My handheld tape recorder remedies this problem nicely, but I've stopped using it in public after having a security officer at a local mall inquire as to "what the hell" I was up to and diners asking for a table "away from the looney."

After buying some disks at a local computer store, pocketing my change and heading for the door, I saw **IT**. IT was the solution to my problems. All of them. Blinking before me, waiting for my tender touch was a *laptop computer.*

I felt my pulse pounding. I felt my focus narrow on the LCD screen. I felt the change in my pocket.

Just as I turned to leave my Beauty behind me, up scuttled a salesman. He showed me the power supply that would run Beauty for up to 24 hours. He showed me the memory capacity, the alarm clock that would tell me when lunch was over, and then he told me, quite confidentially, that IT would be on sale next week but that he could sell IT to me today and postdate the sale to make it legal.

I could work when it rained, thundered... hell, I could work through a hurricane! If Dallas got hurricanes. I touched the keys. I scrolled up and down my paragraphs. I was in love. Then the bubble burst. He showed me the price, minus the sale discount, plus the tax, plus the interface equipment I would need to feed my data into my disk drive attached to my computer or a modem.
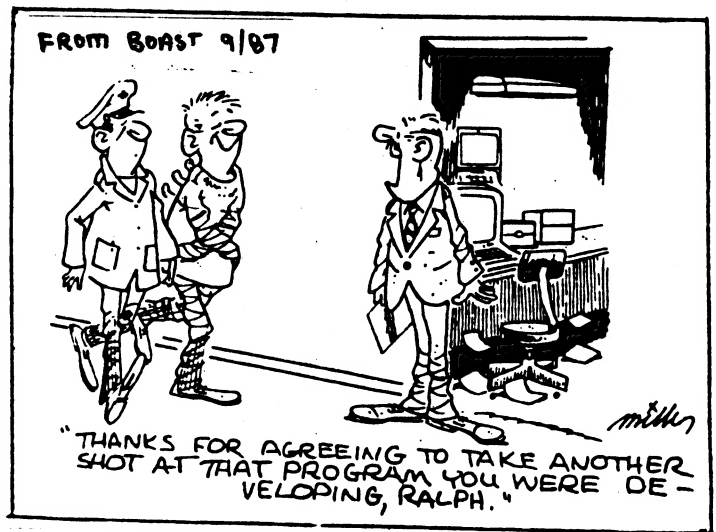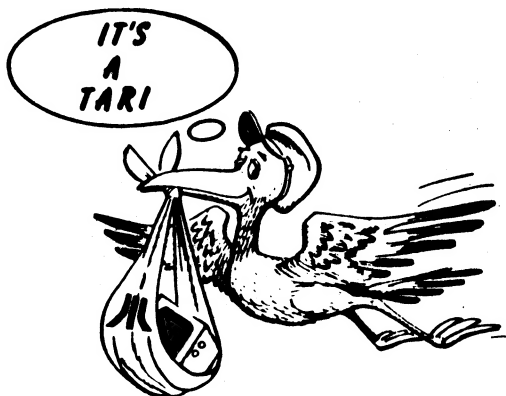
We won't go into the fainting spell. I got home okay. But now I hate my crummy old Atari 800XL. I want that laptop.

It'll take me a year to save up that kind of money, I told myself. Even if they have another sale. Last year's credit card cutting scene flashed through my mind and I watched my Beauty take wings and fly into the arms of another, richer person than I. Just as well, I thought. They were probably trying to dump the thing because there's no warranty support, or the company producing it has gone belly up. My husband's words of comfort were, "Prices on new technology always come down. Remember the pocket calculator?"

"Yes," I said, adding, "and the calculator-watch!" I was feeling better. You can get one with the Trix rabbit on it by sending in boxtops. Once, the calculator-watch was the "in" item on every pro-western dressed Soviet's wrist and now they aren't even on the "must-have" list for foreigners to smuggle in.

Yes, I'll wait a little while longer. I've heard rumors that Atari has heard my wailings and may put my Beauty within my grasp soon. That would be great! But until then, I sigh heavily on sunny days, and pout on the bad ones, and save my money. I'm saving my Trix boxtops, too. Who knows?

FROM BOAST 9/87

"THANKS FOR AGREEING TO TAKE ANOTHER SHOT AT THAT PROGRAM YOU WERE DE-VELOPING, RALPH."

IT'S A TARI

Tweety Board

An ST Review by Larry Rymal (AUNTS, NTACT)

Submitted by Gary Fuquay

Overview: Separates the three ST audio channels, allowing the user to route his sound to three separate sound systems.

My impression: **Strong Potential!**

On a scale of 1 to 10 -
Total performance per dollar: 6
Documentation: 10
Ease of setup: 9
Installation integrity: 5
Must have?: 3 (interesting hack)

Price: $59.95 (list)

Many years ago, the Apple *IIe* was blessed by many third market companies that seemed to push that computer light years ahead of anything that the WOZ envisioned. A stereo card named the Mockingboard, gifted with two channels of 16 voices, complete with white noise generators and costing less than $125, gave the *IIe* audio capabilities that I'd all but kill for on my ST. Indeed, the Mockingboard gave the *IIe* sound that far exceeds that of the Amiga's dual channel capabilities. Not bad for a computer designed in 1977.

Many STers are clamoring for improved sound from the ST. This is a bit puzzling to me because the ST has an advanced audio sound chip. The puzzle comes in the fact that most ST games offer the user advanced "boop beep" sounds. The sound chip in the ST is certainly more capable than that.

Compare many games, such as Captain Blood, that use the digitized audio and the many digitized sound demos. Indeed, the ST's Yamaha sound chip is a capable chip with an audio frequency generation range of 30cps to 125,000 cps. It really appears to me to be under-programmed.

According to the excellent manual for Tweety Board, the Atari ST suffers from the fact that "you never get the full impact of all this sound technology. The main reason is that the ST takes... three independent sound channels given to the chip and combines them into one. This single channel is then fed into an internal amplifier that drives the small speaker in your monitor."

"Tweety Board uses... specially designed circuitry to realize the full potential of the ST's sound. Tweety Board does this by providing you with access to all three channels independently, as they were meant to be."

Well...

Does it?

In short, *yes*. But don't get all that excited. I hope I can explain this well, because I don't want to down the product. Currently, I rate Tweety Board as an interesting hack; that is about as far as I can go.

Incidentally, I gave a nearly identical assessment to the aforementioned Mockingboard in a review for StarText a few years ago. However, the Mockingboard certainly had some advantages, namely in marketing. More on that later.

Okay, let's back up and see if I can repair this ramble.

The Mockingboard suffered greatly in initial acceptance. The problem was that unless a program wrote to the Mockingboard, then the Mockingboard never sounded.

Well, Tweety *always* sounds and in a very undisciplined way. The problem is that the ST's programmers seem to write to whatever channel is on their minds at the time. The Atari ST was *never meant* to have separate audio channels. What happens is that when you hear multiple sounds without Tweety Board, things sound sort of great in their limited monaural way. But when you separate the sounds, then some notes may not sound properly since they are no longer being combined.

Okay, I attempted to rectify this using three amplified (you are required to feed your system setup into an amplified setup) speakers hooked up to the nice separate external RCA phone receptacles that Tweety Board provides. I did a comparison of Empire. Empire uses the "boop beep" music generation and is a perfect natural for Tweety Board. In monaural mode, Empire's theme song is perfectly on key.

However, with Tweety Board and the three separate speakers, Empire never did sound on key. I really can't figure that out.

Let me balance things out a bit, though. Joust is fantastic. Be prepared for chills and raised hair when that mean bird appears (you know what I mean)!

See what I mean? It's an interesting hack and will remain that way until programmers organize the sound channels in their writes. This was identical to Mockingboard's situation.

Okay, fine. But we've a problem here.

Note the following quote from Tweety Board's manual. "You may find that some digitized voices may not be as clear as you like. This is due to the design considerations of the programmers who expected the three channels to be combined into one and to be transmitted through to the ST's monitor speaker. When it becomes separated and amplified, the sounds used to make the voice may sound strange."

No joke!

Have you noticed that nearly all the better ST games are making use of digitized sounds? Uh oh.

Digitized sounds not only sound strange on Tweety Board, but they are just flat objectionable. White noise whushing (whushing???) masks out anything that may be passing through.

Okay. That's it.

In a nutshell, as long as your sounds are the "boop beep" sounds, then Tweety Board has promise. More advanced sounds just don't work. Perhaps this can be rectified by programmers, but I'm not sure.

How about the physical aspects of Tweety Board?

Well, it is indeed a solderless installation. A long ribbon cable feeds from Tweety's circuit board to a connector with long pins. The pins are thin in diamater so that shorts won't occur if you slip during installation. The connector has adhesive tape on it.

The manual has a section for *each* ST. That is great. Instructions are clear and illustrated. You are carefully guided on how to install Tweety Board. If you follow the instructions and examine your work, then you won't have any difficulty. What happens is that the connector is piggybacked on top

of the Yamaha sound chip. The adhesive prevents the already snug connector from sliding. The thin pins snug up against the pins of the sound chip. Clear? If you mess up on your installation and are unaware of the error, the pins are, fortunately, too thin to short the Yamaha's pins.

I have an objection to this type of installation, but Tweety Board does, too. (We STers have to live with this stuff until we can get a daughter box with slots for accessories such as this), the excellent manual says "...you can solder tack solder [sic] pin 1 and pin 40 of the connector to the sound chip if you wish."

The problem with that explanation is that the neophyte won't know where pins 1 and 40 are. But then, I'd think that a neophyte wouldn't be putting his fingers on the ST's motherboard. At least he'd better not touch mine!

Another objection which I have is that the ribbon cable used to connect Tweety Board and the connector is overly long, at least for the Mega. There is just too much folding of cable to get everything to gracefully fit. Obviously, the long cable is so that the user can install Tweety Board in any ST.

What about problems experienced?

Well, I'm not sure if Tweety Board is pulling my system (Mega 2) down or not, but my ST acts "differently." This is one of those things which you can't isolate. Something is just not right. The screen refreshes differently, and I seem to get a few more of the infamous "two bombers" than usual.

To cap that off, Flight Simulator will not run for more than two minutes in either RGB or monochrome mode. The sound remains, but FSII just flat stops working. Cold booting the ST doesn't solve the problem.

To isolate things even further, removing Tweety board removes Flight Simulator's problem. Reinstalling Tweety Board causes the problem to reappear.

Either my Tweety Board is a little flaky or my Yamaha sound chip is. At any rate, FSII and Tweety don't get along. Birds of different feathers, eh?

Let's sum thing up:

1. The manual is a model for installation of this type. It is clear and illustrated. It is comfortable to read and a pleasant guide.

2. As designed, Tweety Board does an excellent job on separating the ST's three audio channels. Although called stereo, there is no ambient audio. Neither is there ambient audio for the Amiga, but those guys claim that their box produces stereo. I don't think non-ambient audio is stereo. Dual sound, yes -- but not stereo.

3. Unless a programmer writes in a disciplined way to the channels, then Tweety Board will always be off.

4. Tweety Board is not accepting the current method of digitized sounds.

5. It is causing a strange choke, that shows up in infrequent two-bombers and an unflyable Flight Simulator, on my system. This may be in my system or in Tweety Board.

6. Finally, Tweety Board will never fly if they don't contract with some programmers who are currently writing games. Mockingboard was not marketable until they were able to advertise five or six games which supported Mockingboard. If Tweety Board were to list games that supported it, then STers would be clamoring for the product. The price is certainly right.

Michtron/GFA:
What's the *Real* Story?

Oh, to have been a pair of bugs on the walls of Michtron and GFA Systemtechnik these last few months! We peons will probably never know the whole story, but this is what we do know:

In July, GFA informed Michtron that they would distribute GFA BASIC and related products from GFA USA, thus taking away from Michtron arguably its most profitable product.

In September, Michtron & GFA reached an agreement that would make Gordon Monnier (president of Michtron) CEO of GFA USA and Ron Washburn of Michtron president of the new distributorship. Later in September, Michtron agreed to distribute HiSoft BASIC for the British company of the same name; Michtron had previously cited their agreement with GFA when turning down HiSoft's requests to carry their products. GFA then said if Michtron supported HiSoft, the GFA USA agreement was off. Michtron called GFA's bluff.

As of January 1, 1989, Michtron was not allowed to sell any GFA-related products, although they said they will try to provide online tech support for those who have already bought from them.

STart magazine carried GFA BASIC 2.0 in a recent issue, and rumors have it they may be the new North American distributors for the popular BASIC. Many are questioning whether releasing GFA BASIC 2.0 to STart was a vindictive move on the part of Michtron. We don't pretend to know. But we'd like to!

Everything You Always Wanted to Know About Floppies

A tutorial by Ted Jensen

So you've just spent 400 bucks for that super piece of software, made your backup and are working away with your working copy. Suddenly, while you are working with a relatively unimportant utility program on another disk, your disk goes bad. This is not a major problem. You have a backup somehwere, but it gets you to think about your backups of commercial programs. What happens if they go bad? Should you have made them on some type of premium diskette to guard against that? You scour through catalogs and ads in magazines. There are sources galore for diskettes at all prices, and some of them even have specifications. You run into one spec called "Clipping Level"; the supplier claims that because his disks have been tested to a higher clipping level they are superior. Should you pay a premium for disks with superior specifications? Will your backups be less likely to fail if you use premium disks? These are difficult questions to answer.

Perhaps an explanation of some of the tests run on disks and what can happen to your backup with time would help you make that decision. You may be interested in considering the tradeoffs of using higher priced disks. As an engineer with years of experience in magnetic recording I had never heard of the term "clipping level" until it came up in a discussion. In fact, I had never seen a specification sheet in any box or bag of disks I have purchased. However, I did spend a couple of years on a design team for a Winchester drive for personal computers and one of my tasks was the specification and testing of the disks used in those drives.

Clipping Level

Since magnetic media is pretty much the same whether it is tape, diskettes, or hard disks (the major difference being that the material to which the magnetic particles are bonded is mylar for tape and diskettes, and aluminum for the hard disks), it wasn't difficult for me to guess at what was meant by "clipping level." It is unfortunate that these words are used to describe a test performed on diskettes, since they have a different and more widely understood meaning throughout the general electronics industry. In any case, we will have to accept these words since they are the ones used in the advertisement. In simple terms, your drive uses a "head" to read the information on the disk. You can think of this as being like the needle and pick-up on your phonograph. The head reads the magnetic information previously written on your disk and converts it into an electric signal. This signal is further processed and eventually takes on a form suitable for transmission to your computer as bits, or bytes, which represent the data.

Signal variation

The size and shape of the electrical signal developed by the head varies for many reasons. First, it varies as a result of the information written on the disk, and this variation itself represents that information. However, there are other variations which take place due to imperfections in the head or the disk and the mechnical characteristics of the drive. These variations, if large enough, will lead to the electronics in the drive not being able to correctly decode the information, and your computer cannot read the disk. It is, therefore, important to keep these variations (those not part of the data) at a minimum.

Coating thickness

Magnetic diskettes or tapes are manufactured by bonding magnetic particles to a flexible mylar backing material. Characteristics which affect the performance of the final product include, but are not limited to, the size of the particles, the thickness of the coating, and most important to the subject of "clipping level," the uniformity of the coating. If a tiny part of the disk, the size of a pinhole, does not get coated, the signal level recoverable from that spot is reduced. The level of the signal will be fairly uniform until that "pinhole" passes under the head, at which point it will drop. These are referred to as "drop-outs" in the industry. Furthermore, if the coating thickness varies over the surface of the disk, the amplitude of the signal can vary in a relatively smooth manner as the disk rotates. This is generally not a serious problem, however. Your drive can recover the data by separating these disk related variations from the variations in signal due to the real data, provided that disk related variations are not too large. Typically, a drive might be able to successfully ignore disk related variations which did not reduce the amplitude of the real signal to less than 30% of the normal output. This number also depends on a wide variety of factors, and varies from drive to drive, even the same model from the same manufacturer. Thus, anything one could do to assure that the level of these disk-related variations are held within a specified range should reduce the probability of errors. The key word is *probability*, "and more will be said about this later.

Therefore, a disk which is tested to a "clipping level" of 60% is tested to assure that the variations due to the disk are small enough that the signal never drops below 60%. That is, variations are held to a range between 60% and 100%. It follows that the higher the "clipping level," the less variation in signal output and the reduced probability of a disk error.

Now comes the tough part. How much extra money should you pay for a disk tested to a 60% level as compared to one tested to a 40% level? Would you pay 50% more? Twice as much? Ten times as much? The way I look at it is this: there is a high probability that if I buy 25 or 50 Brand X disks and they all work, whatever tests were run on them were probably sufficient to assure me that Brand X disks will always work. I have no way of knowing what "clipping level" disks destined for my drives should be tested at, nor, do I believe, do the manufacturers of floppy disks.

Bottom line: $$$

Assume I buy 100 disks from each of two sources, SuperDisk and CheapDisk. Assume I pay 40 cents each for the CheapDisks and $2 each for the SuperDisks. Out of all the disks I bought, one SuperDisk won't format and ten CheapDisks won't format. I have ended up paying slightly over $2/disk for the good SuperDisks and about 45 cents each for the good CheapDisks. I still think I got a better buy on the CheapDisks.

Now, what about disk failures in the future? That is, as I use these 90 CheapDisks, are they more likely to fail in the future than the 99 SuperDisks? Well, some would argue with me that in fact they would. But I really don't believe it. Why? The first few times I use any disk, its performance will improve. The surface of the disk is left slightly rough (not on purpose)

during the manufacturing process and this process prevents good contact between the head and the disk. This poor contact degrades performance on the disk. As the disk is used, the head knocks off some particles of the coating, smoothing the surface and improving the contact area and the performance. In tape recording, in critical applications, new tape is never used without running it through a machine at least once and sometimes several times, for this reason. So, after I have used my CheapDisks several times, I feel more comfortable with them than when they were brand new.

How long will they last?

Finally, what about the really long term? Will CheapDisks retain the information stored on them equally as well as SuperDisks, say over a period of 100 years? Well, here we are dealing with a real unknown. There are no disks around that are a hundred years old. Magnetic recording using media of the type used in disks is only about 40 years old. Archival data that has been around for long periods of time has turned out to be a problem in a number of fields. Ask a librarian about the problems facing the Library of Congress protecting many of its books. There has been some experience with magnetic recording in general that may be of some interest. In tape, such as your audio or video cassettes, or computer tape as used on large mainframes, there is a problem with long term storage known as :"print through." The magnetic pattern on the tape representing the information emanates a magnetic field, just as the North and South Poles do. This field is very minute, but still present, and any material susceptible to being magnetized will do so in the presence of a magnetic field. This is true for very weak fields if the material is held still within the field for long periods of time. All tape is susceptible to being magnetized; that is its prime purpose in life. When wound on a reel, each section of tape is tightly pressed against another one, and it all emanates a field. If the tape is left untouched in this form for several years, a little of the information recorded on each section is transferred to mix with the information on the adjacent section. In audio tapes, one can hear this as a low level background of the same music that played either a few seconds earlier or will play a few seconds later, particularly where a loud passage is immediately followed by a quiet one. Normally, disks have a jacket around them that is fairly thick. Thus, it is unlikely that print through would take place between disks. On double sided disks, however, the magnetic information on one side is pretty close to that on the other side, the distance being in the same range as that previously discussed in the case of tape on a reel. If I were to make a guess at the first cause of long term failure, in the sense of not being able to recover 100% of the material from a floppy, I would guess that "print through" would be the cause.

How come so cheap?

There are a lot of reasons SuperDisks sell for more than CheapDisks. They spend more on advertising, packaging, and possibly corporate headquarters. They sell primarily to companies, which avoid buying anything by mail order from some post office box across the country. And they sell at the price they do because people are willing to pay it, whatever the reason. In fact, however, if you look into it you will find that many of the people selling the cheaper disks are buying their raw material from the same source as those selling the expensive versions. The whole thing about mass produced products, whether it is disks, drives, computers, or light bulbs, is that they are produced on a statistical basis. That is, costs are reduced to the point where the *probability* of a bad one getting to the user is acceptably low. This is simply good business. No company can stay in business if it strives for perfection in a commercial product line. Only government can afford products which have been tested to the level of a space shuttle, and as we found out even they are not perfect.

Personally, I have always bought the least expensive disks I could find. Furthermore, I buy single sided, single density disks and use them in double sided, double density drives, with no problem. On one occasion, I paid over $25.00 for a box of ten disks. It was a Sunday, I needed them, and they were the only ones I could find. One of the disks in that box proved to be the first bad disk I ever ran into!

One last comment on probabilities. If the probability of a given disk failing is one in 1,000 under whatever circumstances, the probability of two failing under the same circumstances is one in 1,000 times 1,000, or one in 1,000,000. Anyone for making two 45 cent backups instead of one $2.00 backup?

Author's Note: I have taken some liberties in the preceding article in the interests of keeping it from becoming overly technical, but I do not believe these affect the substance of the arguments for purchasing lower cost disks. Also, I was not able to find detailed information on the testing of disks in the literature, so much of the above is based on extending my experience from from tape and hard disks to disks. I would appreciate it if anyone having more information on the subject, or finding inaccuracies within the article contact me through KAY*FOG PCBBS (415)285-2687 or by mail: P.O. Box 324, Redwood City, CA 94062.

Most Wanted List

Dal-Ace Experts

Donny Arnold ..... 289-6746 ..... call before 10 p.m.
  8-bit general knowledge

Joe Camblin ..... 221-7825 ..... call from noon to 2 a.m.
  MIDI & desktop publishing

Larry Dineen ... (817)668-7296 ..... call during day.
  ST general knowledge

Eb Foerster ..... 357-7602 ..... call from 7 to 10 p.m.
  Turbo BASIC, SynFile, SynCalc, Assembly

Ron King ..... (817)283-0674 ..... call from 5 to 10 p.m.
  8-bit hardware

John Saunders ..... (817)566-0318
  C and Assembler languages

Michael Trombley 429-6134
  8-bit general knowledge

Ralph Tenny ..... 235-4035 ..... call from 7 to 10 p.m.
  ST general knowledge and hardware

Rene Tucker 223-6176
  8-bit general knowledge

Wally Wilinsky ..... 506-0352 ..... call from 6 to 10 p.m.
  MIDI

John Winer 907-1348
  Systems programming and general knowledge

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From North Dallas, take either Stemmons (I-35E) or the Dallas North Tollway south. From Stemmons, take the Oak Lawn exit, turn east, and park at the Infomart. If you are using the tollway, exit right on Wycliff, go left on Harry Hines Blvd. to Oak lawn, and turn right. From the south, take Stemmons north, then follow above directions. Infomart is the big, white, steel and glass building south of the other 'marts. GUESTS ARE WELCOME!!!

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Infomart Meeting Dates

Firm dates: February 18, March 11, April 8
Tentative dates: May 13, June 10, July 8, August 12, September 23, October 14, November 11, December 16.

Meeting Information

10:00 - 11:00 8-bit SIG
11:00 - 11:30 .... Disk Sales
11:30 - 12:00 .... Main Meeting
12:00 - 12:30 .... New users SIG
....Newsletter Exchange SIG
12:30 - 2:00 .... ST SIG

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Due to personal circumstances, you must leave a message with Angela's husband, Ray, between 7 p.m. and 7 a.m., no Fridays. She will get back to you as soon as possible.

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Dal-Ace

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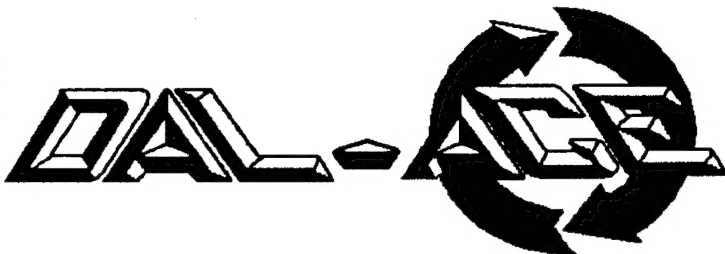
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