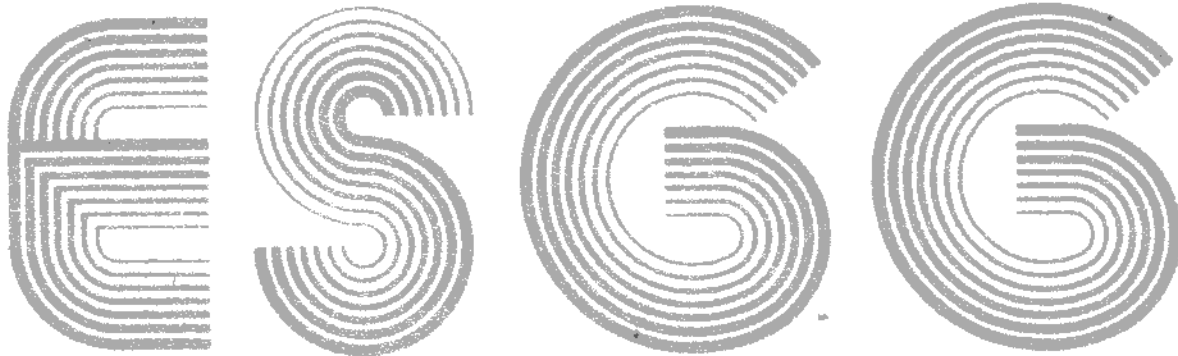


bi-monthly periodical of the Exidy Sorcerer Gebruikers Groep

a translation in English of the original Dutch version



The **L O G I C A L** partner to a Sorcerer

Subscriptions : per annum f. 27,50 (Europe)
f. 32,50 (other countries)
(more information: page 2)

Send your copy to : redaktie ESGG
p/a postbus 510
1000 AM AMSTERDAM Holland

Coordinator foreign relations: C. Boone
Stationsplein 26
B-9100 LOKEREN Belgium

CONTENTS OF THIS ISSUE

ESGG-information and service	page 2
Info	3
From other magazines	5
Computer risks	5
Input	7
Graphics on Star printer	9
Turbo Pascal	11
Arrington's Graphics Package	14
Broom	15
Tips for CP/M users	16
ESGG-disk volumes	17
Two mini tips	18

EDITORIAL STAFF.

chief editor : Welmoed J. Jonker.
 ass. chief editor : Theo Muijgen.
 software-editor : Kees van Duijvenbode.
 general editor : Don Siahaya.

SUBSCRIPTION.

You become a subscriber when transferring the fee due to postcheckaccount number 5368539 or bankaccount number 337107793 of ESGG at Lopik, The Netherlands. Transfer by postal money order also is allowed. Payments other than the afore mentioned will be refused! Refer to 'subscription periodical'. Subscriptions run from June 1st of the current volume.

SUBSCRIPTION-ADMINISTRATION.

Send your change of address and complaints about the delivery to:
 Administratie ESGG periodiek
 Prins Hendrikstraat 3d
 3071 LG ROTTERDAM Netherlands

ADVERTISEMENTS.

macro's: exclusively for business:
 acquisition: H. Herstel
 Mauritssingel 29
 3135 JM VLAARDINGEN.

micro's: Only open to private persons.

Size : -a line of text consists of 66 characters or spaces.
 -there is a maximum of six lines for each advertisement.

Cost : the cost per two lines of text is Dfl. 3,00.

Entering: send your advertisement to the editor before the first day of each odd month. Mention also the total of 66 character lines and your account nr.

Payment : Remit the amount due to postal check account number 5368539 of ESGG at Lopik, referring to 'micro's'.

If your remittance is not received before the first day of an odd month insertion in that number is no longer possible!

COPYRIGHT ESGG.

Copying of articles, diagrams or parts of them from this issue is only permitted to members or subscribers for non-commercial purposes, on the condition that one refers to ESGG, and the number of the issue.

Copying by third parties (non-subscribers) is only permitted after having acquired written permission from the ESGG editor.

The editor supposes sent-in articles to be from the sender unless explicitly mentioned otherwise.

SOFTWARE COLLECTOR.

If you like to offer yourself developed so-called public domain software to your fellow members, send it on cassette to:

Cassette library: diskette library:

Wim Warring Hermine Bakker
 Vogelweide 83 Faiklanddreef 18
 3815 HE AMERSFOORT 3563 AC UTRECHT
 The Netherlands

ESGG-SERVICE.

Prices are including postal rates for second class mail all over the world. The language of explanations in the software is mainly Dutch! Because of transport risks no mail-order possible for diskettes! Advance payment and collect at Sorcerer Days possible!

Ordering : Only by transfer to postaccount number 5368539 or bankaccount 337107793 of ESGG at LOPIK, referring to: ESGG-service.

in your order state name and quantity of the desired article.

you do not receive an acknowledgement of your order.

if the article is not in stock or no longer available THEN you will be informed so!

Ordering diskettes: see restriction above. Catalog obtainable from CP/M-users group Netherlands.

Available formats are 77 tracks hard- and softsectored, 40 and 30 tracks softsectored. The last-named two formats are 2 and 3 disks respectively. We always send the mentioned quantity of diskettes to you (possibly only formatted).

Non ESGG members and non subscribers pay Dfl. 10,- extra per vol.

Guarantee: Electronic articles from ESGG are subject to guarantee for proper operation. ESGG is not liable for damage caused by incorrect installation by others than the official technicians at Sorcerer days.

Below is a list of articles available at this very moment:

name article (prices a piece!)	Sorcererdays-collect	by mail
1. Collect-cassettes with various programs (hrs. 1 t/m 20)	Dfl. 7,50	Dfl. 15,00
2. Collect-disks *) with various programs, per volume: 77 HS/SS	Dfl. 25,00	
40 SS	Dfl. 30,00	
30 SS	Dfl. 40,00	
*) see: ordering!		
3. ESGG diskettes 1 - 10	as in pt. 2	
4. Eprom Basic EXTension (version 8) with description of installation and manual		Dfl. 35,00
5. Manual Bext		Dfl. 5,00
6. Invers video print (assembled)		Dfl. 20,00
7. Lightpen ESGG		Dfl. 50,00
8. List cassette software		Dfl. 6,00

INPUT.

a column to ask questions and also to give your opinion or comment.

If you have a problem, describe it as clear as possible and send it in a post-paid envelope to the editor. Our team then will try to find a solution. We claim the right of publication for question and solution in our magazine.

INFO.

*** VERY IMPORTANT INFORMATION TO OUR FOREIGN SUBSCRIBERS!!!**

There is going to be a major change in the way you are to remit your subscription fee:

As the bank is going to charge us for cheques an amount of more than half the fee, we no longer can accept these cheques. We now offer some alternatives to you:

1. Pay by postal money order: this usually is the cheapest way. You actually pay the equivalent of the amount to remit in your country's currency plus the transfer charges.
2. Pay by bank transfer (account 337107793): the bank only take their charge and the amount you have to remit, from your account.
3. Pay by registered letter: the only way that is also not too expensive. It is possible to send registered letters from almost all countries. Check with your local post office.
4. Only for Europeans: You also may pay by Euro-cheque! Fill in and add your code number and send the cheque (also registered!, being money and as precaution) to the treasurer.

The treasurer's address is: ESGG c/o mr. C.C.G. Peeters, Herman de Man Park 41, 3411 ZN LOPIK The Netherlands. Do not forget to mention 'subscription periodical volume 4!'

We regret that due to these bank charges, cheques or money transfers other than the afore mentioned, will be returned to the sender!

- * From the afore information you may have understood that the renewal of your subscription is on hands. Next June the fourth volume starts. If you like to receive our periodical for another year: Do not forget to pay the fee in time!
- * No Sorcerer Day report this time. It is not possible to foretell future events and this very moment the Sorcerer Day is genuine future! You have been there too? No?... Too bad, for you have been missing a number of things! Next time, shall we say? September 1985!
- * Regarding the things mentioned concerning the clock in number 18: It seems a little unfair to highlight only one clock and none of the other is not it! Hans Varkevisser from Hoorn has solved the power-down problems, being a little differing from the solution by Kees van Duijvenbode. Hans announced to write about his version, but could not promise the article to be ready for this issue.
- * The designer of the original ESGG-clock, André Nettler, also has to be administered justice: The ESGG-clock, of which the design had been given to the ESGG without restrictions, did not cause trouble at first when powering-down. Only in a later stage, when testing the clock on several Sorcerers these problems occurred with a number of machines. As this happened very short before the Sorcerer Day, there was not sufficient time for trouble-shooting and recovering. Therefore the mechanically switch has been chosen as a temporarily solution. Nowadays there are a number of clock available so we do not see a necessity to release another, improved version!
- * While administering justice: there is another thing to be corrected. As the word 'printer' in the previous issue could give the impression that the multiplication of this periodical is a professional's work and thus a paid job, we point out that all activities around the release of this periodical are on 'non-profit' bases. The word 'printer' therefore actually is a bad choice! André Netteler is putting in a lot of his free time to give to you a magazine that is of good quality but, like the

other workers in the editor's team and in the board he does not get a penny! This is the kind of people the actually keep the club going!

- * Every now and then a remark is being made concerning printing using new techniques, using finer paper and enabling printing of photographs! These kind of changes however require a larger budget, that has to be donated by the readers!
We feel that it is not the quality of the material but the quality of the contents that counts! We pay a lot of attention to the quality of the printwork to assure readability. We guess you are not eager to pay a double subscription fee!
- * This is a small country's best side: Being one of the last strongholds in the Exidy Sorcerer field, we keep up producing! Did not we recently have the HCC Days and the CP/M days, now there are two new diskettes loaded with goodies. Not enough, you think?.. We also can provide you with a new cassette!
- * Somewhere in this magazine you may find a review of the new disks 7 and 8! Until the supplement of the disk-software catalogue is released, you have to use this information. If you like to have a better description of the other disks, just order for the disk-software catalogue! This catalogue is updated to volume 6!
The cassette-software catalogue, being released in both Dutch and English, is updated to cassette 19. For prices: see ESGG service.
- * The part BDGPRINT, belonging to the program set PEGEL (ledger for small business and household) by Frank van de Woestijne from Naarden, is now available. BDGPRINT takes care of printing out the budget and actual amounts. Receipts now can be registered and compared to expenditures. A number of problems are handled also in the explanation.
- * From what we might call 'our foreign reporter' Stan Podger we got word on the ISIS magazine. Stan writes this magazine to be barely alive. The editor considers a massive issue containing all articles available thus providing the equivalent of a year's volume. Thereafter he considers quitting.
In that regard, according to Stan, the Sorcerer's Apprentice is doing better. This magazine, having a new editor after being moved from Michigan to Arkansas. Apparently there were two versions at the same time! Concerning the number of subscribers involved in both ISIS and Sorcerer's Apprentice, he had no information.
- * From Daniel Say from Vancouver (Canada) we got a 'booklike' article reviewing the activities in the Sorcerer field in the entire world. We plan to insert this in the next coming issue (if the translation is ready in time!).
- * We also plan to inform you about the activities of the Van Montfort Brothers in the near future. It seems that they work hard to give the Sorcerer a hard-disk controller. Furthermore we are awaiting a memory expansion and several other items. We'll keep you informed.
- * There is a bug in the article on the parallel port switch box! If you did read this article attentively you may have noticed that the data in the diagram at page 10 the pin numbers for the signals ACKnowledge and BUSY had been exchanged. ACK has to be at pin 10 of the printer and BUSY at pin 11! Otherwise your box does not operate well.
- * While 'boarding' a hot news item: It seems that NOS (designers of Basicode; Dutch Broadcasting Foundation) is going to enter the commercial

trade with the programs delivered by its listeners! They claim copyright and even the user groups of the contributors can not insert these programs in their library anymore! The push so far as to threaten with law suit. The fact that the Basicode activities also had been sponsored by the HCC and thus by all the hobbyists does not seem to bother them. If you feel to disagree with these methods, insert your own copyright into your programs and make this known to your user group. Insert in your copyright clause at least that multiplication and distribution are not allowed without your written agreement, eventually upon terms you wish to insert!

If they take that into consideration is a second part, but as long as you have created the program yourself, you are an author in the eye of the law and thus protection against 'illegal' copying can be provided to you too. Perhaps there are lawyers within our group or within HCC that like to dig into these matters and inform us of their findings?

- * Last but not least: The bi-monthly award! Again this has been a neck and neck race, won by:

mr. M.J.H. Quaedvlieg
Jasmijnstraat 23
6543 TV Nijmegen.

We gave this award for his thorough piece of work about Tiny Pascal.

FROM OTHER MAGAZINES.

- * Databus nr. 2 : An article on adaption to alternative storage media (like cassette and memory disk) of CP/M. Also an article on writing in dynamic RAM. Tests of the packages Electric Desk and Goldengate.
- * PCM nr. 2 : A test of dBASE III. As a special entry: computer education.
- * PC World nr. 1: This magazine actually is a stray. Ending Micro/Info did land this magazine unwanted and unasked at my desk. This magazine is dedicated more to the PC (in capitals) and DOS than M/I did. In this magazine too (thematically) reviews of databases and management. An extra is an article on optical disks for storage, up to 1 GByte.

COMPUTER RISKS.

Working without problems with computers is something propheted from many a advertisement. The computer can do and solve it all! When reading all this you are getting eager to do some shopping buying yourself such a miracle machine!

But then, when starting to use it, all seems less easier than had been promised by the swift and friendly salesman. Especially when encountering problems, one cannot solve oneself, the customer friendly approach from before the sale is hardly met. At that moment you become aware whether having bought at the right shop or not!

Problems in programming and technical problems usually are solvable. The second part somewhat easier than the first one: Having still a guarantee period running they are willing to help you out. You only should not turn in too often for guarantee, for here separating chaff from wheat becomes clear! Beyond the guarantee period a technical problem is reduced to a budgetary problem: can you afford a repair or not?

If you do have problems in programming it depends somewhat on your progress in programming whether you can solve on your own or that you need someone else's assistance. As long as home-brew programs from fellow user group members are in concern this is usually a good gamble. Considering commercial software again the quality and serviceable approach of the programmer is the key.

Information is poured out over the hobbyist from all sources. One magazine after another is being issued and disappear like mayflies. That the situation needs some stabilization is obvious! Of course we also are helping in creating this mess! A good example is the issuing of our periodical as the HCC Newsletter did not serve us with sufficient publication space to have all Exidy oriented information published within reasonable time.

With each issue usually the quality of the articles and the programs published rises. That this also includes a risk will become clear to you when looking at the magazine through the eyes of an enthusiastically novice. He starts reading an article and then realizes that his knowledge is far from understanding his fellow member. How can he fill this 'lack in knowledge'?

There are several ways to get it filled.

There is the possibility to use the mailbox function of the periodical. If he is going to do so, depends more or less on the importance he feels the updating of his knowledge has. One does not show off being an ignorant. The fact that his fellow members have started the same way and so will not be reluctant sharing their knowledge, is a support.

The other way is finding out what fellow members live in your neighbourhood and then ask them if they allow you to tell about your problem. Doing so need some special attention as to the time, for it is a well-known fact that speaking about one's hobby will lead to a late, late show!

One is bound to observe that knowledge is gained in a short period of time and that one can now easily pick the bugs from a program. Furthermore one is told several tricks useful as well in tracking as in preventing errors.

Finally there is another risk, that usually has far reaching consequences: Breaking and entering with theft.

As companies due to better security methods offer less chances to burglars to gain an easy living, the 'workers of the night' have turned to working the civil houses. Breaking and entering those houses usually is, due to ignoring security and bad quality locking a simple job.

Therefore some point to pay attention to, as a precaution for your valuable possession:

1. Put your equipment in such a place that is cannot be seen from outside.
2. Use quality lock and hinges on windows and doors, especially when living in a street level house.
3. Etch a 'brand' on all of your transportable, expensive goods.
4. Do not leave doors or windows open for a single moment of visiting your neighbour. Carelessness eventually costs money!
5. See your insurance broker to find out if you are sufficiently insured against theft and whether this concerns your valuable equipment as well.

If you need professional prevention advise, see your local police. They will advise you gladly.

Wielmoed Jonker.

INPUT.

* Mr. D. Bonninga from Groningen writes:

I own a 30 track diskdrive and can use the school's hard sectored Exidy system. On that machine I develop programs that I like to transfer to my private system. I also have problems in running Standard Basic programs that include USR functions after being converted to disk.

Mr. Bonninga, due to lack of time I had no chance to send an earlier reply. Therefore I use this means in a somewhat extended way.

1. Copying of programs using systems with different formats:

It is considered well-known that no problems occur when copying a disk from a system similar to yours. This means that a disk from a 77 tracks softsectored system (5 1/4") is being accepted without problems by another 77 tracks softsectored drive. The same goes for 40 tracks systems. In both cases we started considering both systems single sided as a different setup creates problems.

Now when liking to exchange programs using systems with different formats (77 or 40 tr.) or sectoring (hard or soft) we can use an transferring program. To do so one needs two Exidy's! Transfers in this way can be arranged both through serial and parallel means.

By serial means we actually use a kind of modem program that takes care of data transmission in either 300 or 1200 Baud. As this is done bit by bit, this is a rather slow means of copying.

A better method is using a copying program that uses the parallel port. Copying in fact is then 8 times quicker! Such a program is DATACOM.COM. For both methods you need a special cable!

Dragging a system from one place to another is quite a job, so if copying is needed the next method is a suitable one. It is required that the cassette interface of both systems work correctly. We use now an intermediate solution by recording programs to be transferred on cassette first. A cassette can be transported easier.

What do we do?

Using either SID or DDT we first load the program in memory. SID reports having loaded the program and states below NEXT the first free address in memory. The two leftmost values indicate the number of pages to be saved afterwards: note these figures! If there is e.g. 2C00, then the number of pages to save is 43. With a cassette save procedure we do not use pages but addresses:

Programs to run under CP/M always load from adress 100, so a cassette save will respond to this structure: SA PROGR 100 2BFF (the first free address was 2C00, wasn't it?).

Now loading using the other system:

First boot CP/M. Then double RESET to monitor and in monitor load the program LO PROGR. Upon finishing the loading procedure you return to CP/M by typing GO 0 or CTRL X (when having a Van Montfort monitor 1.3 with bootstraploader). In CP/M upon prompting, you type (assuming the program to be saved to drive A:); A)save 43 PROGR.TYP (43 is the number of pages to be saved; typ is the filetype of the program: if this had been a .COM file, then the type is to be .COM again!). You now have converted the program to another system, ready for RUN.

2. USR functions in EXBASIC.

In Standard Basic USR functions can be inserted in the program itself. This is not possible due to the way CP/M divides the memory. When you like an EXBASIC program and a machine language program to run under CP/M, you need to reserve space upon starting EXBASIC. This is done in the CP/M load instruction for EXBASIC giving an extension that indicates the part of memory to be reserved:

A)EXBASICIM:MEMTOP (MEMTOP is the size of memory EXBASIC is allowed to

use). The area above MEMTOP can be used by the machine language program (or part).

This usually means a rewrite for Standard Basic programs to adapt them to this use.

Good luck!

* Mr. T.J. Vermeulen from Geleen:

I like to purchase a diskdrive. The problem is that I do not know where to buy a controller card for the Sorcerer, or how to get diagrams for a home making of a controller.

Mr. Vermeulen, when you did write this letter you had not received the February issue of our periodical. Therefore I feel your first question to be solved by now. If not, see the advertisement pages!

You also talk about building a controller yourself. I do not know whether you are experienced in electronics. I know that you at least need a lot of building experience as well as a good knowledge of electronics in order to end such an undertaking well. Parts for this can be obtained from several shops but diagrams are not available in the same way. There always remains the fact that your home-made controller can refuse to work with Exidy software acceptably. If not you got yourself a working system that is not Exidy compatible and so software exchange is not possible in the usual way!

* Ronald Maaskant from Muiden also has a problem:

I obtained some copies of CP/M program disks from ESGG. The disks in concern are 913, 916 and 917. I guess something got wrong while transferring programs as I have found some graphic characters in .DOC files. I also can not get the music files going. Are there other users that have alike experiences?

The complaints have been viewed globally and it seemed that probably the mother disk of 917 had been fouled up. As soon as the CP/M ug had sent a new copy, you will receive a new item, I have been told by our secretary. Concerning the musci files we have to wait for reply from our members!

* Mr. W.C. Heydra from Hoensbroek:

I now possess a serial printer (RS232, 300 Baud) and tried to get it running. Even when typing the monitor command SE D=S no signals occur at the RS232 outputport. Calling the port from Basic at address E012 has no result. Do you know a solution?

Yes, mr. Heydra, from your information I learned that you still have monitor version 1.0. In this version the RS232 port is not called in a correct way due to system software errors. When installing the 1.3 monitor from Van Montfort the port should work as intended! This monitor also corrects some other errors giving you a more suitable system.

* Mr. Jan Wierts from Wilnis drops the next info:

Although the way ESGG copies and distributes its diskettes is worth a compliment I regard my last purchase to be unsuccessful. I recently have a Viewdata connection and was eager to get on with the modem program from the CP/M library (1136). However after booting nothing happened! From an article by ESGG in HCCN 67 I learned about a special Exidy modem program, being an adapted version from the other program. I like to know whether this program is the same I have, or a variant?

The program EXMODEM, being on ES66 disk 6, is a version of the program MODEM9, adapted to the Sorcerer by Hans Varkevisser. Hermine Bakker got her 'first' with Hans using this program and had been wild about it. I therefore think your problems solved when have received ES66 disk 6.

GRAPHICS ON STAR PRINTER.

Mr. P.A.R. de Jonge from Delft has adapted the problem of Theo Bartlett of Silverton (ES66 number 16). If Theo can use his solution, we do not know; here is mr. de Jonge's answer.

In reply to the question of mr. T. Bartlett about printing of Exidy graphics on a Star printer, I can mention following on the way I solved this problem for my Star printer. I have to point to the fact that I own a Star DP510 printer that may slightly differ from the Gemini-10X.

The entire operation includes:

1. A hardware modification inside the Sorcerer.
2. A change in the monitor of the Sorcerer.
3. Adaption of the printer cable.
4. Changing position of a DIP switch inside the Star printer.
5. A change in one of the EPROMS of the Star printer.

In this way it is possible to use the regular Centronics routine, switches then are not needed.

I explain:

ad. 1.

This (and for a part the next) modification has been described before by mr. R.E. Trompert in the HCC Newsletter number 40, page 12.

In short this turns to soldering a wire inside the Sorcerer between IC 6D pin 12 and pin 14 of the parallel connector. In this way the Strobe signal is offered to pin 14 and the 8th databit at pin 4.

ad. 2.

The Centronics driver is at addresses E993 to E9B0 in ROM (or EPROM) number II. The part of this program activating the Strobe signal may be removed by ENTERing "00" at addresses E9A3 to E9AC included. Of course one need to exchange a ROM for an EPROM eventually!

As the printer uses the ASCII codes 128 to 159 for control functions (the same functions as codes 0 to 31), whereas the Exidy graphic codes start at ASCII 128, one need to ENTER a jump in the Centronics routine enabling conversion of ASCII codes 128 and up to 160 and up (where the special characters of the Star printer are placed). This can be solved simply by inserting an extra routine at addresses E9A3 and on. The entire now looks like this:

E993	CBFOE9	CALL E9F0
E996	F5	PUSH AF
E997	FE0A	CP 0A
E999	2810	JR Z,E9AB
E99B	F5	PUSH AF
E99C	DBFF	IN A,(FF)
E99E	CB7F	BIT 7,A
E9A0	20FA	JR NZ,E99C
E9A2	F1	POP AF
E9A3	CB7F	BIT 7,A
E9A5	2802	JR Z,E9A9

```

E9A7      C620      ADD A,20
E9A9      D3FF      OUT (FF),A
E9AB      F1        POP AF
E9AC      C9        RET
E9AD      00        NOP
E9AE      00        NOP
E9AF      00        NOP
E9B0      00        NOP
    
```

ad 3.
 In the printer cable a new lead has to be used for the new Strobe signal. This lead goes from pin 14 of the parallel port of the Sorcerer to pin 1 of the Centronics connector of the Star. The lead that previously had been connected to pin 1 of this connector now has to be connected to pin 9 for the 8th databit.

ad 4.
 Dip switch number 3 at the back of the Star has to be set to position "interface set to 8 bits".

ad 5.
 Take the top of the printer off and find an EPROM type 2732 on the print, being marked with a golden sticker bearing EC C1 on it. In this EPROM the character set has been programmed (most of it anyway, starting from capital "T").

Starting from address 0 the "memory map" is as follows:
 0000 to 0188 included : regular character set from capital "T".
 0189 to 03C8 included : special characters (64).
 03C9 to 0488 included : graphics (32).
 0489 to 07DF included : italics.
 07E0 to 0AB4 included : international characters.
 0Ab5 to 0FFF included : ? ? ?.

With the use of an EPROM programmer you now may program the Sorcerer graphics in the special character area, thus giving you the ability of printing these graphics without problems.

For example:

ASCII code 160 of the printer is the same as character " ".

The data pattern looks like this:

```

address: 189 18A 18B 18C 18D 18E 18F 190 191
data : 20 00 20 00 20 00 10 08 06
    
```

The character is thus shaped:

```

0 0 0 0 0 0 0 0 0 = control bit = "0" or "1" (decenders)
0 0 0 0 0 0 0 0 1 )
0 0 0 0 0 0 0 0 1 ) control bits for print head.
0 0 0 0 0 0 0 1 0 ) "0"= this pin inactive.
0 0 0 0 0 0 1 0 0 ) "1"= this pin is active.
1 0 1 0 1 0 0 0 0 )
0 0 0 0 0 0 0 0 0 )
0 0 0 0 0 0 0 0 0
    
```

(20 00 20 00 20 00 10 08 06)

Change this for the Exidy graphic with ASCII code 28, (a vertical bar in the lefthand side of the field) as follows:

```

address: 189 18A 18B 18C 18D 18E 18F 190 191
data : FE 00 00 00 00 00 00 00 00
    
```

This pattern now is used to change all 63 remaining graphics of the Sorce-

rer.

It would consume too much of the magazine's space to give a complete listing of all graphics. If necessary I will send a copy of it to interested parties.

Some remarks:

1. The print head has 9 pins. Only 7 of them are activated together. Usually these are the top 7 pins. The other bottom pins only are activated if the control bit is "1". Then descenders are printed. The two topmost pins then are inactive.
2. A character is shaped using 9 bytes. A pin however can not be fired twice directly after another. In the columns (see above) there can not be two times a "1" next to each other in the horizontal line. There has to be a "0" in between otherwise strange things may occur!
3. The graphics as being standard programmed in the printer from address 3C9 are not within a 9 x 9 matrix, but within a 6 x 6 matrix. These graphics still can be used after having completed the modification. Now they only can be called using Sorcerer's ASCII codes 192 to 223 included, instead of codes 224 to 255 included as had been before.
4. Use this opportunity to clean the somewhat sloppy programmed "dropped" "j".

This is the prescription:

address: 0C3 0C4 0C5 0C6 0C7 0C8 0C9 0CA 0CB

data : 01 81 01 81 09 81 7b 01 01, change into:
81 01 81 01 43 00 FA 00 00

Good luck!!

TURBO PASCAL (CP/M-Z80 version).

Fred Knottenbelt uses Turbo-Pascal and has used his experience to write about it in an extensive article. This article also had been inserted in CP/M users group's Software Bus. As there is a chance not all ESGG-members do receive this magazine, we are now printing this article in ESGG.

A lot among you probably already have heard about the existence of TURBO Pascal. It is a combination of a compiler and a screen-editor and the price is so fair that this system is within the reach of an interested hobbyist. The reviews look good. Interested parties may be referred to Byte of July 1984 and Microsystems of February 1984.

Below you find my experiences with the 8 bit CP/M version on Exidy Sorcerer with 56K of RAM (softsectored CP/M). The system also can operate with 48K of RAM but then the text can not be too extensive (only 7K).

On the disk there are a number of files. Besides the compiler and an error message file for it, one finds a program lister with which programs can be listed on the printer. For the Exidy Sorcerer (operating with memory mapped video) one needs a terminal driver giving the Exidy the capability of a terminal. The compiler can be used without this driver but this does not go for the editor as this program uses a.o. the cursor controls.

The editor is based on Wordstar and uses a subset of the commands of that program. This means that through a large amount of control codes several actions can be obtained. Besides this (to one's liking) the editor is do-

ing well. The first line is the status line in which all information like line and column number of the cursor, an indication about the auto-indent function being on and whether insertion or overwriting has been chosen. Auto-indent indicates that upon a CR the cursor is put below the first character on the next line, being a clever item for Pascal programs that do use indent functions extensively. TABs are operating dynamically that is, the position is depending on the first character of successive words on the previous line. One may define blocks, move, copy or delete them. One may delete a line or just a part of it and in some cases one may retrieve the deleted line (regret function). Parts of a program can be sent to disk or read from disk (up to the position of the cursor). One can step in pages advancing or backwards, or go directly to the start of the text, strings can be searched for and eventually replaced by some other string and so on. The entire system is user friendly to the extreme (after having acquired some experience!).

There is a program for the Sorcerer that has besides a terminal driver, also a keypad driver with which the edit commands can be entered in a Spellbinder/Wordprocessor like manner through command keys. This way I like better than the Wordstar version (being a habit!).

Having completed a program entering and leaving the editor one can have the program compiled. The text remains in memory. Translation is done to machine language so no virtual processor (like p-code) is being used. If an error is detected one has to return to editor level (by hitting ESC) and the cursor now is placed on the spot where the error had been detected. In many a case the compiler is suggesting to you what could be done, like ';' expected'. It is a fact that then a ';' had been left out (far back sometimes!). The system enables easily going to and from editor and compiler without diskaccess thus giving a quicker handling. The error messages are clear, however they are in English. Even there one can make changes: the message file being loaded separately upon booting, can be translated into Dutch! The manual explains clearly how this could be achieved. This manual of 260 pages in pocket size (also being in English and troublesome to be translated) is also of a superior quality. It has several program examples and the dull regulations are explained clearly. The manual however is no Pascal tutorial.

If a compilation has been successful one may give the command to run (advised to save the text to disk first!). Even now the text remains in memory. If during execution of the program a runtime error occurs one is returned to the editor and the cursor is being set to the error position. This all is being done in a remarkable speed. I never have experienced a compiler doing its work so quick on a 2 MHz Z80 system and still being so small (approx. 30 K) and releasing a code so compact.

Of course the size of the program is limited as, besides the program code there also is the text, the editor and of course CP/M resident in memory. Here too they have found a way: one may compile a program into a disk COM-file thus not having to leave the code in memory during compilation. This COM file consists of a fixed part that contains the Pascal library; above it the code and some free space (for a.o. the heap), the stack and the data area are set. The data area grows down while compiling from BDOS-1K. If one likes to run the program afterwards on a smaller system one may enter the highest usable address.

Upon starting this program one does not need text and compiler in memory thus leaving the entire memory to the program. If even this is not sufficient there is a Chain option possible.

Of course the size of the text file is limited as both compiler and editor are in memory. One may work with include files allowing text files to be fetched from disk during compilation. Text files do not have to reside in

memory.

The Pascal version is rather compatible with the standard. Some limits have been entered, these however are also in some other systems. There are numerous extensions like a number of string functions, a random function, disk functions (even BDOS and BIOS procedures and functions), too much to be mentioned all. Many of these extensions are also available in other Pascal version, being implemented in different ways (good bye to transferability).

It is regretted that no other starting address than 100H can be selected. This signifies that programs to work in ROM addresses can not be created (the code is not ROMable).

There also is another objection: it is not possible to create a library of compiled standard routines as the compiler creates COM files and no REL file (the compiler is absolute, not relocatable). This however is keeping you from the awkward and slow method of linking, where libraries are being searched for the necessary routines.

One however may create a library-disk on which a number of often used procedures and functions are stored as source files. One may then call a procedure or function through the include option into a program. A kind of library in source style.

There are a number of facts I like to mention briefly.

The format of Pascal files (these are with this Pascal always externally), differs from e.g. Pascal MT+ and Pascal/Z: the file is being preceded by two bytes mentioning the number of records and two bytes stating each records length (exception: text files). This means that one cannot read with typed-files a COM file from disk (text files can be read): the system can not carry out a reset on the file if the necessary information is missing. There is however an alternative (often used) of untyped files, where one has to use the (non-standard) included Blockread procedure.

Furthermore there is a difference in the way the Read procedure operates. One can choose through a compiler switch, between two options. One is like the standard but does not allow editing. That is, if one types a error in entering data, these errors can not be rectified. In my opinion this option is not useful, except in special cases. The other (default) option allows editing but needs a final return for each entry. That is, when entering two characters through the read statements read(c1); read(c2) one has to give a return upon each character. One may enter the two characters through the statement read(c1, c2). The same goes when entering numbers: when one is using read(i1); read(i2) and both numbers are being entered separated by a space followed by CR, only the first number of the line is accepted. It is possible to enter the first number, give a return and then enter the next number (this number is on the same screen line, not separated by a space!). Using read(i1, i2) both of the numbers are accepted.

The Teleac (Television Academy-ed.) student now is confronted with some problems as the examples given are not working as meant in the text, being somewhat discouraging. With this warning you now can use Turbo Pascal as a good exerciser (being the only way to learn a language!).

When in the mode mentioned before is asked for input and one answers by a simple return this is accepted and the variable keeps its original value. This is very convenient but when a variable has no value at all it can take all values as Turbo Pascal does not initialize variables. One may call this sloppy: if being asked for a value, 'no value' should not be accepted!

In the program there are several checks when activated. Many of them are default set OFF. I advise to enter for testing purposes a first line like this: (\$R+,U+,A-). By this range checking is activated for assigning value to variables (also for index values of arrays), it also is possible to

stop execution by CTRL-C and recursive programs are possible. Do mind that when calculating with integer numbers overflow is not reported! $10 \times 30000 \div 20$ give a different result than expected as overflow is caused by the multiplication.

Resuming I can say that the Turbo Pascal development system is a very convenient and friendly program and is preferable above other Pascals, using a separated compiler and linker phase with many disk accesses making the system slow.

The advantage of Basic interpreters (quick and easy program development) is now lifted to compiler level in a better structured language.

ARRINGTON'S GRAPHICS PACKAGE.

Mr. B. Geraads from Kessel did some polishing on the original product of Howard Arrington, making it easier relocatable. He says:

After admiring the demonstration-graphics the moment is there that you like to use the possibilities the program offers, in your own programs. But the ML-routine unfortunately starts at 3300H, a rather unhappy spot for some applications.

By the use of the mover program you can relocate the routine to the desired memory place.

I left out the first part of the program (dealing with the passing of the parameters) in order to avoid too much difficulties. The parameters are coming in a fixed buffer-space behind the routine, where the program gets and puts data.

Relocating the program.

```

100 B=13182                      :REM original startaddr. of the program.
105 DEF FNA(OF)=(OF AND 15)-9*(OF>64)
110 INPUT "New address (H) ";OF$:REM input new address, change into dec.
115 OF=0: FOR J=1 TO LEN(OF$)
120 OF=OF*16+FNA(ASC(MID$(OF$,J))): NEXT J
125 OF=OF-B                      :REM calculate offset
130 HI=INT(OF/256): LO=OF-HI*256:REM calculate high and low order offset
135 FOR A=0 TO 762                :REM calculate program length.
140 TR=PEEK(A+B)                 :REM get byte
145 NA=A+B+OF: IF NA>32676 THEN NA=NA-65536:REM calculate new address
150 IF A=13 THEN GOTO 160        :REM correction LD(HL),00=36
155 IF TR=52 OR TR=53 OR TR=54 THEN GOSUB 200:REM absolute address
160 POKE NA,TR                  :REM move byte
165 NEXT A
170 PRINT "Ready":END
200 TB=PEEK(A+B-1)              :REM take low order byte absolute address
205 TR=TR+HI:TB=TB+LO           :REM change high and low order
210 IF TB>256 THEN TR=TR+1: TB=TB-256
215 AD=NA-1                     :REM destination low order
220 POKE AD,TB
225 RETURN

```

For use with EXBASIC.

```

REM DEF functions.
REM ORIG.=original address (337EH): OF=offset to new address.
DEF USR0=ORIG.+OF+0             :REM initialise graphics
DEF USR1=ORIG.+OF+144          :REM PLOT/0=move without PLOT/1=WIS/3=PLOT

```

```

DEF USR2=ORIG.+OF+562      :REM get screen from memory
DEF USR3=ORIG.+OF+574      :REM put screen in memory
DEF USR4=ORIG.+OF+587      :REM screen-pixel down
DEF USR5=ORIG.+OF+610      :REM screen-pixel up
DEF USR6=ORIG.+OF+626      :REM screen-pixel left
DEF USR7=ORIG.+OF+659      :REM screen-pixel right
DEF USR8=ORIG.+OF+699      :REM invert screen
DEF USR9=ORIG.+OF+723      :REM logic OR screen
:
REM initialize graphics
REM SH=screen high; SL=screen low; PM=plot mode
X=0: Y=0: SH=240: SL=128: PM=0: GOSUB SUBROUTINE: A=USR0(A)
:
REM PLOT
REM PM=PLOTMODUS 0=move without plot 1=erase 3=plot
X=20: Y=20: PM=3: GOSUB SUBROUTINE: A=USR1(A)
:
REM screen to memory; LO AND HO form the destination-address of the screen
SH=HO: SL=LO: GOSUB SUBROUTINE: A=USR3(A)
:
:
REM Subroutine puts data in buffer
REM BU=BUFFER=ORIG.+OF+522
REM PM=PLOTMODUS
POKE BU,X: POKE BU+2,Y: POKE BU+4,PM: POKE BU+6,SL: POKE BU+7,SH
RETURN

```

For use with Rompack Basic.

Basically the use of the routine with Rompack Basic is the same as with EXBASIC, but defining the USR-funktions is not so easy. The address of the part used for the routine has to be POKEd in the well-known addresses.

Example: PLOTTING.

```

:
REM SH=INT((ORIG.+OF+144)/256): SL=ORIG.+OF+144-SH*256
Z=20: Y=20: PM=3: POKE 260,SL: POKE 261,SH: GOSUB SUBROUTINE: A=USR(A)

```

BROOM.

After the series of articles about Basicode-files to Wordprocessor, and back; Mr. T. Huisman from 's Gravenhage handed us an article for cleaning-up Sorcerer's memory. Handy!

Our chairman Floor Vogelaar made the excellent program WPFREADER, in order to put a WPF-file from cassette directly on screen. The results of it may have undoubtedly passed your eyes, were it only in the shape of the index files that tell us whatever is on our ESGG program tapes.

But there is a minor disadvantage too: PP does not work anymore and you need to do a double-reset in order to get the ROM-pack to work again!

In order to get such a WPF-F text under control of the wordprocessor again I peeked into the memory with the monitor command DU. The actual text now starts at location 019AH and is preceded by '00' in address 199H. The end-of-text (03H) also can be found this way, but it will do to find the by the regular pattern of the empty memory the place where the text certainly is ended.

With EN you can put the required 02H before the text and MOVE can move the lot to the wordprocessor's file startaddress 080EH. But this however is

not sufficient! The remainder of the WPF-files are still there, corrupting the whole thing. You can do nothing else but rase part of the memory preceeding the file.

In order to make your "broom" go, go upon a cold start with the WP ROM-pack inserted, to the monitor, and create the following tape-file:

```
SA BROOM 100 7FF 1
```

For disk-use, it is handy to insert a warm-start to the WP-pack with:

```
EN 100: C3 03 C0 /.
```

Put the 'broom' on disk with `SAVE 7 WPFBROOM.COM.`

Once you have done so and you have loaded and inspected a WPF-F file (with the pack inserted (command X and LOG!) and the screen shows the monitor prompt, this is your recipe:

```
EN 199: 02 /
```

DU 100 (too large): RUN/STOP; returns the (too large) address, being certainly beyond the end of the file.

MO 199 (enough) : 080E puts file to the proper start-address for WP-files.

To clean up the memory, load the 'broom'; for tape-users with LO BROOM, for disk-users (after booting up) with WPFBROOM. In the first case with PP to the wordprocessor, and you have a genuine wordprocessor-file again!

TIPS FOR CP/M USERS.

Again a hint from mr. Theo Bartlett from Silverton (RSA), which trick he learned after having had some really terrible experiences.

You are saving data on disk and suddenly the disk is full so you have to change it,

OR

You have changed the disk in the disk drive for some reason then YOU MUST WARM START the system before carrying on, otherwise when trying to save you will get an error message and find yourself back in the monitor mode with the > prompt frightening you completely as you get the feeling all your work is lost!

To warm start: just type in RESET (not the reset keys!). The drive will switch on and off for a short while and you can carry on.

BUT IF YOU FORGOT TO DO THIS AND YOU END UP WITH THE > SIGNAL, ALL IS NOT LOST!!

You must now press both RESET buttons (as if you want to make a cold start). The Sorcerer will reset, but instead of typing your starting address (GO BF00 or whatever), type GO 100.

I repeat just type GO 100! The system will warm start the disk and you will be back in your program and you can now save again. 100 is the starting address for CP/M.

ESGG-DISK VOLUMES (2).

Following the review in the December issue of the this periodical I now give to you in short whatever goodies can be found in the next volumes (5 to 8).

There however is a catalogue (in Dutch) but you may like to see for yourself if any volume contains things of value to you.

Volume 5.

- Latest version of DATACOM and an update of EXDISORT.
- Well, well, a game! BACKGAMMON. With a valuable doc.
- A set to update your EXBASIC to DBLBASIC with an enlarged character set.
- A mass-copy instruction for EPSON/STAR printers.
- An UNprotect utility for EXBASIC.
- A first lead to extending Exidy's wordprocessor with DIR option, inserted DISKDRIV and a set of commands for several printers.
- An automatically telephone selector for the ESGG database program of volume 2 with some useful utilities for this database.
- SWAPCOPY, a COPY utility for systems with different formats.
- TOOL3 to extend your EXBASIC with various edit facilities.
- PGRAF, graphic print options for your EPSON printer.
- UNFORMAT, necessary to double sided disk users.
- USQ, to UNSqueeze squeezed programs, with explanation.

Volume 6.

This disk is entirely dedicated to MODEM programs. Contains EXMODEM adapted to Exidy, many a .DOC and source files. Everything derived from the MODEM9XX series from the CP/M ug library.

Volume 7.

- VIDKBD, a start for a good terminal emulator.
- TERM, a set with a terminal emulator, a testing program and a adaptation for Turbo Pascal.
- RS232, a set containing communication programs belonging to the article in ESGG periodical number 17.
- WPSAVE, an editor file can be written as .WPF file.
- various .LIB files used and usable when gathering assembler sources.
- REAKTIE.BAS, educational chemistry program.
- a set to register your cost of illness and for accounting to the insurance company.
- ONTBIND, a set to get a simple problem solved using various programming languages.
- SKY4, a simulation of the night sky.
- GETAL3, conversion program.
- GMTXT, a wordprocessor in MBASIC/EXBASIC!!
- AATYPE (and ATYPE) to view .WPF-files and so on on screen.

Volume 8.

- Database for philatelists.
- ACCORD, aid for guitar players.
- BUDGET, to control your housekeeping budget.
- REGRI, mathematical program on lineary regression.
- SCRPO, screen poke addressing.
- SKLOK, adjustable chess clock.
- ONTBWORT, a set for comparing execution time of non-compiled and compiled programs.
- SHOW, a programm like AATYPE of volume 7.

- BACKUP, for making .BAK files from .WPF files.
- CONVEDF, converter for ED files to .WPF files.
- Updating for .LIB files of volume 7.
- HISTAPRN and GELUK86, applications of PGRAF program of volume 5.
- A set for recording of students results (Lower Economical and Administrative Onderwijs (Education)).
- FORTH, adapted for Exidy.
- SPAREDISK to remove REM and SPACES from disk saved Standard Basic programs.

For a more precise explanation of all of the programs and their size: see the catalogue. This review is to indicate the contents of the disks. Not only for freaks, but also for the average computerer, with sufficient explanation to really get the hang of it.

TWO MINI-TIPS.

Hermine Bakker has some small hints for the eager investigator. If you already know them, no harm done. If you did not, use them to your advantage.

And the phone rang. What had happen? One of my friends liked to record a rather large Basicode program for an APPLE user. Reading okay, but writing to tape fouled. And then one starts trying. Indeed it went wrong here too. So it was not the computer. But what could it be then? It was a large program and the crash was almost at the end of it. Too big perhaps? It had to be that.

If you work with Standard Basic and writing to tape, the memory-space is divided in two pieces. In the first part is the program as it is in Standard Basic and in the last part the same program is in ASCII-format which is written onto tape according the Basicode-norm.

Some investigation learned me that the program was about 26K in length. But that made the ASCII-format even longer!!! The ASCII-buffer already started at the tail of the Standard Basic program (48:2=24 !!) and bumped its head against the Top of RAM. This was the reason of course for the failures.

But how to recover from this? By stating that it could not be done in Standard Basic. Then the logical step is to load the program under CP/M, haul the conversion to spaced and then write to tape, still with CP/M. Well, this was successfull!! BCREADDEX and BCWRITEX (ESGG volume 2!!) did the job for me. You better keep this in mind, you can never tell. This 'keeping in mind' brings me onto the second tip. There are so many 'mind-keepers' in our newsletter and in the others also, that no one ever can recall them when needed! I cured this quite simple (not so very computer-minded): I bought a large ring-map with an alphabet. Now I note every hint and things to remember, It only takes a minute, but can save you hours later!

DO NOT FORGET TO TRANSFER YOUR NEXT
YEAR'S SUBSCRIPTION FEE IN ORDER TO
RECEIVE YOUR COPY REGULARLY !!