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a translation in English of the original Dutch version

ESGG

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

name article (prices a piece!)	Sorcererday-collect	by mail
1. Collect-cassettes with various programs (nrs. 1 t/m 19)	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 nrs 1-6	as in pt. 2	
4. Eprom Basic EXTension (version 8) with description of installation and manual		Dfl. 35,00
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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.

* First the score in numbers of members and subscribers: 1070 members of the users group; 1054 subscribers to the Dutch and 57 to the English version of the ESGG-periodical! We actively keep going on spreading information about the possibilities of our Exidy Sorcerer.

* If you are a commercial advertiser this is of importance to you: The canvassing of commercial advertisements has gone into other hands. The new canvasser is mr. H. Herstel from Vlaardingen. More about this at page 2. The editor wishes a successful canvassing to him.

* The board has been completed now! Mr. Gerlof Donga from Amsterdam has agreed in taking a seat in the board. To be able to prepare for the task, he is going to take up various activities for the moment. In the near future he will make a choice. Gerlof, glad to have you with us.

* The ESGG has to consider her attitude towards illegal copying of commercial software at Sorcerer Days. As we did announce before, ESGG is not going to co-operate in spreading commercial software. This point of view also includes copying at events (HCC and ESGG!). An announcement accordingly is being hanged in front at all of our events.

* From the CP/M day of January 12 1985 there is going to be a new catalog about software on diskettes. In this catalog there are 6 diskettes at the moment. This catalog is available in the Dutch language only (remind the diskettes not being available for shipment abroad due to Customs problems and mail handling!).

* Solution Data Systems of Amsterdam has spread her activities. The company now owns a site at the Sarphatikade 10. The business at the Scheldestraat site mainly is for hobbyists, as the other place is for commercial business activities.

* The Sorcerer Day: At Saturday March 16, 1985 the half-yearly Sorcerer happening is breaking out at Gouda in hall 'Kunstmin', Boelekade 69. As has been mentioned before the Day this time has the theme of **'educational applications'**, in the widest meaning of the word.

* At the Sorcerer Day there also will be a technical corner, where users can have the next items fixed:
  1. Upgrading to 48K of the internal memory (you ought to provide the chips yourself!).
  2. Improvement of the cassette interface as being explained in ESGG number 7.
  3. Installation of Viewdata circuitry as explained by Jan Bonsel.
  4. Installation of BEXT8, the Basic EXTension of ESGG.

* Those among you that like to have one (or maybe more) of the afore mentioned adaptations installed, have to apply to mr. Jan van Dijk, Fourieweg 6 at 2806 VA Gouda. Jan also can be reached by phone at 01820-14559. Please telephone at decent hours!
  Remind: There is only time for a limited number of users to be helped so.... The early bird catches the worm! Jan eventually give notice if we are unable to help you. The prices are not yet announced. The prices you are used to have been reasonable up to now, so: do not dispare. Jan will let you know.

* When organizing this type of events, there is always a need for plenty of help. Together we'll manage. If you like to help us building up/taking down the stands etc., or if you are willing to assist otherwise,

please inform our secretary, mr. Charles Nettler at phone 010-330493 accordingly.

* The price for the best article this time has been a neck and neck race between the gents Rosseel and Van Grieken. As we regretably have only one price to give, this has been granted to:

mr. W.F. van Grieken
Romuluslaan 25
5631 JT Eindhoven,

for the piece of art about controlling robot arms. Congrats!
If you like to contirbute to the contents of our periodical, please send you article to the editor. Who can tell who's the next to be awarded?

****

FROM OTHER MAGAZINES.

PCM number 12: An article about communication troubles, when using RS-232C. Furthermore part 1 of a series of researches on database packets.
PCM number 1 : The research on database packets is continued in this issue and completed with an equations table. A test of HP's Thinkjet, the ink spitting printer. Communication through telephone: a review of the European misery. Software through Viditel (Dutch Viewdata), a new way to get programs.
Databus number 12: A review of the language PL/I-80; also a list of articles having been published in 1984.
Micro/Info number 8: Various articles on copyright and safe-keeping and security for software and stored information. Also a test of Turbo-Pascal.

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PRODUCT INFO.

* *From CAICOM, Nijverheidsstraat 14 at Gouda (01820-12888) is the next information:*

For some time we have been selling the well-known diskcontroller for the Exidy Sorcerer. Over a 100 of these controllers have by now found their way to various Exidy hobbyists. Up to the last one.
Even yet we receive questions whether the controller is still available. Obviously there is still a need for it.
To produce the controller anew, we need to have a minimum of 30 pieces ordered for.
That's why we use this medium to get an idea about the interest for the controller among the ESGG members. You are invited to send a token of your interest by remitting an amount of Dfl. 50,00 to account number 4265961 of CAICOM at Gouda.
It goes without saying that, if the minimum order quantity of 30 pieces has not been reached, your money will be refunded!

* *Woodcrafts Industry Chris, Kollenbergweg 2 at Amsterdam (020-976082) informs us:*

Our company is specializing in construction of computer tables. These tables are made of mass deal.
If wanted it is possible to construct according you own design. If you wish you are invited to send a drawing to us. We thereupon send you an offer without engagement. Members of a computer club get a discount of 15% when purchasing one or more of our articles.

Whit this letter there has been sent some folders describing the tables. The size of the top can vary, but always is 35 mm thick. Table model 301 and model 351 differ from another as the first has a single level while the other has a higher part for a monitor. The level of this part may vary from 11 to 20 cm over the top. Both tables have adjustable legs, varying from 68-72 cm in hight. The tables can be ordered unfinished, or varnished natural or in colour. Prices for the various models vary from Dfl. 119,00 (top size 80x60 cm) for model 301 and for model 351 Dfl. 161,50 with the same measures and a screen top of 30 cm. Cable channels can also be ordered for these tables. The Deluxe model has been provided with a 5 position connector for AC with a power switch. These channels all measure 10x10 cm. The price varies with the length from Dfl. 20,00 for the cheapest (up to 100 cm), to Dfl. 45,00 for the most expensive type. Prices include VAT.

****

INPUT.

* *From Mr. A. Hendriks from Delft, who writes:*

In ESGG periodical number 15 there has been an article about testing of various ROM parts of the memory. As some programs do not always run smoothly (e.g. KISS2 in 48K version) I recently took the trouble of typing in the listing. As the 16K version of KISS2 did not cause trouble I did not expect the Basic Pack to be the source of the problems. However.... I do get a different value from the addition! This has been somewhere near 930.000 (I can not recover the exact number now!) Perhaps you can understand my curiosity now. Whatever can be wrong in my Basic Pack: I do not own BEXT or other extensions/improvements as far as I can recall. The ROM Pack had been repaired once for printtrack crack. Maybe you know a way to find the bug (visual inspection does not show any irregularity).

Mr. Hendriks, your problem has been forwarded to the spiritual father of the program ROMTEST. As you may have read in number 17, a mr. Wever also had been confused by the product of the program. Henk Warnitz has told us to dig into it and inform us of his findings.

* *Mr. Maaskant from Muiden also has a problem:*

I have various programs that produce hard copies of listings etc.. About this printing I have a question: Is it possible to save the output to the printer in a separate file (to be able to reprint later again), e.g. in the way a .WPF file is being created through Spellbinder or the WP Pack?

Mr. Maaskant, as long as there are man, there is an awfull lot of things possible. Whit this I try to express that in fact all things a human being likes to have, can be achieved. It is just a matter of time to develop such things. At first it is of importance to know in what 'language' such a routine has to be developed, although ML always may be called from Basic.
It is also necessary to know whether such a routine writes to cassette or to diskette. Data, as ment by you, are usually stored in a database. There is, of course no problem if you like to save a group of data to a separately file and recall that file afterwards. A program like dBASE II has a routine for creating such an output file. This file remains on disk and can be called by its name (that you gave to it). Something alike also can be created in Basic. Good Luck!

* *Dany Rosseel, Lombardsijdelaan 169 at B-8440 Westende (Belgium), author of the article on the RS-232 interface has some information to supply to those interested in the hardware:*

The price of the bare RS232 cassette board has been fixed to 220 BFr.
The print can be ordered by:
- sending an EUROCHEQUE for 220 BFr. to my address;
- remitting this amount to account number 280-0406474-81 in my name with the Generale Bankmaatschappij N.V. at Westende.

The package consists of the bare board and the full documentation.

Important: When remitting from other countries (The Netherlands is also a foreign country for us!), usually extra fees are charged. Dany has been the victim of such charges! He did receive a mere 41 BFr. instead of the needed 220 BFr. in some cases. This is due to the fact that the instructor did not mention to have his account charged for the overhead cost. Whenever you like to order a printboard from Dany, please fill in the amount in Belgian Francs, where you usually fill in your country's currency. Have your bank charge your account for the extra cost for this remittance!
Dany states preferring a completely filled in, and of course signed EUROCHEQUE, as this happens to be a quicker and easier way (Do not forget to fill in the control number at the back of the cheque?).

****

ANOTHER REALTIME CLOCK.

Now that the ES66 has ceased selling its clock, there will be a number of you still having want for a means to read time and date through the computer. As a reply to the remark about the ceased sale Kees van Duijvenbode from Rotterdam sends the next announcement.

Continuing on the message in the previous issue, concerning the ESGG clock I can inform you that from now on there is a clock for sale again. Considerable time before ESGG released its clock, I started developing a REAL-TIME clock for the Exidy. Having only recently started its production lies mainly in the fact that the solution of the power down problems by simply installing a switch, did not respond to me.
This means that I actually have a design that itself executes this! Furthermore I wished my design to be accompanied by a program through which the computer not only reads the clock, but also remains free for other tasks!
The purchase of disk drives lead to another delay in the development of the software as I wished the program also to run under CP/M.
This all turned out into a REALTIME clock, you can purchase, with which through accompanying software offers constantly DAY, DATE and TIME on the screen, while just going on working with your computer! And...**without having to take precautions to prvent problems when switching power off!**
The program also offers the possibility through some CTRL-key commands to read just DAY/DATE or TIME or have these sent to the printer.
The price for the completely assembled clock, including all parts (a.o. a backup battery) and the accompanying program (CP/M version on disk) is Dfl. 150,00 (in The Netherlands). If you are interested in this package, please remit this amount to postal account 925981, of C. van Duijvenbode, Zernikeplaats 279, 3068 JA Rotterdam.
As I have to order the clock IC by 10, I beg those members, planning to order, to make contact to me by phone through 010-551644 (between 19-23 hrs). This also is the number to obtain more information.

CHIPTIPS.

By now one starts thinking that reading someone else's hints is infectuous to the writing muscles of the reader. In the past it only has been Hermine that used to do so, but now a third 'tipper' shows: Rob de Beer. Take advantage of their digging!

1. Clearing parts of the screen:

```
PRINTSPC(255)                    clears 4 lines
PRINTSPC(65)SPC(255)               "    5   "
PRINTSPC(129)SPC(255)              "    6   "
PRINTSPC(255)SPC(255)              "    8   "
```

Put the cursor above the first line to be cleared before giving RETURN. This is also true for what follows:

```
1 PRINT" ";:GOTO 1                clears n lines
```

This starts with RUN. By hitting the STOP-key you can prevent scrolling. The same goes for:

```
2 PRINTTAB(32):PRINT:GOTO 2       clears the lefthand half
```

Is your Sorcerer 48k then clear the righthand half with:

```
POKE-16391,32:FOR I=1 TO 28:PRINT,,"    ":NEXT
```

This must be typed on the upper three lines. Afterwards the cursor will stay on the right half of the screen, as long there are less then 32 characters typed and no HOME or CLEAR is performed.
Replace -16391 for 32k or 16k, by 32761 respectively 16377.

2. Printing a part of a listing:

Especially while printing long parts it is easy not having to stay near the printer to stop it at the right moment. Many utilities like System3 therefore offer such an option.It can also be done with:

```
1 RESTORE zzz:A=PEEK(445)+256*PEEK(446)+1:D=PEEK(A):E=PEEK(A+1)
2 POKE A,B: POKE A+1,C: B=D: C=E: LIST aaa
```

Here aaa is the number of the first line to list and zzz the first line not to list. After having listed, the program is mutilated! In order to recover type GOTO 2. This is to be done before anything else, only switching the printer off is permitted, of course. The above can also be used as a direct command by typing it without line-number. Line 2 becomes then:

```
POKEA,0:POKEA+1,0:LISTaaa.        The recovering then goes:
POKEA,D:POKEA+1,E:LIST
```

3. Test commands for multiple use:

When while developing or debugging of a program a certain command has to be given more than once, it could be handy for BEXT users to type this command at the bottom line of the fixed part of the screen, created with I=USR(8). E.g. it could be:

```
FOR I=0 TO 15:PRINT PEEK(S+I);:NEXT
```

in order to check memory locations. The call can be achieved with HOME (or CLEAR) - arrow up - TAB - RETURN, so with only 4 key-strokes and

[redacted]nswer appears always at the same spot of the screen. The program variables will also keep their value.

4. Linking two program lines:

Let's imagine you have two half-filled program lines numbering 40 and 42 and you like to link them into one line 40. You also do not like to type them again.
Then put a colon (:) in front of the text of line 42, move that line to the right with the BEXT-editor, right past the end of line 40. Put the cursor two lines above, type 'LIST 40', and press the STOP-key in time. Enter with BEXT the new made line 40 and erase line 42.

5. Is variable M still (or again) free to use?

Maybe it is not as it should be, but I usually do not keep record of the variables I use. This however does fire back afterwards when needing a variable e.g. for program expansion. I wonder if M is free or not! It is easy with the Search-option in BEXT: type TAB and @ keys, followed by M= and that's all.

6. Insert a part from another program:

If I can use a part of another program in a new one I avoid typing that part anew as follows:
a. Move the initial program to 6000H with MO 100 6000 SXXXX.
b. CLOAD the other program.
c. LIST the part you want and move the screen-dump to 5000H with MO F080 5000 S77F.
d. Move with MO 6000 100 SXXXX the original program back in place.
e. Move the fragment to the screen with MO 5000 F080 S77F.
f. Enter the desired line numbers in front of the lines with the BEXT editor. Those lines now often need different numbers and variables.

This is also possible with three programs, but then it becomes a kind of Towers of Hanoi puzzle!

****

SWITCH BOX PARALLEL PORT.

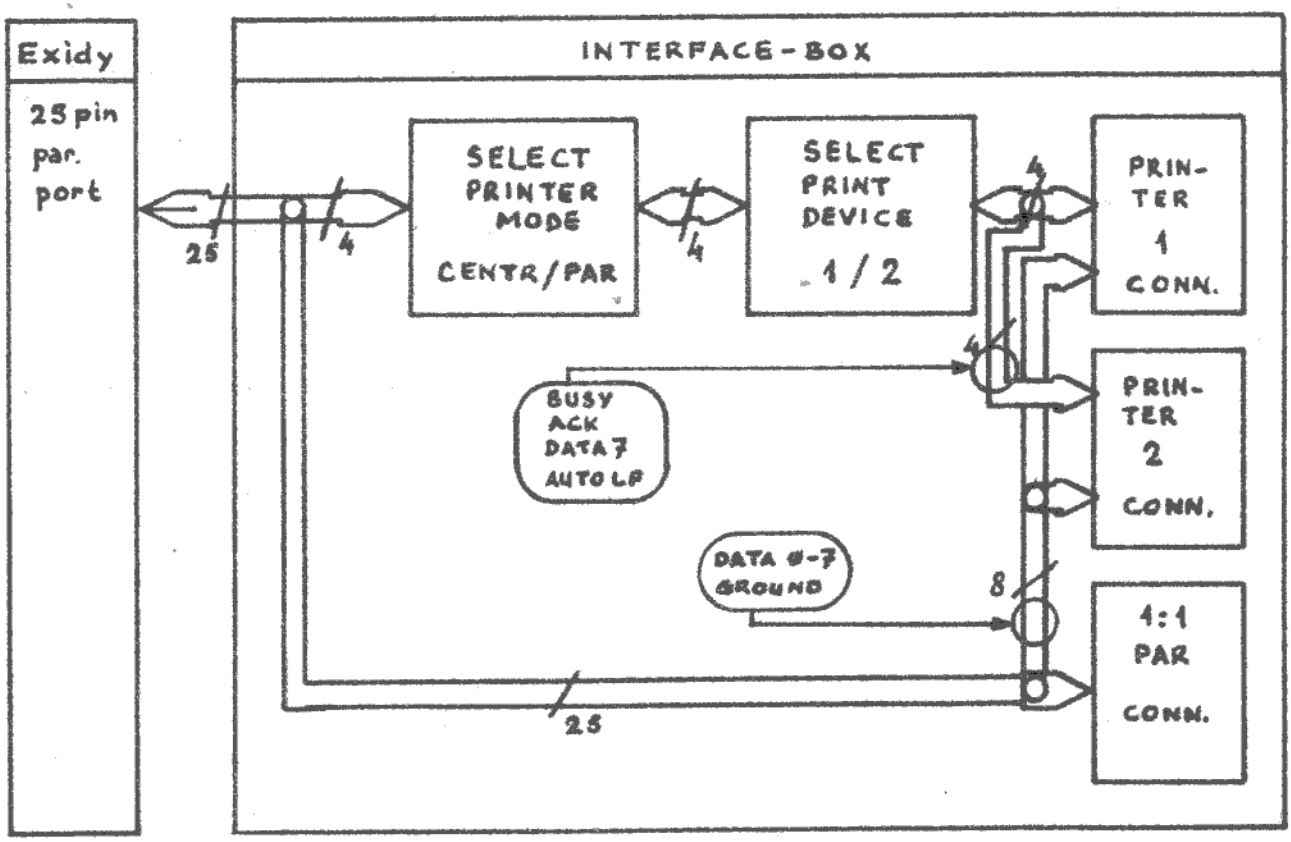
by Welmoed Jonker.

I regularly am doing wordprocessing and while doing so I often have to print on regular sheets as well as on labels. My printer, getting older, got support from a second printer.
When having to change connectors each time, to be able to use both of the printers, one starts figuring out a switch that has to take over the hooking on and off of the printers. If one likes to make it a perfect job, one could create a switch controlled by the computer. If you do not need such a high luxe type, you also can do with a mechanically switchable unit. The version achieved also depends upon ones knowledge of electronics. My knowledge in that regard is not too great, so I started from a mechanical version.

Another problem I had to deal with was that I wished three instead of two ports, being two for the printers and one for a Radio-Telex (RTTY) port. Furthermore I liked the printers to be able to operate Centronics as well as parallel mode.
To hook up the printer ports only need 13 lead cable, but I liked to have the third port to be a 1:1 exit to be able to use it for various purposes.

The part about this 'bus' I sent to Aad van Duijvenbode for checking and editing on contents and accuracy. As Aad found a way to do it even easier than I had designed, he has completed my story with a kind of diagram and block layout.

Before going into technical details, you first find the block layout. From this you can derivethe Exidy parallel port being fully inserted in the box. In this box the division for printer and device selection is made.



While working out the idea for this switch box I constantly had in mind the availability of the necessary parts. The connectors needed for the cables are perhaps in your possession. If not you will not meet problems in purchasing them: they are the well-known 25 pin D-connectors. For a switch I chose the sub-miniature switch of CNK, type 3x toggle. A bigger switch would need a larger box and thus increase the price. Finally a diode is needed to take care of the eighth bit (usually providing the Strobe, but now only needed as a true 8th bit) not disturbing the print-out while being in Centronics mode. To prevent a lump of wire at the connector pins I used a piece of printboard on which all connections have been made. Both of the printer ports only have been wired at the pins in use. The third port, that I liked to be of use for more purposes as you might recall, has been wired at all pins from the printboard.

To be able to determine what connections need go directly to the ports and what need go through one of the switches, we are first to look at the signals/connections coming from or going to the Sorcerer.

1. Strobe (from Sorcerer, at two pins!).
2. Ground.
3. Data bits 0 to 7 (from Sorcerer).
4. Acknowledge (reception acknowledgement from printer).
5. Busy (not-ready-for-reception signal from printer).
6. Option: Auto-linefeed (if you are going to use it, then the dip-switch in concern inside the printer need to be set to 'OFF').

Now having determined what connections and signals we are going to deal

with, the moment is there to see what need to be done to have all operating properly.

1. The controlling signals from and to the computer have to be hooked off from the unused device. These signals are:
   a. the strobe (DAV), Sorcerer parallel port pin 4: centronics mode;
   b. the strobe (DAV), Sorcerer parallel port pin 3: parallel mode;
   c. the acknowledge (ACK), Sorcerer parallel port pin 2;
   d. the busy, Sorcerer parallel port pin 25: input signal.

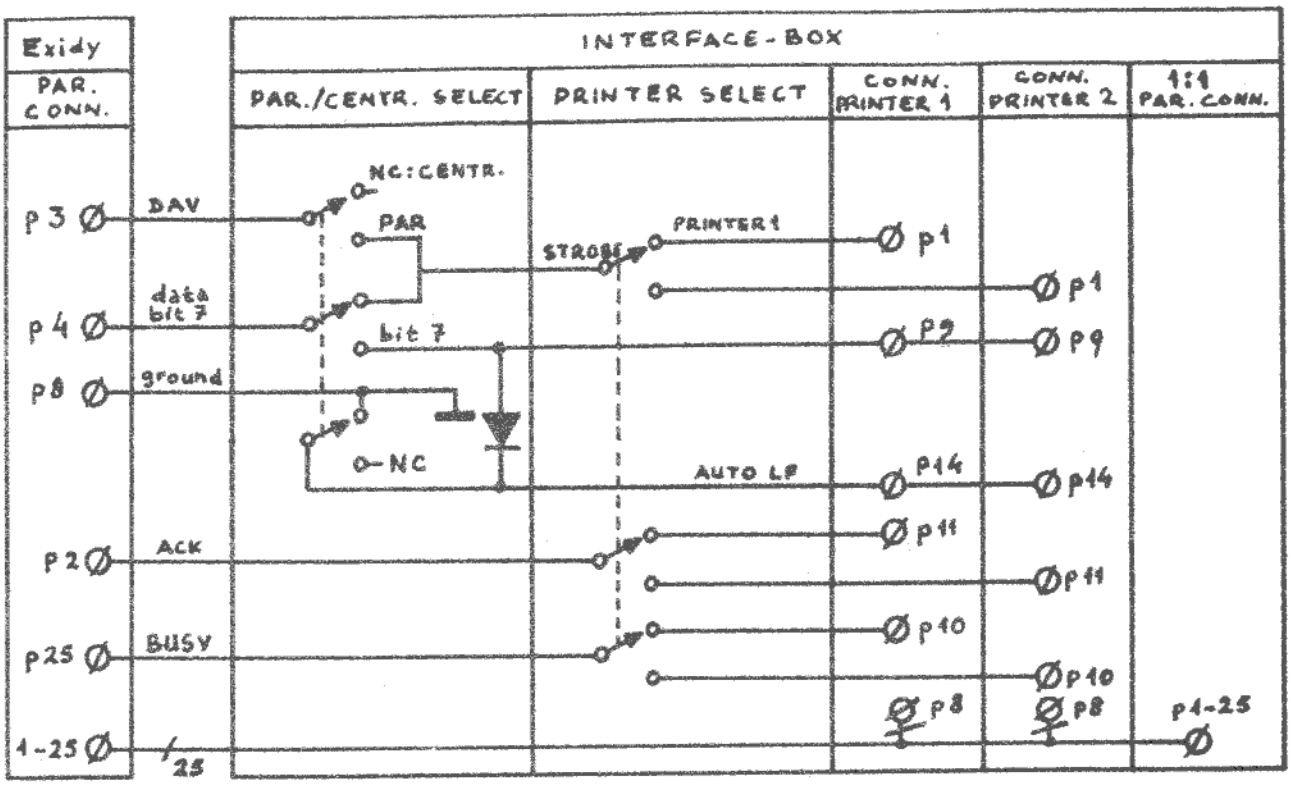
   Note: For ordinary centronics use b. does not need being connected. It is only necessary when the parallel port also is to be used for graphics.

2. The data lines, except for bit 8 (Sorcerer pin 4), all can be connected directly to the respective connectors of the output ports. This also is done for the ground (Sorcerer pins 1 and 8).

3. When using centronics as well as parallel mode the auto-linefeed need to be switched on and off (on: in centronics mode as no linefeed is performed otherwise; off: in parallel mode as otherwise double linefeed is performed).

4. When using centronics mode, data bit 8 need connecting to Strobe and printer pin 9, through which the printer receives data bit 8, need connection to ground to prevent irregularities.
   In parallel mode data bit 8 has to be offered to printer pin 9 and the Strobe has to be inputted into the printer from Sorcerer pin 3.

To give an idea about the circuitry the diagram for the connections is given herewith.



In concern with this diagram the next remarks have to be made:

a. The cable between switch box and printer(s) is, due to double functions somewhat differing from the usual centronics cable. You have to see to it that the Strobe, the eighth bit as well as the linefeed have their

their private lines.
This also signifies that this cable cannot be used without the box. You would not be able to print in centronics mode.

b. The diode has to be inserted in the circuitry as strange things are happening in centronics mode when being left out. This diode can be any ordinary type. I, myself, did use a IN4001.

c. Floor Vogelaar, our chairman, has been writing about the timing conditions to be fullfilled to avoid problems while printing (in HCC Newsletter). He also mentioned that in spite of the lack of the necessary hardware he never did meet problems while printing. From that point of view I too, did not insert extra hardware for timing purposes. Up to now neither of the printers (MX-80 and JP80-A) showed the afore mentioned irregularities.

The things needed done for this box do not require a lot of skill, only accuracy in creation is necessary, so one who wires his cables by himself, also is assumed to be able to make this box himself. If you have two printers and also like an extra port, this is in my opinion your least expensive solution.

To conclude I like to point out that whenever you have improvements on this diagram, e.g. a fully automatically version of it, or a simplification of this idea, that idea of course can be sent to the editor. Your fellow readers surely will appreciate!
Good luck.

****

CP/M MODIFICATIONS (4).

Right after the copy for the previous issue had been sent to the printer, Fred Knottenbelt sent in some adaptations. This time these were no actual improvements, but coorections to previously made remarks. Fred's on.

Dany Rosseel from Westende in Belgium had sent in an adaptation of the automatically wrap-around function. By his modification the wrap-around is not performed upon 63, but 64 characters.

At first Fedde and I did somewaht reject his modification as the routine E205 performs a CR&LF through the monitor output vector whereas the other characters are sent directly to video. When changing the output vector after having started the monitor, the characters and the CR&LF are being sent to different devices. In the meantime we learned that in the video driver itself also is worked through the output vector when a backspace (CTRL-H) need be performed. This of course happens to be a misser, but it also signifies a possibility for installing Dany's modification.

There also has been asked to judge the modification in the article by mr. Van der Ven, having been published in the periodical number 13, page 13. In his version he sends the input through the input vector. We feel this being possible if the output were to go through the output vector. We found the stack area in CP/M too small to direct the output to the screen (it will cause trouble if CTRL-H has to be sent to screen). For this reason we reject this modification: We like to choose for consistently work!

****

FROM WORDPROCESSOR TO BASICODE.

In number 14 mr. T. Huisman from The Hague had shown in what way he fetched Basicode-programs to the wordprocessor, to be able to edit these programs. At the end of that article he mentioned that the way back to Basicode was not there yet and needed some thinking over. He obviously did not need much time to do so, as the article hereafter shows. He draws an outline of the development and then gives the new routine.

When I made Basicode programs accessible from the wordprocessor through the program BC2WP, the problem then remained that the ASCII wordprocessor-file had to become a regular Basic program again.
Well, there already is a program that translates an ASCII program listing into Standard Basic, which is -you may have guessed yet- the Basicode read routine. Our problem now can be solved by teaching the wordprocessor to 'speak' Basicode!
The program WP2BC therefore mainly exists of the Basicode write routine by Jan Bonsel, with something left out and some additions for this special purpose.
The recipe for the use is as follows:

1. create a Basic program with the wordprocessor
2. in command mode go with X to the monitor
3. load WP2BC with LO
4. recorder ready for recording of Basicode
5. start WP2BC with GO 0
6. read the obtained recording with a Basicode read routine

As you see, Basicode knows many ways!

The hex dump of the program:

```
ADDR      0  1  2  3     4  5  6  7     8  9  A  B     C  D  E  F

0000:     C3 67  from here to 67 fill with '00'
0060:     at 67 continue with:    F5    D9 2A 4A 07    22 E9 00 06
0070:     01 CD 24 E0    CD B8 00 2A    EB 00 56 7A    CB BF 32 80
0080:     F0 1E 08 CD    C4 00 CB 1A    DC CC 00 D4    C4 00 1D 20
0090:     F5 CD CC 00    CD CC 00 E5    ED 5B E9 00    AF ED 52 E1
00A0:     23 20 D7 CD    B8 00 CD 27    E0 00 00 00    00 00 00 D9
00B0:     F1 C3 03 C0    00 00 00 00    11 70 17 CD    CC 00 1B 7A
00C0:     B3 20 F8 C9    AF ED 4B E7    00 C3 D7 00    AF ED 4B E8
00D0:     00 CD D7 00    C3 D7 00 41    D3 FF 10 FE    EE 01 41 D3
00E0:     FF 10 FE EE    01 37 C9 3F    1E 05 0C 0E    08 0F 00 00
```

****

SPELLBINDER SPECIAL.

I am sure you all are glad to hear that Floor Vogelaar is doing better. In order to show he is in again in his own way, he has sent us an article, dealing about improvements of Spellbinder. As he once created routines to imbedded printer-commands in the text for the Exidy Wordprocessor, he now did the same thing this time for Spellbinder.

Although Spellbinder has more possibilities than the WP-Pack, there are still things to wish for this wordprocessing program. To those using more than two drives, the access of a third drive could be a fancy when using Spellbinder.
Furthermore I have created ossibilities through which some often used

printer commands can be inserted in the text as 'in line commands'.

The installation of the required changes can be made with DDT or SID, in the program XSB.COM (or XSBNED.COM, the Dutch version). The changes I made are for the version 5.12. For other versions one has to check whether the changes are to be made in the same address and if, upon adapting no disrupt of the program functions occur.
Hereafter I will mention the addresses and the codes to enter there.

address	new code	remarks
5F4A	1-3	Number of connected drives (default 2).
669F	1B	Underline ON; command: !u.
	2D	
	01	
	1B	Underline OFF; command: !v.
	2D	
	80	
66A5	1B	Italics ON; command: !w.
	34	
	00	
	1B	Italics OFF; command: !x.
	35	
	00	
66AB	1B	Emphasized ON; command: !y.
	45	
	00	
	1B	Emphasized OFF; command: !z.
	46	
	00	
7089	"JP 80, MX series "	(or the brand of YOUR printer); text of maximum 20 characters!!
71CE	0E	Enlarged ON; command: !q.
	00	
	00	
	14	Enlarged OFF; command: !r.
	00	
	00	
71D4	0F	Condensed ON; command: !s.
	00	
	00	
	12	Condensed OFF; command: !t.
	00	
	00	

The attentive reader did notice that the dynamic codes (!q till !z) are always three bytes together. These are the codes being sent to the printer. If you use a different make of printer you easily can insert your own codes. Mind that if a code demands less than three bytes, you need to fill the gap with '00'. You always see to it that a set of three codes is filled in.

After having made the changes return to CP/M with CTRL C. Write your new XSB (or XSBNED) on disk as s.g. XSBJP80.COM when you own a JP-80A printer, with the command SAVE 117 XSBJP80.COM (for the initial drive!)
Your own version of Spellbinder is available by typing XSBJP80 <RETURN>. To the question which of the three type of printers you choose, reply '1'. Further instructions are given by the program itself.

Mind **NOT** to use capitals in your '!..' (printer)-commands. Then things are really going wrong!

Another tip: Put in the Y-table the value for 'Special Character' to 7. On your screen you get REVERSED CHARACTERS wherever you like, of which there can not be found a single item while printing.

By the way, did you already knew the to enter ASCII text in the program SID? This can be done by putting the text between quotation marks.
Good luck.

****

CHANGES INTO TINYPASCAL FOR DISK.

Mr. Quaedvlieg from Nijmegen met some inconveniences when using Tiny Pascal by dr. De Vries. He did solve a number of it by himself and now informs the readers of his solutions.

The disk with the Pascal programs, as being released by the ESGG does not offer the maximum of comfort in use. This problem has been acknowledged by the authors and also has been mentioned in the explanation.

After having experimented somewhat I did find a way of operation that solves the most important difficulties, being the writing of programs to disk using monitor commands and the accessory calculations.

I had the editor perform the part of calculating the number of pages to be saved, through the W(rite) command. Also an uploader is automatically added to the program and the program itself is being moved to address 120 hex.

Next a text, helpful to 'save' is displayed on screen. This text mentions the number of pages to be saved with an advise concerning the file's name. Thereupon CP/M is started and its prompt is displayed. To actually write this file to disk we now type the fixed part of the advise and insert the desired file name on the five dots.
Example:

On screen the next text appears upon the EDITOR command W(rite):

```
CP/M Warm start
Write the program to disk through:

SAVE 31 .....-PD.COM

A>
```

After the CP/M prompt we type:

```
SAVE 31 PASCL-PD.COM <CR>
```

assuming that our program had to be saved with the name PASCL to disk. The number of 31 refers to the number of pages and may differ from program to program.

We now do not need calculating no more, need not return to monitor, just type whatever the program advises. This amount of work is acceptable. Even when comparing this to the work needed done under full control of CP/M's read and write routines, having also to type the filename.
It is not necessary now to write a file to disk. We are now in CP/M and so

we are able to load another program without saving the previous one. The first file now is lost.

Back to Tiny Pascal is performed by typing the name of a Pascal.COM file in CP/M. Such a file now will load itself into the right addresses and then start the EDITOR. From the EDITOR we now have a number of options. We are to translate and run the program, with or without changes, or when planning to enter a new program just K(ill) the old program and proceed.

Another solution to the last problem (returning to Pascal for entering a new program) is done by inserting the next instructions from address 100:

```
100: C3 00 60
```

This performs a jump to the "Tiny Pascal Operating System", making Tiny Pascal start again. Next to do is saving a page in CP/M by:

```
SAVE 1 PASCAL.COM
```

In CP/M we now may call Tiny Pascal by the instruction PASCAL. This on condition that Tiny Pascal had been loaded entirely and that no programs had been running since. It is a kind of warm start for Tiny Pascal from CP/M.

To achieve the afore mentioned matters the tape read and write routines have to be killed. This does not have to create problems when having two versions of Tiny Pascal on disk. The tape version and a disk version. Taping a disk program thus does not cause problems. To do so, load the tape-version of Tiny Pascal from disk, return to CP/M in the old way. Next to do is call the desired program and after some time we are back in the EDITOR. Thereupon the program can be recorded to tape through the W(rite) command.

The reverse order is more difficult and actually is equal to the theory of operation up to now.
The comfort of the next changes is mainly in reading and writing files from and to disk.

The influence of the missing piece for writing to tape to the Basicode part of Tiny Pascal can not be judged by me as I do not use it. Be carefull with it!

Changes in the Editor.

The procedure 'load' has to be changed as follows:

```
PROC LOAD;
   BEGIN
      WRITE(12,CR,CR,'CP/M WARM START',CR);
      WRITE('SELECT THROUGH "DIR"',CR,CR);
      WRITE('PROGRAM NAME WITHOUT "COM"?',CR,CR);
      CALL(%D303);
   END;
```

The instruction CALL(%D303) may differ with the system. This jump address is valid for a 56K CP/M version. It is the so-called warm boot address of CP/M. You can find it by inspecting the contents of addresses 0 to 2 after having started CP/M. At this address is a jump to CP/M: JMP(C3),LOADDR, HIADDR. IN my case C3 03 D3. If your system has a different address here, you need to change it in the CALL instruction.

Next to do is adapting the procedure 'save':

```
PROC SAVE;
   BEGIN
      WRITE(12,CR,CR,'CP/M WARM START',CR);
      WRITE('WRITE THE PROGRAM TO DISK THROUGH:',CR,CR);
      WRITE('SAVE',((EOT-%6EE) DIV 256)#);
      WRITE(' .....-PD.COM',CR,CR);
      CALL(%B300);
      CALL(%D303);
   END;
```

In the third write statement the number of page to be saved are being calculated, regarding the length of the uploader.

As there is a minor error in the EDITOR, causing 399 lines to be read while 400 lines wer saved, I also mention the change for it.

```
PROC LINEEND;
   BEGIN
      J:=1;EOL[0]:=START-1;
      FOR I:=START TO EOT DO
      BEGIN
         IF MEM[I]=CR THEN
            BEGIN EOL[J]:=I;J:=J-1;
            J:=CHECK(J);J:=J+1;
            END;
      END;
      MAXLINENO:=LINENO[J-1];
      NOLINES:=J-1;
   END;
```

The message that the maximum number of lines is reached now is displayed upon having typed line 401. This however changes the program already. The next change of the function check does display this message after having typed the last valid line.

```
FUNC CHECK(X);
   BEGIN
      IF MAX-1 THEN
         BEGIN WRITE(CR,'Maximum number of lines',cr,
               'More lines can be added by deleting ',
               'other lines',CR);
         END;
      IF X=MAX THEN CHECK:=MAX
      ELSE CHECK:=X+1;
   END;
```

After having inserted these changes you are to leave the EDITOR and by the command C of the "operating system" you are to compile the altered EDITOR.

Changing machinelanguage routine %B300.

Through the monitor command EN B300 we now change the next memory addresses:

```
B300: 21 0F 08     Load a block of 27F1 hex in size
B303: 11 20 01     from 080F down to address 0120 hex.
B306: 01 F1 27     This is the actual
B309: ED B0        Pascal source file.

B30B: 21 20 B3     Load a block of 000F hex in size
B30E: 11 00 01     from B320 down to address 0100 hex.
B311: 01 0F 00     This is the uploader for the Pascal
```

```
B314: ED B0         source file which is added to the file,
B316: C9            then 'return' to the editor.

B320: 21 10 29      This is the uploader which has to be placed
B323: 11 FF 2F      before the Pascal source file.
B326: 01 F1 27      The loader gets a block of 27F1 hex in size
B329: ED B8         and loads it from end address 2910 up to 2FFF.
B32B: C3 03 60      Then calls the editor upon having uploaded.
```

Changes in the Operating System.

In the "operating system" we have the command "Q" that returns us to the monitor. It is more comfortable in this case to return to CP/M, especially when using disks.
To do so we have to change:

```
'Q','q':CALL(%E003);     has to become
'Q','q':CALL(%D303);     with the same remark as before concerning the
                         CP/M warm start address.
```

And now the next line: 'C:Compile',13,'R:Run',13,'Q:Quit',13,
change this into: 'C:Compile',13,'R:Run',13,'Q:Quit via CP/M',13,

After having inserted these changes you leave the EDITOR and through the C-command of the "operating system" you are to compile the modified "operating system".
Next to do is return to the monitor.

Saving the new disk-Pascal version to a disk.

Use the monitor command: MO 6000 0120 S5990 to move the memory block of 6000 to B990 down to the starting address 0120 hex. Next we start changing the addresses from 0100 and up using the monitor command EN 100:

```
100: 21 20 01
103: 11 00 60
106: 01 90 59
109: ED B0
111: C3 00 60
```

This last piece of program is the uploader that has to put the Pascal program in its correct locations after having loaded from disk.
Then we start CP/M and write the modified Pascal version to disk with the CP/M SAVE command:

```
SAVE 90 TINYPASC.COM
```

I wish you a lot of comfort with these changes. Life with TINY PASCAL gets easier this way.

****

CENTRONICS ROUTINE IN PASCAL.

After the long article about the problems to solve in order to use his disk drives without read- or write-errors, Henk Warnitz is back again, this time with a printer-driver.
This program is certainly not the first program ever written in Pascal, but it is certainly the first Pascal program appearing in the ESGG-periodical. See how quick a new language gets a habit!

A few weeks ago I offered my Epson TX80 printer, with a Graftax Rom, for sale in the HCC-newspaper. I still had to write a demonstration-program for the dot-image graphics, but I forgot it. Two weeks ago, on a saturday afternoon, someone called on me by phone, and told me that he was especially interested in graphics, and would be at my place within an hour!
How could I ever achieve that program in time, knowing that the TX80 could not be driven from Basic.
When the printer receives the command "ESC" "6", the head starts moving and expects the data bytes in time. This can only be done with a Centronics parallel-interface and not with a RS232C interface. A true realtime problem, solved in the Graftax manual with an 8080 assembly program. Since I am not very fond of assembly, I decided to give it a try in Pascal MT+, hoping that it was fast enough.
25 minutes were already gone; anyway, the program I wrote:

```
CONST ESC =$1B;
      BUF_LEN = 483; (* BUFFER LENGTH *)

VAR P : TEXT;
    BUFFER : ARRAY[1..BUF_LEN] OF BYTE;
    RESULT,I,II,III : INTEGER;

  PROCEDURE WRITE_BUFFER;

  VAR I : INTEGER;

  BEGIN
 (* WRITE_BUFFER TO EXIDY CENTRONICS PORT *)
    FOR I:=1 TO BUF_LEN DO
    BEGIN
      WAIT($FF,128,TRUE);
      SETBIT(BUFFER[I],7);
(* MSB := '1' *)
      OUT[$FF]:=BUFFER[I];
      CLRBIT(BUFFER[I],7);
(* MSB := '0' *)
      OUT[$FF]:=BUFFER[I];
      SETBIT(BUFFER[I],7);
(* MSB := '1' *)
      OUT[$FF]:=BUFFER[I];
    END;
  END;
(* WRITE_BUFFER *)


  PROCEDURE INIT_BUFFER;

  VAR I : INTEGER;

  BEGIN
 (* INIT BUFFER *)  (* EMPTY HIM *)
    (* 1 AND 2 ARE THE COMMAND *)
    BUFFER[1]:=$1B; BUFFER[2]:=$36;

    (* FILL THE REST WITH NULLS *)
    FOR I:= 3 TO BUF_LEN DO BUFFER[I]:=$0;
  END;
 (* INIT_BUFFER*)
```

(continued next page)

```
BEGIN  (* MAIN PROGRAM *)
  (* OPEN PRINTER FILE *)
  ASSIGN(P,'LST:');   (* this differs from standard Pascal! *)
  REWRITE(P);

  (* CHANGE THE LINESPACE OF THE PRINTER *)
  WRITE(P,CHR(ESC),'1');

  FOR III:= 1 TO 5 DO
  BEGIN
    INIT_BUFFER;
    (* LOAD_BUFFER. NEVER MORE THEN BUF_LEN!! *)
    I:=3;  (* START OF THE DATA FIELD *)
    FOR II:= 1 TO 256 DO
    BEGIN
      BUFFER[I]:=II;
      I:=I+1;
    END;
    WRITE_BUFFER;
  END;
(* FOR I *)

  (* RESET THE PRINTER *)
  WRITE(P,CHR(ESC),'2');
  CLOSE(P,RESULT);
END.  (* MAIN PROGRAM *)
```

And it worked!

Look especially at the write_buffer routine. This is an true translation in Pascal of the Centronics routine in the monitor. The standard method to drive the printer via CP/M was too slow, so had to be diverted.
This also shows the power of the Pascal language and also its way to self-documentation. So I leave it to you to find out how the program works.

HINT: The main-routine of a Pascal program is always at the end of the listing. Afore there are its subroutines, namely the functions and procedures.

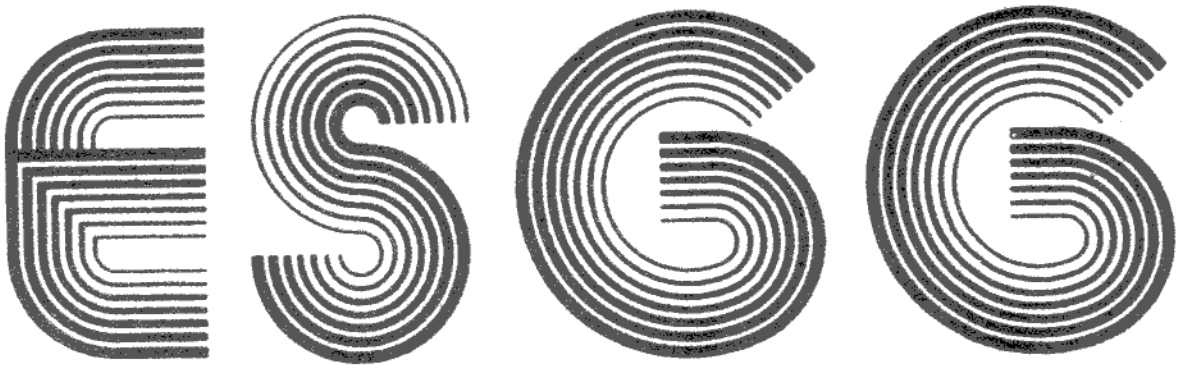
****

COPY.

We are still able, thanks to all of you, to provide you with a well-filled ESGG-periodical every two months. Although sometimes it may seem we do not need your articles, for it can take some time before getting pubished, you are not to regard this as a sign of non appreciation or not needing your articles no more!

The opposite is the truth! We really can not function without your assistance in maintaining the periodical. If you have a contribution available, or if you are willing to write an article for the periodical, please do so; the editor is glad to receive your contributions.

The delay in publication as meant in the first part is a.o. a result of the way the editing team is functioning. As this periodical is bi-lingual and we like to see both versions filled with the same articles, we first have to see to the translation of your article.
It also is possible that we have to set priorities. By this, for the common interest, it can be necessary to publish an article at a later time than scheduled! We hope to have your sympathy and understanding for this.



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