```
0                                                                   " 7.5
1                                                                   " HCOLLAPSE - 0
2  HCOLLAPSE(159)
3           S = HPRIORITY[HA3]
4       U,  S - 12, P                       " L > 12?
5       Y,  JUMP(144)
6           G = M[B - 2]                    " UNDERTOP
7           F - '5002', Z                   " LEFTNUMERICAL?
8       N,  JUMP(9)
9           S = - M[B - 1]                  " - TOP
10          S '*' '404', Z                  " NUMERICAL OP?
11      N,  JUMP(5)
12          B - 1
13      U,  B - HONDERGRENS[HA3], Z
14      Y,  SUBC(:HUNSTACK)
15          S = '4404'
16          M[B - 1] = S                    " TOP
17          S = HPRIORITY[HA3]
18      U,  S - 9, P                        " L > 9?
19      Y,  JUMP(130)
20          G = M[B - 2]                    " UNDERTOP
21          F - '6002', Z                   " LEFTRELATION?
22      N,  JUMP(9)
23          S = - M[B - 1]                  " - TOP
24          S '*' '404', Z                  " NUMERICAL OPERAND?
25      N,  JUMP(5)
26          B - 1
27      U,  B - HONDERGRENS[HA3], Z
28      Y,  SUBC(:HUNSTACK)
29          S = '7004'                      " RELATION
30          M[B - 1] = S                    " TOP
31          S = HPRIORITY[HA3]
32      U,  S - 8, P                        " L > 8?
33      Y,  JUMP(116)
34          S = - M[B - 1]                  " - TOP

35                                                                  " 7.5
36                                                                  " HCOLLAPSE - 1
37          S '*' '1004', Z                 " BOOLEAN OPERAND?
38      N,  JUMP(9)
39          S = M[B - 2]                    " UNDERTOP
40      U,  S - '6602', Z                   " LEFTBOOLEAN?
41      N,  S - '5602', Z                   " NOU?
42      N,  JUMP(5)
43          B - 1
44      U,  B - HONDERGRENS[HA3], Z
45      Y,  SUBC(:HUNSTACK)
46          S = '11004'                     " LOGICAL RESULT
47          M[B - 1] = S                    " TOP
48          S = HPRIORITY[HA3]
49      U,  S - 3, P                        " L > 3?
50      Y,  JUMP(101)
51          S = M[B - 2]                    " UNDERTOP
52          S - '4702', Z                   " EXPRESSION ELSE?
53      N,  JUMP(39)
54          S = - M[B - 1]                  " - TOP
55          S '*' 4, Z                      " OPERAND?
56      N,  JUMP(36)
57          S = - M[B - 1]                  " - TOP
```

```
58          A = - M[B - 3]                  " - TWOUNDERTOP
59      U,  S '*' '104', Z                  " DESIGN OP?
60      N,  JUMP(15)
61      U,  A '*' '104', Z                  " IDEM
62      N,  JUMP(13)
63          S = '5704'                      " LABELVALUE
64          M[B - 4] = S                    " THREEUNDERTOP
65          DO(MD[- 1])                     " HERSTELA
66          B - 1
67      U,  B - HONDERGRENS[HA3], Z
68      Y,  SUBC(:HUNSTACK)

69                                                                  " 7,5
70                                                                  " HCOLLAPSE - 2
71          B - 1
72      U,  B - HONDERGRENS[HA3], Z
73      Y,  SUBC(:HUNSTACK)
74          B - 1
75      U,  B - HONDERGRENS[HA3], Z
76      Y,  SUBC(:HUNSTACK)
77          JUMP(- 25)
78      U,  S '*' '204', Z                  " UNKNOWN OP?
79      N,  JUMP(3)
80      U,  A '*' '204', Z                  " IDEM
81      Y,  S = '1604'                      " UNKNOWN RESULT
82      Y,  JUMP( - 17)
83      U,  S '*' '404', Z                  " NUMERICAL OPERAND?
84      N,  JUMP(3)
85      U,  A '*' '404', Z                  " IDEM
86      Y,  S = '4404'                      " NUMERICAL RESULT
87      Y,  JUMP( - 22)
88      U,  S '*' '1004', Z                 " BOOLEAN OP?
89      Y,  A '*' '1004', Z                 " IDEM
90      Y,  S = '11004'                     " LOGICAL RESULT
91      Y,  JUMP( - 26)
92          DO(MD[ - 1])                    " HERSTELA
93          S = 68
94          JUMP(65)                        " NAAR AL32
95          S = HPRIORITY[HA3]
96      U,  S - 2, P                        " L > 2?
97      Y,  JUMP(56)
98          S = - M[B - 1]                  " - TOP
99      U,  S '*' 4, Z                      " OP?
100     N,  JUMP(21)
101         S = - M[B - 2]                  " - UNDERTOP
102     U,  S + '302', Z                    " LEFTASSIGNMENT

103                                                                 " 7,5
104                                                                 " HCOLLAPSE - 3
105     N,  JUMP(4)
106         B - 1
107     U,  B - HONDERGRENS[HA3], Z
108     Y,  SUBC(:HUNSTACK)
109         JUMP(19)
110     U,  S + '502', Z                    " GOTO?
111     N,  JUMP(5)
112         S = - M[B - 1]                  " - TOP
113         S '*' '104', Z                  " DESIGN OP?
114     Y,  JUMP( - 9)
115         S = 69
```

```
116          JUMP(45)                          " NAAR AL33
117          S '*' 1, Z                        " STATSTADM(UTOP)?
118      N,  JUMP(12)
119          S = M[B - 1]                      " TOP
120      U,  S - '7604', Z                     " PROCEDURE RESULT?
121      N,  S - '1704', Z                     " IDENTIFIER?
122      N,  JUMP(8)
123          JUMP(5)
124          S '*' 1, Z                        " STATSTADM(TOP)?
125      N,  JUMP(5)
126          B + 1                             " STACK(EMPTY)
127      U,  B - HBOVENGRENS[HA3], Z
128      Y,  SUBC(:HSTACK)
129          S = '1240'                        " STATEMENT
130          M[B - 1] = S                      " TOP
131          S = HPRIORITY[HA3]
132          S - 1, P                          " L > 1?
133      Y,  JUMP(22)
134          S = M[B - 1]                      " TOP
135          S - '1240', Z                     " STATEMENT?
136      N,  JUMP(19)

137                                                                  " 7,5
138                                                                  " HCOLLAPSE - 4
139          S = M[B - 2]                      " UNDERTOP
140      U,  S - '2001', Z                     " STATEMENT THEN
141      N,  JUMP(4)
142          B - 1
143      U,  B - HONDERGRENS[HA3], Z
144      Y,  SUBC(:HUNSTACK)
145          S = M[B - 2]                      " UNDERTOP
146          S - '3101', Z                     " FORCLAUSE?
147      N,  JUMP(8)
148          B - 1
149      U,  B - HONDERGRENS[HA3], Z
150      Y,  SUBC(:HUNSTACK)
151          B + 2
152          S = 9
153          SE73
154          HTRANSNL
155          JUMP( - 17)
156          S = '1240'                        " STATEMENT
157          M[B - 1] = S
158          S = 13
159          GBILL + S, P
160          SE115
161          GL1=A
162          MA=B                              " ZET WP
163          SE34                              " GL0 STAAT AL GOED
164          HFOUT[HA3] = S
165          MA=B
166          B + 2
167          S = 9
168          SE73
169          HBOODSCHAP

170                                                                  " 7.6
171                                                                  " HTRANSNS - 0
172 HTRANSNS(200)
173          S = - HNIA[HA3], P                " IN GL0 STAAAT TERUGKEER ADRES
```

transport to name stack

```
174     N,  JUMP(15)
175         S = HLRP[HA3]
176         S + 1
177         HTELLER[HA3] = S
178     U,  S - HTNS[HA3], Z
179     Y,  JUMP(10)
180         G = - S
181         S = :HNS, Z
182         SUBC(MS)
183         SE39
184         G - HCIN[HA3], Z
185     Y,  S = 80
186     Y,  JUMP(178)                    " BOODSCHAP
187         S = 2
188         PLUSS(HTELLER[HA3])
189         JUMP(- 12)
190         G = - HTNS[HA3]
191         S = :HNS, Z
192         SUBC(MS)
193         SE38
194         G = HCIN[HA3]
195         DO(MC[- 1])
196         F = - 1
197         MC = - G                     " PARAMETERCODE VERWACHT HIER IETS NIET
198         G - HTNS[HA3]                " D[13] = 0
199         S = :HNS, Z
200         SUBC(MS)
201         SE38
202         SUBC(:MT[10])                " G := PARAMETERCODE
203         DO(MC[- 1])
204         B - 1

205                                      " 7,6
206                                      " HTRANSNS - 1
207         S = 2
208         HTNS[HA3] + S
209         S = 20
210         GBILL + S, R
211         SE115
212         MA = B
213         GL1 = A
214         SE34                         " EINDE TRANSPORT TO NAMESTACK
215         S = M[B - 5]                 " SUBROUTINE G := PARAMETERCODE
216     U,  S - '340', Z                 " FORMAL OPEN?
217     Y,  F = '10000'
218     Y,  GOTOR(MC[- 1])
219     U,  S '*' 16, Z                  " SPECIFICATOR?
220     N,  S - 8
221     U,  S - '1610', Z                " SWITH?
222     N,  JUMP(7)
223         F = '2020'                   " PARC := SWITCH
224         S = M[B - 4]                 " VALUE INDICATIE
225         S '*' '20000', Z             " ¬ BIJ VALUE?
226     Y,  GOTOR(MC[- 1])
227         S = - 79
228         SUBC(:MT[48])                " BOODSCHAP
229         JUMP(52)
230     U,  S - '1010', Z                " STRINGSPEC? JEIGENLIJK NON TYPE
231     Y,  F = '4040'                   " PARC := STRING
232     Y,  JUMP(- 9)
```

```
233     U,  S - '1410', Z                   " PROCEDURE?
234     N,  JUMP(6)
235         F = '2000'                      " PARC := PROCEDURE
236         S = M[B - 4]
237         S '*' '20000', Z                " ¬ BIJ VALUE?
238     N,  S = - 79

239                                                                  " 7,6
240                                                                  " HTRANSN$ - 2
241     N,  SUBC(:MT[37])                   " BOODSCHAP
242         JUMP(3)
243     U,  S - '1210', Z                   " ARRAY
244     N,  JUMP(5)
245         F = '1000'                      " PARC := ARRAY
246         S = M[B - 6]                    " UNDERTOP
247     U,  S '*' 16, Z                     " ¬ SPECIFICATOR?
248     N,  S - 8
249         JUMP(4)
250     U,  S - '2010', Z                   " LABEL?
251     Y,  F = '220'                       " PARC := LABEL
252     Y,  JUMP(31)
253         F = '400'                       " PARC := VARIABLE
254     U,  S - '110', Z                    " REAL?
255     Y,  F + 2                           " PC := PC + REAL
256     Y,  JUMP(9)
257     U,  S - '310', Z                    " INTEGER
258     Y,  F + 1                           " PC := PC + INTEGER
259     Y,  JUMP(6)
260     U,  S - '510', Z                    " BOOLEAN?
261     Y,  F + 8                           " PC := PC + BOOLEAN
262     Y,  JUMP(3)
263         S - '710', Z                    " COMPLEX?
264     Y,  F + 4                           " PC := PC + COMPLEX
265     N,  F + 32                          " PC := PC + NONTYPE
266         S = M[B - 6]                    " UNDERTOP
267         S - '2210', Z                   " OWN?
268     N,  S = M[B - 7]                    " TWOUNDERTOP
269     N,  S - '2210', Z                   " OWN?
270     N,  JUMP(13)
271         S = G
272     U,  S '*' 514, Z                    " ¬(ARRAY ∨ REAL)?

273                                                                  " 7,6
274                                                                  " HTRANSN$ - 3
275 N,  S = 2
276  Y,  S '*' 4, Z                         " (¬ COMPLEX)? ALS COMPLEX DAN S := 4
277  Y,  S = 1
278      HOWNCOUNTER + S
279      F + 64                             " PC := PC + OWN
280      JUMP(5)                            " EINDE SUBROUTINE 46
281      HFOUT[HA3] = S                     " SUBROUTINE BOODSCHAP
282      B + 2
283      S = 9
284      SE73
285      HBOODSCHAP
286      S = MC[- 1]                        " EINDRIEDEL
287      S '*' - '77000'
288      MC = S
289      S = :MT[0]
290      S '*' '77000'
```

```
291          $ + MC[- 1]
292          GOTO#($)                          " EN EINDE SUBROUTINES
293          $ = 2
294          PLUS$(HTELLER[HA3])
295          JUMP(41)
296          $ = 1                             " BOOKVALUE
297          $ + HLRP[HA3]
298          HTELLER[HA3] = $
299      U,  $ - HTNS[HA3], Z
300      Y,  JUMP(26)
301          G = - $
302          $ = :HN$, Z
303          SUBC(MS)
304          $E39
305          G - HCIN[HA3], Z
306      N,  JUMP(17)

307                                                                  " 7.6
308                                                                  " HTRANSN$ - 4
309          F = - 1
310          G - HTELLER[HA3]
311          $ = :HN$, Z
312          SUBC(MS)
313          $E39
314          F - '10000', Z                    " NOG NIET GEBOEKT
315      N,  $ = - 78
316      N,  JUMP(13)
317          F = - 1
318          G - HTELLER[HA3]
319          $ = :HN$, Z
320          SUBC(MS)
321          SE38
322          F = '30000'                       " FORMAL BK VALUE
323          DO(MC[- 1])
324          $ = 18
325          JUMP(- 110)
326          $ = 2
327          PLUSS(HTELLER[HA3])
328          JUMP(- 28)
329          $ = - 77
330          HFOUT = $
331          B + 2
332          $ = 9
333          $E73
334          WBOODSCHAR                        " KOMT TERUG
335          JUMP(- 12)
336          $ = HLRP[HA3]                     " BOOKSREC
337          $ + 1
338          HTELLER[HA3] = $
339      U,  $ - HTNS[HA3], Z
340      Y,  JUMP(30)

341                                                                  " 7.6
342                                                                  " HTRANSN$ - 5
343          G = - $
344          $ = :HN$, Z
345          SUBC(MS)
346          SE39
347          G - HCIN[HA3], Z
348      N,  JUMP(- 52)
```

```
349          F = - 1
350          G - HTELLER[HA3]
351          S = :HNS, Z
352          SUBC(MS)
353          SE39
354          MC = G
355          F - '10000', Z                  " FORMAL NOT BY VALUE?
356      N,  F - '20000', Z                  " FORMAL BY VALUE?
357      N,  JUMP(11)
358          F = - 1
359          G - HTELLER[HA3], Z
360          S = :HNS, Z
361          SUBC(MS)
362          SE38
363          SUBC(:MT[- 141])                " G := PARCODE
364          G + M[B - 3]
365          JUMP(11)
366          B - 1
367          S = 23
368          JUMP(- 151)
369          B - 1
370          S = - 75
371          SUBC(:MT[- 87])                 " BOODSCHAP
372          JUMP(- 6)
373          S = - 76
374          JUMP(- 4)

375                                                                  " 7,6
376                                                                  " HTRANSNS - 6
377          MA = B
378          JUMP(- 92)
379          S = - G
380          S '+' '20 000'
381          S '*' '30 001', Z               " FORMAL INTEGER NOT BY VALUE
382      Y,  F + 1                           " MAAK ER REAL VAN
383          DO(MC[- 11])
384          JUMP(- 17)

385                                                                  " 7.7
386                                                                  " 7.7
387                                                                  " HBLOCK INT
388 HBLOCK INT(31)        Block introduction
389          A = 4
390          S = 7
391          SE18                            " CREATE DISPLAY
392          S = 2                           " IS CORRECT ALLEEN LEFTHAND
393          SE1                             " RUIMTE VOOR ANON VRAGEN
394          G = - HTNS
395          S = :HNS, Z
396          SUBC(MS)
397          SE38
398          G = HLRP
399          DO(MC[ - 1])
400          S = HTNS
401          HLRP = S
402          S + 1
403          HTNS = S
404          S = - HERRORFOUND, R
405      N,  JUMP(10)
406          G = - HNEXTBLOCK
```

```
407          $ = :HBL, Z
408          $UBC(MS)
409          SE38
410          $ = 1
411          PLUS$(HCBH)
412          G = - $
413          DO(MC[ - 1])
414          $ = 3
415          HNEXTBLOCK + $
416          $ = 29
417          GBILL + $, P
418          $E115
419          $E71

420                                                          " 7.8
421                                                          " HTRANSNL - 0
422 HTRANSNL(83)        transport to namelist
423          A = 4
424          $ = 7
425          $E18
426          $ = 3
427          $E1
428          $ = - HERRORFOUND, P
429      N,  JUMP(65)
430          G = - HNEXTBLOCK
431          P + 3
432          HTELLER = - G
433          $ = :HBL, Z
434          $UBC(MS)
435          $E39
436          M[B] = G. P
437          G = - HTELLER
438      Y,  JUMP(- 8)
439          B + 1
440          $ = :HBL, Z
441          $UBC(MS)
442          $E38                        " MAXSPAN = 3 EN BLIJFT DIT
443          G = - M[B - 3]
444          DO(MC[ - 1])
445          B - 1
446          P = - 1
447          G - HTELLER
448          $ = :HBL, Z
449          $UBC(MS)
450          $E38
451          G = HTNL
452          DO(MC[ - 1])
453          P = - 2
454          G - HTELLER

455                                                          " 7.8
456                                                          " HTRANSNL - 1
457          $ = :HBL, Z
458          $UBC(MS)
459          $E38
460          $ = HTNS                    " HTNS EN HLRP VERSCHILLEN
461          $ - HLRP                    " EEN TWEEVOUD + 1
462          BU$(1)                      " S = (TNS - LRP - 1)/2
463          G = $
464          DO(MC[ - 1])
```

```
465          $ = HLRP
466          $ + 1
467          HTELLER = $
468      U,  $ - HTNS, Z
469      Y,  JUMP(25)
470          G = - HTNL
471          $ = :HNL, Z
472          $UBC(MS)
473          $E38
474          G = - HTELLER
475          $ = :HNS, Z
476          $UBC(MS)
477          $E39
478          DO(MC[ - 1])
479          F = - 1
480          G - HTNL
481          $ = :HNL, Z
482          SUBC(MS)
483          $E38
484          F = - 1
485          G - HTELLER
486          $ = :HNS, Z
487          SUBC(MS)
488          $E39

489                                                  " 7.8
490                                                  " HTRANSNL - 2
491          DO(MC[ - 1])
492          $ = 3
493          HTNL + $
494          $ = 2
495          PLUS$(HTELLER)
496          JUMP( - 27)
497          $ = - 1
498          HCBH + $
499          G = - HLRP
500          HTNS = - G
501          $ = :HNS, Z
502          $UBC(MS)
503          $E39
504          HLRP = G
505          $ = 113
506          GBILL + $, R
507          $E115
508          $E71
509          0                    " OM TE ZORGEN DAT $E71 NIET LAATSTE OPDRACHT VAN SEGMENT WORDT

510 delimiter texts                                  " 7.9
511                                                  " BEGIN - 0
512 HBEGIN(12)
513          $ = - M[B - 1]       " - TOP
514      U,  $ '*' 1, Z           " STAT ST ADM?
515      N,  $ + '40', Z          " UNIVERSE?
516      Y,  JUMP(2)
517          $E33
518          HAL1                 " AL1
519          $ = '301'            " BEGIN UNKNOWN
520          MC = $
521      U,  B - HBOVENGRENS[HA3], Z
522      Y,  SUBC(:HSTACK)
```

one for each delimiter

```
            SE33
            HCYCLE1

                                                                           " 7,10
                                                                           " HCOLON - 0
HCOLON(45)
            S = - M[B - 1]
      U,    S + '1704', Z                       " TOP = IDENTIFIER?
      N,    JUMP(34)                            " DAN NOG NUM. OP. MOGELIJK
            S = - M[B - 2]
      U,    S '*' 1, Z                          " STAT ST ADM?
      Y,    JUMP(2)
      U,    S + '40', Z                         " UNIVERSE?
      N,    JUMP(21)
            S = '2010'                          " LABEL
            M[B - 1] = S
            S = MT[3]                           " TRANSPORT TO NAMESTACK
            GL0 = S
            SE33
            HTRANSNS
            HCOLON[15]                          " UNSTACK
            B - 1
      U,    B - HONDERGRENS[HA3], Z
      Y,    SUBC(:HUNSTACK)
            S = M[B - 1]
      U,    S - '301', Z                        " DISALLOW DECL
      N,    S - '1301', Z                       " BEGIN UNKNOWN?
      Y,    S = '200'                           " BEGIN DECL?
      Y,    M[B - 1] + S
            S = HDRUM[HA3], P
      N,    S = HREGLASTID[HA3]
      N,    HREGPOSID[HA3] = S
      N,    S = HCIN[HA3]
      N,    HPOSID[HA3] = S
            JUMP(6)
      U,    S + '7604', Z                       " PROCEDURE RESULT?
      Y,    JUMP(2)
      U,    S + '640', Z                        " FORMAL PARAMETER PART?

                                                                           " 7,10
                                                                           " HCOLON - 1
      N,    JUMP(7)                             " DAN IS DE ID NOG ALS NUM. OP. TEGEBRUIKEN
            S = '140'                           " FATCOMMA
            M[B - 1] = S
            SE33
            HCYCLE1
      U,    S '*' '404', Z                      " NUMERICAL OPERAND(TOP)?
      N,    JUMP(4)                             " NU FOUT
            S = - M[B - 2]
      U,    S + '2502', Z                       " ARRAY OPEN?
      Y,    S = '11102'                         " LOWERBOUND
      Y,    JUMP( - 9)
            SE33                                " AL2
            HAL2

                                                                           " 7,11
                                                                           " HBECOMES - 0
HBECOMES(40)
            S = M[B - 1]
      U,    S - '3704', Z                       " SUBSCRIPTED VAR?
```

```
580     Y,  JUMP(7)
581     U,  S - '1704', Z                       " IDENTIFIER?
582     Y,  JUMP(2)
583         SE33
584         HAL3
585         S = - M[B - 2]
586     U,  S + '1610', Z                       " SWITCH?
587     Y,  JUMP(20)
588     Y,  S = - M[B - 2]
589     U,  S '*' 1, Z                          " STATSTADM?
590     Y,  S = '302'                           " LEFTASSIGNMENT
591     Y,  JUMP(13)                            " NAAR SLOT
592     U,  S + '302', Z                        " LEFTASS?
593     N,  S + '1702', Z                       " ALG OPEN?
594     N,  JUMP(4)
595         B - 1
596     U,  B - HONDERGRENS[HA3], Z
597     Y,  SUBC(:HUNSTACK)
598         JUMP(7)
599         S - '1242', Z                       " FOR?
600     N,  JUMP( - 18)
601         B - 1
602     U,  B - HONDERGRENS[HA3], Z
603     Y,  SUBC(:HUNSTACK)
604         S = '10502'                         " FORBECOMES
605         M[B - 1] = S
606         SE33
607         HCYCLE1
608         B - 1
609     U,  B - HONDERGRENS[HA3], Z

610                                             " 7.11
611                                             " HBECOME$ - 1
612     Y,  SUBC(:HUNSTACK)
613         S = MT[3]
614         GL0 = S
615         SE33
616         HTRANSNS
617         HBECOMES[38]
618         S = '11502'
619         JUMP( - 13)

620                                             " 7.12
621                                             " HFORGOTO
622 HFORGOTO(14)
623         S = - M[B - 1]                      " - TOP
624         S '*' 1, Z                          " STAT START ADM?
625     Y,  JUMP(2)
626         SE33
627         HAL1
628         S = HNEXTDEL[HA3]
629         S - 82, Z                           " EQB?
630     Y,  S = '440'                           " FOR
631     N,  S = '502'                           " GOTO
632         HC = S
633     U,  B - HBOVENGRENS[HA3], Z
634     Y,  SUBC(:HSTACK)
635         SE33
636         HCYCLE1
```

```
637                                                                                  " 7,13
638                                                                                  " MSQUAREOPEN
639 MSQUAREOPEN(29)
640         S = M[B - 1]                          " TOP
641         S - '1704', Z                         " IDENTIFIER?
642     N,  JUMP(24)
643         S = M[B - 2]                          " UNDERTOP
644     U,  S '*' 3, Z                            " ¬(STATSTARTADM ∨ EXPSTARTADM)?
645     N,  JUMP(2)
646     U,  S - '440',Z                           "FOR?
647     N,  JUMP(4)
648         S = '1102'                            " SUBSCRIPT OPEN
649         M[B - 1] = S
650         SE33
651         MCYCLE1
652         S - '1210', Z                         " ARRAY?
653     N,  JUMP(13)
654         B - 1
655     U,  B - MONDERGRENS[MA3], Z
656     Y,  SUBC(:MUNSTACK)
657         S = 1
658         MNAS[MA3] + S
659         S = MT[3]
660         GL0 = S
661         SE33
662         MTRANSNS
663         MSQUAREOPEN[24]
664         S = '2502'                            " ARRAY OPEN
665         B + 1
666         JUMP(-18)
667         SE33
668         MAL5

669                                                                                  " 7.14
670                                                                                  " MROUNDOPEN - 0
671 MROUNDOPEN(81)
672         S = - M[B - 1]                        " TOP
673     U,  S '*' 2, Z                            " EXPRESSING START ADM?
674     N,  JUMP(6)
675         S = '1702'                            " ALGEBRAIC OPEN
676         MC = S
677     U,  B - MBOVENGRENS[MA3], Z
678     Y,  SUBC(:MSTACK)
679         SE33
680         MCYCLE1
681     U,  S + '1704', Z                         " IDENTIFIER?
682     N,  JUMP(29)
683         S = M[B - 2]                          " UNDERTOP
684     U,  S '*' 3, Z                            " ¬(STATSTART ∨ EXPRSTART)?
685     N,  S = '2302'                            " PARAMETER OPEN
686     N,  M[B - 1] = S
687     N,  JUMP(- 9)
688         S - '1410', Z                         " PROCEDURE?
689     N,  JUMP(55)                              " DAN FOUT
690         B - 1
691     U,  B - MONDERGRENS[MA3], Z
692     Y,  SUBC(:MUNSTACK)
693         S = MT[3]
694         GL0 = S
695         SE33
```

```
696         MTRANSNS
697         MROUNDOPEN[26]
698         B - 1
699     U,  B - MONDERGRENS[MA3], Z
700     Y,  SUBC(:MUNSTACK)
701         $ = MDRUM[MA3], F
702     N,  $ = MREGLASTID[MA3]

703                                                                  " 7.14
704                                                                  " MROUNDOPEN - 1
705     N,  MREGPOSID[MA3] = $
706     N,  $ = MCIN[MA3]
707     N,  MPOSID[MA3] = $
708         B + 2
709         $ = 9
710         SE73
711         MBLOCKINT
712         $ = '340'                       " FORMAL OPEN
713         JUMP(31)
714         $ + '140', Z                    " FATCOMMA?
715     N,  JUMP(31)                        " DAN FOUT
716         $ = - MERRORFOUND[MA3], F
717     N,  JUMP(20)
718         SUBC(:MT[30])                   " G := TEXTPASS2[WIJZER - 2]
719         F + 602, Z                      " REPRESENTATIE VAN COLON IN TEXTPASS2
720     N,  $ = 4
721     Y,  $ = 2
722         MWIJZER - $
723         SUBC(:MT[25])                   " G := TEXTPASS2[WIJZER - 2]
724         F + 7799, Z                     " NLCR?
725     Y,  JUMP(- 5)
726         SUBC(:MT[22])                   " G := TEXTPASS2[WIJZER - 2]
727         F + 611, Z                      " ROUNDCLOSE?
728     Y,  $ = 1
729     N,  $ = 3
730         MINS(MWIJZER)
731         $ - 1
732         G = - $
733         $ = :MTEXTPASS2, Z
734         SUBC(MS)
735         SE38
736         F = - 599                       " COMMA
737         DO(MC[- 1])

738                                                                  " 7.14
739                                                                  " MROUND OPEN - 2
740         B - 1
741     U,  B - MONDERGRENS[MA3], Z
742     Y,  SUBC(:MUNSTACK)
743         $ = M[B - 1]
744         $ - '7604', Z                   " PROCEDURERESULT
745     Y,  $ = '2302'                      " PARAMETEROPEN
746     N,  $ = '340'                       " FORMAL OPEN
747         M[B - 1] = $
748         JUMP(- 66)
749         SE33
750         MAL6
751         F = 2                           " SUBROUTINE G := TEXTPASS2[WIJZER - 2]
752         G - MWIJZER
753         $ = :MTEXTPASS2, Z
```

```
754           SUBC(MS)
755           SE39
756           GOTOR(MC[- 1])                    " EINDE

757                                                                    " 7.15
758                                                                    " HARITHOP - 0
759 HARITHOP(30)
760           $ = - M[B - 1]
761       U,  $ '*' 2, Z                        " EXPR STARTADM?
762       N,  JUMP(20)
763           $ + '5002', Z                     " LEFTNUMERICAL?
764       Y,  JUMP(23)                          " DAN FOUT
765           G = HNEXTDEL[HA3]
766           F - 64, Z                         " PLUS?
767       Y,  $ = 1
768       Y,  HWIJZER - $
769       Y,  JUMP(6)
770           G - HWIJZER
771           $ = :HTEXTPASS2, Z
772           SUBC(MS)
773           SE38
774           F = - 5236                        " NEG
775           DO(MC[ - 1])
776           $ = '5002'                        " LEFTNUMERICAL
777           MC = $
778       U,  B - HBOVENGRENS[HA3], Z
779       Y,  SUBC(:HSTACK)
780           SE33
781           HCYCLE1
782           $ = - M[B - 1]                    " VERSPRING PUNT * : / EN +
783           $ '*' '404', Z                    " NUMERICAL OPERAND?
784       Y,  $ = - M[B - 2]
785       Y,  $ '*' 2, Z
786       Y,  B - 1
787       Y,  JUMP( - 12)
788           SE33
789           HAL12

790                                                                    " 7.16
791                                                                    " HRELATION
792 HRELATION(12)
793           $ = - M[B - 1]
794           $ '*' '404', Z                    " NUMERICAL OPERAND?
795       N,  JUMP(7)
796           $ = - M[B - 2]
797           $ '*' '202', Z                    " BOOLEAN START ADM?
798       N,  JUMP(4)
799           $ = '6002'                        " LEFT RELATION
800           M[B - 1] = $
801           SE33
802           HCYCLE1
803           SE33
804           HAL7

805                                                                    " 7.17
806                                                                    " HNON
807 HNON(16)
808           $ = - M[B - 1]
809       U,  $ '*' '202', Z                    " BOOLEAN START ADM?
810       N,  JUMP(11)
```

```
811     U,  $ + '5602', Z                   " NON?
812     Y,  JUMP(9)
813         $ + '6602', Z                   " LEFT BOOLEAN?
814         $ = '5602'                      " NON
815     Y,  M[B - 1] = $
816     Y,  JUMP(3)
817         MC = $
818     U,  B = HBOVENGRENS[MA3], Z
819     Y,  SUBC(:HSTACK)
820         SE33
821         HCYCLE1
822         SE33
823         HAL8

824 binary boolean operand                                   " 7.18
825                                                         " HB!BOP
826 HB!BOP(11)
827         $ = - M[B - 1]
828         $ '*' '1004', Z                 " BOOLEAN OPERAND?
829     Y,  $ = - M[B - 2]
830     Y,  $ '*' '202', Z                  " BOOLEAN STARTADM?
831     N,  JUMP(4)
832         $ = '6602'                      " LEFT BOOLEAN
833         M[B - 1] = $
834         SE33
835         HCYCLE1
836         SE33
837         HAL9

838                                                         " 7.19
839                                                         " HTRUE
840 HTRUE(28)
841         $ = - M[B - 1]
842     U,  $ '*' '202', Z                  " BOOLEAN START ADM?
843     N,  JUMP(16)
844         $ = '11004'                     " LOGICAL RESULT
845         MC = $
846     U,  B = HBOVENGRENS, Z
847     Y,  SUBC(:HSTACK)
848         F = 1
849         G = HW!JZER
850         $ = :HTEXTPASS2, Z
851         SUBC(MS)
852         SE38
853         $ = HNEXTDEL[MA3]
854         $ - 116, Z                      " IRUE?
855     Y,  F = 4
856     N,  F = 8
857         DO(MC[- 1])
858         SE33
859         HCYCLE1
860         $ + '6002', Z
861     Y,  $ = 13
862     N,  $ = 0
863         HFOUT[MA3] = $
864         MA = B
865         $ = 9
866         B + 2
867         SE73
868         HBOODSCHAR
```

```
869                                                                    " 7.20
870                                                                    " WIF
871 WIF(18)
872         $ = - M[B - 1]
873     U,  $ '*' '101', Z                  " STAT START ADM ^ - STAT THEN
874     N,  JUMP(10)
875     U,  $ + '301', Z                    " BEGIN UNKNOWN?
876     N,  $ + '1301', Z                   " BEGIN DECLARATION?
877     Y,  $ = '200'
878     Y,  M[B - 1] + $
879         $ = '3302'                      " STATEMENT IF
880         MC = $
881     U,  B - HBOVENGRENS[WA3], Z
882     Y,  SUBC(:WSTACK)
883         SE33
884         WCYCLE1
885         $ '*' '102', Z                  " EXPRESSION START ADM ^ IF ???
886     Y,  $ = '3702'                      " EXPRESSION IF
887     Y,  JUMP(- 8)
888         SE33
889         WAL10

890                                                                    " 7.21
891                                                                    " WTWEN
892 WTWEN(27)
893         $ = - M[B - 1]
894         $ '*' '1004', Z                 " BOOLEAN OPERAND?
895     N,  JUMP(22)
896         $ = M[B - 2]
897     U,  $ - '3702', Z                   " EXPRESSION IF
898     N,  JUMP(16)
899         $ = - HERRORFOUND, P
900     N,  JUMP(7)
901         F = 1
902         G = HWIJZER
903         $ = :HTEXTPASS2, Z
904         SUBC(MS)
905         SE38
906         F = - 601                       " ETHEN
907         DO(MC[ - 1])
908         $ = '4202'                      " EXPRESSION THEN
909         M[B - 2] = $
910         B - 1
911     U,  B - HONDERGRENS[WA3], Z
912     Y,  SUBC(:WSTACK)
913         SE33
914         WCYCLE1
915         $ - '3302', Z                   " STATEMENT IF?
916     Y,  $ = '2001'                      " STATEMENT THEN
917     Y,  JUMP( - 9)
918         SE33
919         WAL11

920                                                                    " 7.22
921                                                                    " WELSE
922 WELSE(34)
923         $ = - M[B - 1]
924     U,  $ '*' 4, Z                      " OPERAND?
925     N,  JUMP(18)
```

```
926          $ = M[B - 2]
927          S - '4202', Z                    " EXPRESSION THEN
928      N,  JUMP(26)
929          $ = '4702'                       " EXPRESSION ELSE
930          MC = $
931      U,  B - HBOVENGRENS[HA3], Z
932      Y,  SUBC(:HSTACK)
933          $ = - HERRORFOUND[HA3], B
934      N,  JUMP(7)
935          F = 1
936          G - HWIJZER
937          $ = :HTEXTPASS2, Z
938          SUBC(MS)
939          SE38
940          F = - 1117                       " EELSE
941          DO(MC[ - 1])
942          SE33
943          HCYCLE1
944          $ + '1240', Z                    " STATEMENT?
945      Y,  $ = M[B - 2]
946      Y,  S - '2001', Z                    " STATEMENT THEN?
947      N,  JUMP(7)
948          B - 1
949      U,  B - HONDERGRENS[HA3], Z
950      Y,  SUBC(:HUNSTACK)
951          B - 1
952      U,  B - HONDERGRENS[HA3], Z
953      Y,  SUBC(:HUNSTACK)
954          JUMP( - 13)
955          SE33
956          HAL13

957                                           " 7.23
958                                           " HSOUCLOSE
959  HSOUCLOSE(39)
960          $ = - M[B - 1]
961          $ '*' '404', Z                   " NUMERICAL OPERAND?
962      N,  JUMP(34)
963          $ = M[B - 2]
964      U,  $ - '1102', Z                    " SUBSCRIPT OPEN?
965      N,  JUMP(7)
966          $ = '3704'                       " SUBSCRIPTED VARIABLE
967          M[B - 2] = $                     " UNDERTOP
968          B - 1
969      U,  B - HONDERGRENS[HA3], Z
970      Y,  SUBC(:HUNSTACK)
971          SE33
972          HCYCLE1
973          S - '11102', Z                   " TOWERBOUND?
974      N,  JUMP(22)
975          S = - HNAS[HA3]
976          $ + S                            " NS[TNS - 2 * NAS + 1] := NS[] + NAS * 2 + 15
977          S + 1
978          $ + HTNS[HA3]
979          G = - S
980          MC = S
981          S =:HNS, Z
982          SUBC(MS)
983          SE38
984          G = - M[B - 3]
```

```
 985          S = :MNS, Z
 986          SUBC(MS)
 987          SE39
 988          S = HNAS[HA3]
 989          LUS(15)
 990          G + S
 991          DO(MC[ - 1])

 992                                                                  " 7.23
 993                                                                  " HSQUCLOSE
 994          B - 2                          " EEN NORMALE EN EEN " UNSTACK "
 995      U,  B - HONDERGRENS, Z
 996      Y,  SUBC(:HUNSTACK)
 997          S = '240'                      " ARRAY SEGMENT
 998          JUMP( - 30)
 999          SE33
1000          HAL14

1001                                                                 " 7.24
1002                                                                 " HROCLOSE - 0
1003 HROCLOSE(35)
1004          S = - M[B - 1]
1005      U,  S '*' 4, Z                     " OPERAND(TOP)?
1006      N,  JUMP(30)
1007          S = M[B - 2]
1008      U,  S - '1702', Z                  " ALGEBRAIC OPEN?
1009      N,  JUMP(9)
1010          S = - M[B - 1]
1011      U,  S '*' '104', Z                 " DESIGNATIONAL OPERAND(TOP)?
1012      Y,  S = - '5704'                   " LABELVALUE
1013          M[B - 2] = - S
1014          B - 1
1015      U,  B - HONDERGRENS[HA3], Z
1016      Y,  SUBC(:HUNSTACK)
1017          SE33
1018          HCYCLE1
1019      U,  S - '2302', Z                  " PARAMETEROPEN?
1020      Y,  S = - '7604'
1021      Y,  JUMP(- 9)
1022      U,  S - '340', Z                   " FORMAL OPEN?
1023      Y,  S = M[B - 1]
1024      Y,  S - '1704', Z                  " IDENTIFIER?
1025      N,  JUMP(11)
1026          S = '340'                      " FORMAL OPEN OOK OP TOP ZETTEN
1027          M[B - 1] = S                   " VOOR DE HTRANSNS
1028          S = MT[3]
1029          GL0 = S
1030          SE33
1031          HTRANSNS
1032          HROCLOSE[29]
1033          S = 1
1034          HNOF + S
1035          S = - '640'                    " FORMAL PARAMETER PART
1036          JUMP(- 24)
1037          SE33
1038          HAL15
```

```
 0                                                                          " 7,25
 1                                                                          " MEND - 0
 2 MEND(95)
 3          $ = M[B - 1]
 4          $ - '1240', Z                    " STATEMENT?
 5      N,  JUMP(72)
 6          $ = M[B - 2]
 7      U,  $ - '40', Z                      " UNIVERSE?
 8      N,  $ - '3501', Z                    " PROCEDURE BODY?
 9      Y,  JUMP(68)
10          B - 1
11      U,  B - MONDERGRENS[MA3], Z
12      Y,  $UBC(:MUNSTACK)
13          $ = M[B - 1]
14      U,  $ - '1501', Z                    " BEGINBLOCK?
15      N,  $ - '1301', Z                    " BEGINDEC?
16      N,  JUMP(4)
17          B + 2
18          $ = 9
19          SE73
20          MTRANSNL
21          $ = '1240'                       " STATEMENT
22          M[B - 1] = $
23          MA = B                           " WP ZETTEN VOOR AANROEPEN VAN MSYM
24          $ = M[B - 2]
25      U,  $ - '40', Z                      " UNIVERSE?
26      N,  JUMP(7)
27          $UBC(:MT[52])                    " $ := NEXTDEL := MSYM
28      U,  $ - 104, Z                       " BEGIN?
29      N,  $ - 105, Z                       " END?
30      N,  JUMP(- 4)
31          $UBC(:MT[61])                    " RANGDEL EN REGELDEL ZETTEN
32          $ = 33
33          JUMP(38)
34      U,  $ - '1340', Z                    " INTERUNIVERSE?

35                                                                         " 7,25
36                                                                         " MEND - 1
37      N,  JUMP(4)
38          $UBC(:MT[43])                    " NEXTDEL := MSYM
39          $UBC(:MT[55])                    " RANGDEL REGELDEL
40          SE33
41          MBACKRAILS
42          MCOMPOUND[MA3] = - B             " COMMENT ACHTER END GAAN LEZEN
43          $UBC(:MT[38])                    " LEES NEXTDEL := MSYM
44      U,  $ - 63, P
45      N,  JUMP(2)
46      U,  $ - 120, P
47      N,  $UBC(:MT[47])                    " RANGDEL REGELDEL
48          $ - 91, Z                        " PUNTKOMMA?
49      N,  $ - 5, Z                         " ELSE?
50      N,  $ - 9, Z                         " END?
51      N,  JUMP(7)
52          $ = MNEXTDEL[MA3]
53          MVOORSYM[MA3] = $
54          MVERDERLEZEN[MA3] = - B
55          $ = 1
56          MRANGNR[MA3] - $
57          SE33
```

```
58          HCYCLE1
59          $ + 1, Z                        " BEGIN?
60      Y,  $ = 81
61      Y,  JUMP(12)                        " BOODSCHAP UITSTUREN
62      U,  $ = - HCOMFOUND[HA3], B
63      N,  JUMP(- 21)
64          $ - 240, Z                      " := ?
65      Y,  $ = 88
66      Y,  HNEXTDEL[HA3] = $
67      N,  $ + 263, Z                      " GOTO ?
68      N,  $ - 1, Z                        " EOR ?

69                                                                  " 7,25
70                                                                  " HEND - 2
71      N,  $ - 12, Z                       " IF ?
72      N,  $ + 4, Z                        " : ?
73      N,  JUMP(- 29)
74          HCOMFOUND[HA3] = B
75          $ = - 89
76          HFOUT[HA3] = $
77          B + 2
78          $ = 9
79          SE73
80          HBOODSCHAR
81          JUMP(- 37)
82          SE33
83          HAL16
84          B + 2                           " SUBROUTINE $ := NEXTDEL := H$YM
85          $ = 9                           " WR IS REEDS AANGEPAST
86          SE73
87          H$YM
88          $ = MC[- 1]
89          $ '*' - HRAG
90          MC = $
91          $ = :MT[0]
92          $ '*' HRAG
93          M[B - 1] + $
94          $ = G
95          HNEXTDEL[HA3] = $
96          GOTOR(MC[- 1])
97          G = HREGELNR[HA3]               " SUBROUTINE HRANGDEL EN REGELDEL
98          HREGELDEL[HA3] = G
99          G = HRANGNR[HA3]
100         HRANGDEL[HA3] = G
101         GOTOR(MC[- 1])

102                                                                 " 7.26
103                                                                 " HSEMICOLON - 0
104 HSEMICOLON(191)
105         $ = - M[B - 1]
106     U,  $ + '1240', Z                   " STATEMENT?
107     N,  JUMP(26)
108         B - 1
109     U,  B - HONDERGRENS[HA3], Z
110     Y,  SUBC(:HUNSTACK)
111         $ = - M[B - 1]
112     U,  $ + '3501', Z                   " PROCEDURE BODY?
113     N,  JUMP(13)
114         B + 2
115         $ = 9
```

```
116          SE73
117          HTRANSNL
118          B + 2
119          S = 9
120          SE73
121          HTRANSNL
122          B - 1
123     U,   B - HONDERGRENS[HA3], Z
124     Y,   SUBC(:HUNSTACK)
125          SE33
126          HCYCLE1
127     U,   S + '40', Z                    " UNIVERSE?
128     Y,   JUMP(155)                      " DAN FOUT
129     U,   S + '301', Z                   " DISSALLOW DECL
130     N,   S + '1301', Z
131     Y,   S = '200'
132     Y,   M[B - 1] + S
133          JUMP(- 9)
134     U,   S + '240', Z                   " ARRAYSEGMENT?
135     N,   JUMP(13)
136          B - 1

137                                                          " 7,26
138                                                          " HSEMICOLON - 1
139     U,   B - HONDERGRENS[HA3], Z
140     Y,   SUBC(:HUNSTACK)
141          S = M[B - 3]                   " TWOUNDERTOP
142          S - '2210', Z                  " OWN?
143     N,   JUMP(3)
144          B - 1
145     U,   B - HONDERGRENS[HA3], Z
146     Y,   SUBC(:HUNSTACK)
147          B - 1
148     U,   B - HONDERGRENS[HA3], Z
149     Y,   SUBC(:HUNSTACK)
150          JUMP(- 27)                     " UNSTACK EN GOTO CYCLE
151     U,   S + '640', Z                   " FORMAL PARAMETERPART?
152     N,   JUMP(17)
153          S = '740'                      " LEFTHEADING
154          M[B - 1] = S
155          F = 1
156          G - HLRP[HA3]
157          S = :MN$, Z
158          SUBC(MS)
159          SE38
160          F = 1
161          G - HLRP[HA3]
162          S = :MN$, Z
163          SUBC(MS)
164          SE39
165          JUMP(122)
166          LUS(21)
167          G + S
168          DO(M¢[- 1])
169          JUMP(- 43)
170     U,   S '*' '104', Z                 " DESIGNATIONAL OPERAND(TOP)?

171                                                          " 7,26
172                                                          " HSEMICOLON - 2
173     N,   JUMP(114)                      " FOUT
```

```
174          G = M[B - 2]
175          F - '11502', Z                    " SWITCH BECOMES?
176      Y,  JUMP(- 28)
177      U,  $ + '1704', Z                     " IDENTIFIER
178      N,  JUMP(109)                         " DAN FOUT
179          B - 1
180      U,  B - HONDERGRENS[HA3], Z
181      Y,  SUBC(:HUNSTACK)
182          $ = - M[B - 1]
183      U,  $ + '540', Z                      " LEFTDECLARATION?
184      N,  JUMP(4)
185          B - 1
186      U,  B - HONDERGRENS[HA3], Z
187      Y,  SUBC(:HUNSTACK)
188          S = - M[B - 1]
189      U,  S '*' '110', Z                    " TYPE?
190      N,  JUMP(7)
191          $ = MT[3]
192          GLO = S
193          SE33
194          HTRANSNS
195          HSEMICOLON[87]
196          B + 1                             " STACK(EMPTY)(ZEER TIJDELIJK)
197          JUMP(- 55)                        " IE OWN THEN UNSTACK(3) ELSE UNSTACK(2)
198      U,  S '*' '20', Z                     " SPECIFICATOR
199      N,  JUMP(18)
200          $ = MT[3]
201          GLO = $
202          SE33
203          HTRANSNS[155]
204          HSEMICOLON[96]

205                                            " 7.26
206                                            " HSEMICOLON - 3
207          $ = - M[B - 2]
208      U,  $ '*' '120', Z                    " TYPESPEC?
209      N,  S + '1010', Z                     " NONTYPE?
210      N,  JUMP(3)
211          B - 1
212      U,  B - HONDERGRENS[HA3], Z
213      Y,  SUBC(:HUNSTACK)
214          $ = '1140'                        " VALUELIST
215          M[B - 2] = S
216          $ = 1
217          HNOF[HA3] - S, Z
218      N,  JUMP(- 91)                        " UNSTAC EN GOTO CYCLE
219          JUMP(15)
220      U,  $ + '1410', Z                     " PROCEDURE?
221      N,  JUMP(59)
222          $ = MT[2]
223          GLO = $
224          JUMP(- 30)
225          HSEMICOLON[115]
226          $ = HDRUM[HA3], P
227      N,  $ = HCIN[HA3]
228      N,  HPOSID[HA3] = S
229      N,  S = HREGLASTID[HA3]
230      N,  HREGPOSID[HA3] = S
231          B + 2
232          $ = 9
```

```
233         SE73
234         HBLOCKINT
235         B + 2
236         S = 9
237         SE73
238         HBLOCKINT
239                                                                  " 7.26
240                                                                  " HSEMICOLON - 4
241         B - 1
242     U,  B - HONDERGRENS[HA3], Z
243     Y,  SUBC(:HUNSTACK)
244         S = '2501'                          " PROCEDUREHEADING
245         M[B - 1] = S
246         MA = B
247         B + 2
248         S = 9
249         SE73
250         HRUND
251         S = HTELLER[HA3], Z
252     Y,  JUMP(18)                            " DAN NOG PROC HEADING
253         MC = S
254     U,  B - HBOVENGRENS[HA3], Z
255     Y,  SUBC(:HSTACK)
256         S = M[B - 1]
257         S - '1704', Z                       " IDENTIFIER
258     Y,  JUMP(2)
259         SE33
260         HAL27
261         S = HNEXTDEL[HA3]
262         S - 88, Z                           " BECOMES?
263     N,  S - 2, Z                            " :?
264     N,  S - 1, Z                            " SEMICOLON?
265     N,  S - 7, Z                            " ROUNDOPEN?
266     N,  S - 2, Z                            " SQUAREOPEN?
267     N,  JUMP(- 9)
268         S = '3501'                          " PROC BODY
269         M[B - 2] = S
270         JUMP(10)
271         S = HNEXTDEL[HA3]
272         S - 81, Z                           " GOTO?
273                                                                  " 7.26
274                                                                  " HSEMICOLON - 5
275     N,  S - 1, Z                            " EOB?
276     N,  S - 9, Z                            " SEMICOLON?
277     N,  S - 3, Z                            " IE?
278     N,  S - 10, Z                           " BEGIN
279     N,  S + 7, Z                            " COMMENT ?
280     N,  JUMP(- 20)                          " DAN FOUT
281         S = '3501'                          " PROC BODY
282         M[B - 1] = S
283         SE33
284         HCYCLE1[10]
285     U,  S + '1040', Z                       " VALUE?
286     N,  JUMP(7)
287         S = MT[3]
288         GLO = S
289         SE33
290         HTRANSNS[117]
```

```
291          HSEMICOLON[177]
292          $ = '100', R                    " VALUELIST EN ZET CONDITIE IBUE
293          JUMP(- 152)
294          SE33
295          HAL17
296          $ = HNOF[HA3]
297      U,  $ - 31, R
298      N,  JUMP(- 125)
299          $ = 92
300          HFOUT[HA3] = $
301          $ = :MC[- 2]
302          MA = $
303          $ = 9
304          SE73
305          HBOODSCHAR

306                                                                  " 7.27
307                                                                  " HSTEPWHILE
308 HSTEPWHILE(14)
309          E = '7302'                      " PAK WHILE
310          JUMP(1)
311          E = '7502'                      " PAK STEP
312          $ = - M[B - 1]
313      U,  $ '*' '404', Z                  " NUMERICAL OPERAND?
314      N,  JUMP(6)                         " NU FOUT
315          $ = - M[B - 2]
316      U,  $ + '10502', Z                  " FORBECOMES?
317      N,  JUMP(3)                         " NU OOK FOUT
318          M[B - 1] = G
319          SE33
320          HCYCLE1
321          SE33                            " AL20
322          HAL20

323                                                                  " 7.28
324                                                                  " HUNTIL
325 HUNTIL(15)
326          $ = - M[B - 1]
327          $ '*' '404', Z                  " NUMERICAL OPERAND?
328      N,  JUMP(10)
329          $ = M[B - 2]
330          $ - '7502', Z                   " STEP?
331      N,  JUMP(7)
332          B - 1
333      U,  B - HONDERGRENS[HA3], Z
334      Y,  SUBC(:HUNSTACK)
335          $ = '10102'                     " UNTIL
336          M[B - 1] = $
337          SE33
338          HCYCLE1
339          SE33
340          HAL21

341                                                                  " 7.29
342                                                                  " HDO
343 HDO(29)
344          $ = - M[B - 1]
345      U,  $ '*' '404', Z                  " NUMERICAL OPERAND?
346      N,  JUMP(20)
347          G = M[B - 2]
```

```
348          E - '10102', Z                    " UNTIL ?
349      N,  JUMP(4)
350          B - 1
351      U,  B - MONDERGRENS[MA3], Z
352      Y,  SUBC(:HUNSTACK)
353          JUMP(2)
354          E - '400', Z                      " FORBECOMES ?
355      N,  JUMP(11)
356          B - 1
357      U,  B - MONDERGRENS[MA3], Z
358      Y,  SUBC(:HUNSTACK)
359          S = '3101'                        " FORCLAUSE
360          M[B - 1] = S
361          B + 2
362          S = 9
363          SE73
364          MBLOCKINT
365          SE33
366          MCYCLE1
367          S '*' '1004', Z                   " BOOLEAN OPERAND?
368      Y,  S = M[B - 2]
369      Y,  S - '7302', Z                     " WHILE?
370      Y,  JUMP(- 21)
371          SE33
372          MAL22

373                                            " 7,30
374                                            " MCOMMENT - 0
375 MCOMMENT(37)
376          S = - M[B - 1]
377      U,  S '*' 1, Z                        " STAT START ADM?
378      N,  S + '740', Z                      " LEFT HEADING?
379      N,  S + '200', Z                      " VALUE LIST?
380      N,  JUMP(30)
381          S = 1
382          MWIJZER - S
383          MA = B
384          B + 2
385          S = 9
386          SE73
387          MSYM
388          MNEXTDEL[MA3] = G
389          S = G
390      U,  S - 63, P
391      N,  JUMP(6)
392      U,  S - 120, P
393      Y,  JUMP(4)
394          G = MRANGNR[MA3]
395          MRANGDEL[MA3] = G
396          G = MREGELNR[MA3]
397          MREGELDEL[MA3] = G
398      U,  S - 91, Z                         " SEMICOLON?
399      N,  JUMP(2)
400          SE33
401          MCYCLE1
402      U,  S - 104, Z                        " BEGIN?
403      N,  S - 105, Z                        " END?
404      N,  JUMP(- 21)
405          S = 82
406          MFOUT = S
```

```
407          B + 2

408                                                                  " 7.30
409                                                                  " HCOMMENT - 1
410          $ = 9
411          SE73
412          HBOODSCHAR
413          SE33
414          HAL23

415                                                                  " 7.31
416                                                                  " HOWN
417 HOWN(19)
418          $ = M[B - 1]
419      U,  $ - '301', Z                    " BEGINUNKNOWN?
420      N,  JUMP(12)
421          B + 2
422          $ = 9
423          SE73
424          HBLOCKINT
425          $ = '1301'                      " BEGINEECLARATION
426          M[B - 1] = $                    " EN ZET CONDITIE YES
427          $ = '2210'                      " OWN
428          MC = $
429      U,  B - HBOVENGRENS[HA3], Z
430      Y,  SUBC(:HSTACK)
431          SE33
432          HCYCLE1
433          $ - '1301', Z                   " BEGINDECLARATION
434      Y,  JUMP(- 8)
435          SE33
436          HAL24

437                                                                  " 7.32
438                                                                  " HTYPE
439 HTYPE(37)
440          $ = '1610'                      " SWITCH
441          MC = $                          " STACK ALVAST
442          $ = M[B - 2]
443          JUMP(11)
444          $ = '310'                       " INTEGER
445          JUMP(5)
446          $ = '510'                       " BOOLEAN
447          JUMP(3)
448          $ = '710'                       " COMPLEX
449          JUMP(1)
450          $ = '110'                       " REAL
451          MC = $                          " STACK ALVAST
452          $ = M[B - 2]
453      U,  $ - '2210', Z                   " OWN?
454      Y,  JUMP(8)
455      U,  $ - '301', Z                    " BEGIN UNKNOWN?
456      N,  JUMP(10)
457          B + 2
458          $ = 9
459          SE73
460          HBLOCKINT
461          $ = '1301'                      " BEGIN DECLARATION
462          M[B - 2] = $
463      U,  B - HBOVENGRENS[HA3], Z         " BEZEGEL DE STACK VAN 1 OF 11
```

```
464      Y,  SUBC(:HSTACK)
465          SE33
466          HCYCLE1
467      U,  $ - '1301', Z                    " BEGIN DECLARATION?
468      Y,  JUMP(- 6)
469      U,  $ - '1140', Z                    " VALUE LIST?
470      N,  $ - '740', Z                     " LEFT HEADING
471      Y,  $ = '10'
472      Y,  M[B - 1] + S                     " MAAK VAN DECLARATIE  SPECIFICATOR
473      Y,  JUMP(- 11)
474          B - 1                            " MAAK DE STACK VAN 1 OF 11 ONGEDAAN
475          SE33
476          HAL24

477                                                                  " 7,33
478                                                                  " HARRAY = 0
479  HARRAY(42)
480          $ = - M[B - 1]
481      U,  $ '*' '110', Z                   " TYPE ?
482      Y,  JUMP(17)
483      U,  $ '*' '120', Z                   " TYPESPEC ?
484      Y,  JUMP(33)
485      U,  $ + '1301', Z                    " BEGIN DECLARATION?
486      N,  $ + '2210', Z                    " OWN ?
487      Y,  JUMP(8)
488      U,  $ - '1707', Z                    " BEGINUNKNOWN ?
489      N,  JUMP(21)
490          B + 2
491          $ = 9
492          SE73
493          HBLOCKINT
494          $ = '1301'                       " BEGIN DECLARATION
495          M[B - 1] = $
496          $ = '110'                        " REAL
497          MC = $
498      U,  B - HBOVENGRENS[HA3], Z
499      Y,  SUBC(:HSTACK)
500          $ = M[B - 2]
501          $ - '2210', Z                    " OWN ?
502      Y,  HOWNARRAY = B
503          $ = 0
504          HNAS[HA3] = $
505          $ = '1210'                       " ARRAY
506          MC = $
507      U,  B - HBOVENGRENS[HA3], Z
508      Y,  SUBC(:HSTACK)
509          SE33
510          HCYCLE1
511      U,  $ - '1050', Z                    " VALUELIST ?

512                                                                  " 7,33
513                                                                  " HARRAY = 1
514      N,  $ - '1250', Z                    " LEFTHEADING ?
515      N,  JUMP(6)
516          $ = '120'                        " REALSPEC
517          MC = $
518      U,  B - HBOVENGRENS[HA3], Z
519      Y,  SUBC(:HSTACK)
520          $ = '1220'                       " ARRAYSPEC
521          JUMP(- 14)
```

```
522           SE33
523           HAL24
524                                                                  " 7,34
525                                                                  " HPROC - 0
526 HPROC(41)
527           S = - M[B - 1]
528       U,  S + '1301', Z                    " BEGIN DECLARATION?
529       Y,  JUMP(8)
530       U,  S + '301', Z                     " BEGIN UNKNOWN?
531       N,  JUMP(18)
532           B + 2
533           S = 9
534           SE73
535           HBLOCKINT
536           S = '1301'                       " BEGIN DECLARATION
537           M[B - 1] = S
538           S = '1010'                       " NON TYPE
539           MC = S
540       U,  B - HBOVENGRENS, Z
541       Y,  SUBC(:HSTACK)
542           S = 0
543           HNOF[HA3] = S
544           S = '1410'                       " PROCEDURE
545           MC = S
546       U,  B - HBOVENGRENS[HA3], Z
547       Y,  SUBC(:HSTACK)
548           SE33
549           HCYCLE1
550       U,  S '*' '110', Z                   " TYPE?
551       N,  JUMP(5)
552           S = M[B - 2]
553           S - '2210', Z                    " OWN?
554       N,  JUMP(- 13)
555           SE33
556           HAL24
557       U,  S '*' '120', Z                   " TYPE SPEC?
558       Y,  JUMP(7)                          " PROCEDURESPEC
559                                                                  " 7,34
560                                                                  " HPROC - 1
561       U,  S + '1140', Z                    " VALUE LIST
562       N,  S + '740', Z                     " LEFT HEADING
563       N,  JUMP(- 7)
564           S = '1010'
565           MC = S
566       U,  B - HBOVENGRENS[HA3], Z
567       Y,  SUBC(:HSTACK)
568           S = '1420'
569           JUMP(- 23)
570                                                                  " 7.35
571                                                                  " HVALUE
572 HVALUE(9)
573           S = M[B - 1]
574           S - '740', Z                     " LEFT HEADING?
575       N,  JUMP(4)
576           S = '1040'
577           M[B - 1] = S
578           SE33
```

```
579           HCYCLE1
580           SE33
581           HAL29

582                                                                  " 7.36
583                                                                  " HLABSTR
584 HLABSTR(15)   label & string
585           $ = '2020'                        " LABELSPEC
586           JUMP(1)
587           $ = '1020'                        " STRINGSPEC
588           MC = $
589           $ = M[B - 2]
590       U,  $ - '1140', Z
591       N,  $ - '740', Z
592       N,  JUMP(4)
593       U,  B - HBOVENGRENS[HA3], Z
594       Y,  SUBC(:HSTACK)
595           SE33
596           HCYCLE1
597           B - 1
598           SE33
599           HAL24[61]                         " AL24A

600                                                                  " 7.37
601                                                                  " HSTRINGOPEN - 0
602 HSTRINGOPEN(102)   reading string
                       including ~~stripping~~ until matching stringclose
603           $ = M[B - 1]
604           $ - '2302', Z                     " PARAMETER OPEN?
605       Y,  JUMP(7)
606           $ = 0
607           HFOUT[HA3] = $
608           MA = B
609           B + 2
610           $ = 9
611           SE73
612           HBOODSCHAR
613           $ = '1604'                        " UNKNOWN RESULT
614           MC = $
615       U,  B - HBOVENGRENS[HA3], Z
616       Y,  SUBC(:HSTACK)
617           MA = B
618           $ = HWIJZER
619           HNOF[HA3] = $                     " HNOF BETEKENT HIER " AANTAL STRINGWOORDEN "
620           $ = 1
621           HWIJZER + $
622           F = 1
623           MC = F                            " PAKWOORD INITIERENEN EEN KEER STRINGOPEN GEVONDEN
624           HSTRINGLEZEN[HA3] = B
625           $ = 2
626           HTELLER[HA3] = $
627           $ = HREGELNR[HA3]
628           MC = $
629           B + 2
630           $ = 9
631           SE73
632           HSYM
633           $ = G
634       U,  $ - 129, R                        " SYMBOOL NIET TOEGESTAAN ?
635       Y,  JUMP(62)
636       U,  $ - 102, Z                        "STRINGOPEN?
```

```
637                                                                                 " 7,37
638                                                                                 " HSTRINGOPEN - 1
639     Y,  M[B - 2] + S
640     Y,  JUMP(11)
641     U,  S - 103, Z                          " STRINGCLOSE?
642     N,  JUMP(5)
643         S - 1
644         M[B - 2] - S, P
645     Y,  S = G
646     N,  S = 510                             " EINDE STRING
647         JUMP(4)
648     U,  S - 129, Z                          " SPATIE ?
649     Y,  S = 93
650     U,  S - 128, Z                          " NLCR ?
651     Y,  S = 119
652         HFOUT[HA3] = S
653         G = HTELLER[HA3], Z
654     N,  JUMP(4)
655         M[B - 3] + S
656         SUBC(:MT[30])                       " TEXTPASS2[WIJZER] := M[B - 3]; M[B - 3] := 0
657         F = 2                               " EN WIJZER + 1
658         JUMP(4)
659         F - 1, Z
660     Y,  LWS(9)
661     N,  RCS(9)
662         M[B - 3] + S
663         HTELLER[HA3] = G
664         S = HFOUT[HA3]
665         S - 510, Z                          " EINDE STRING?
666     N,  JUMP(- 36)
667         F - 2, Z
668     N,  SUBC(:MT[18])                       " TEXTPASS2
669         G = - HNOF[HA3]
670         S = 1

671                                                                                 " 7.37
672                                                                                 " HSTRINGOPEN - 2
673         MINS( HWIJZER )
674         S - HNOF[ HA3]
675         M[ B - 3] = S
676         SUBC( :MT[13])                      " TEXTPASS2 IETS VERDER
677         S = HREGELNR[HA3]
678     U,  S - M[B - 1], Z
679     N,  S = - 7799                          " NLCR
680     N,  M[B - 3] = S
681     N,  SUBC(:MT[7])
682     N,  S = HREGELNR[HA3]
683     N,  M[B - 3] = S
684     N,  SUBC(:MT[4])
685         B - 3
686         HSTRINGLEZEN[HA3] = - B
687         SE33
688         HCYCLE1
689         G = - HWIJZER
690         S = HERRORFOUND[HA3], P
691     Y,  JUMP(5)
692         S = :HTEXTPASS2, Z
693         SUBC(MS)
694         SE38
```

```
695         G = M[B - 6]
696         DO(MC[ - 1])
697         S = 0
698         M[B - 4] = S
699         S = 1
700         HWIJZER + S
701         GOTOR(MC[ - 1])
702         S = - 90
703         HFOUT = S
704         B + 1                          " REGELNUMMER BEWAREN
705         S = 9
706         SE73
707         HBOODSCHAP
708         JUMP(- 80)

709                                                          " 7.38
710                                                          " HCYCLE1 - 0
711 HCYCLE1(71)      cyclic point of return
712         MA = B
713         B + 2
714         S = 9              after which another call of "read until next delimiter"
715         SE73
716         HRUND
717         S = HTELLER, Z
718     Y,  JUMP(3)
719         MC = S
720     U,  B - HBOVENGRENS[MA3], Z
721     Y,  SUBC(:HSTACK)
722         S = HNEXTDEL[MA3]
723         S + :MT[ - 59]
724         S = MS
725         GL0 = S
726         SE33
727         HCOLLARSE
728         HTAPE
729         HARITHOP                       " NU VOLGENDE INVAR ADRESSEN VOOR STROOI
730         HARITHOP
731         HARITHOP[22]
732         HARITHOP[22]
733         HARITHOP[22]
734         HARITHOP[22]
735         HRELATION
736         HRELATION
737         HRELATION
738         HRELATION
739         HRELATION
740         HRELATION
741         HNON
742         HBIBOP
743         HBIBOP
744         HBIBOP

745                                                          " 7.38
746                                                          " HCYCLE1 - 1
747         HBIBOP
748         HEORGOTO
749         HEORGOTO
750         HSTEPWHILE[2]
751         HUNTIL
752         HSTEPWHILE
```

```
753           WDO
754           WCOMMA
755           WBECOMES
756           0                                   " LEEG
757           WCOLON
758           WSEMICOLON
759           WTYPE[8]
760           WDRUM
761           WIF
762           WTHEN
763           WELSE
764           WCOMMENT
765           WROUNDOPEN
766           WRCCLOSE
767           WSQUAREOPEN
768           WSQUCLOSE
769           WSTRINGOPEN
770           WSTRINGOPEN[3]
771           WBEGIN
772           WEND
773           WOWN
774           WTYPE[10]
775           WTYPE[4]
776           WTYPE[6]
777           WLABSTR[2]
778           WARRAY

779                                               " 7.38
780                                               " WCYCLE1 = 2
781           WRROC
782           WTYPE
783           WLABSTR
784           WVALUE
785           WTRUE
786           WTRUE
787                                               " 7.39
788                                               " WRROGEND = 0
789 WRROGEND(212)      ---> this symbol  progend
790       U,  S = HTAPENR[WA3], Z
791       Y,  JUMP(4)
792           B + 2
793           S = 9
794           SE73
795           JTAPESERR
796           B + 2
797           S = 9
798           SE73
799           WTRANSNL
800           R = - 1
801           G - HTNL
802           S = :WNL, Z
803           SUBC(MS)
804           SE38
805           R = 0                               " EINDMARKERING ; PARAMETERCODE = 0 KOMT NOOIT VOOR
806           DO(MC[- 1])
807           S = HBANDCORRECT[WA3], R
808       N,  JUMP(14)
809           S = M[B - 1]
810       U,  S - '1240', Z                       " STATEMENT ?
811       Y,  S = M[B - 2]
```

progend

indicates the end of program-text

now transfer will take place from pass1 to pass2 if pass1 detected no errors

```
812         S - '40', Z                          " UNIVERSE ?
813     Y,  JUMP(9)
814         HERRORFOUND[HA3] = B
815         S = HSTRINGLEZEN, R
816     Y,  S = - 43
817     N,  S = - 33
818         HFOUT[HA3] = S
819         B + 2
820         S = 9
821         SE73
822         HBOODSCHAP
823         S = ULIST, R
824         JUMP(2)
825         CHEEN
826         HDRUKPASS1[1]
827         G = HWIJZER
828         F * 40
829         S = G

830                                                          " 7,39
831                                                          " HPROGEND = 1
832         GBILL + S, R
833         SE115
834         S = HERRORFOUND, R
835     N,  JUMP(6)
836         CHEEN
837         UCALCULATION
838         UTRANSTIME = G
839         S = 1                                " HAFLOOP
840         SE33
841         UNORMALEXIT
842         S = HCN1[HA3]                        " OVERGANG NAAR PASS2.
843         LUS(1)
844         HOBTOP = S                           " RED LENGTE HDL
845         S = HREGELNR[HA3]
846         S + 2
847         HAFLOOP = S                          " RED LENGTE HRL
848         SE6
849         SE6                                  " NU TERUG IN ALGOLBLOK.
850         G = - HWIJZER[HA1]
851         S = :HTEXTPASS2[HA1]
852         CHEEN
853         UINVSE117
854         S = 12
855         SE1
856         G = HAFLOOP
857         MC = F
858         F = 1
859         A = :HRL[HA1]
860         CHEEN
861         UINVSE2
862         S = 12
863         SE1

864                                                          " 7,39
865                                                          " HPROGEND = 2
866         S = - HWIJZER[HA1]                   " LENGTE HOBTEXT WORDT TWEE
867         LUS(2)
868         S '*' - 511                          " AFGROND NAAR BOVEN NAAR HET
869         G = - S                              " DICHTSBIJZIJNDE 512-VOUD-1
```

```
870           MC = F
871           F = 1
872           A = :HOBTEXT[HA1]
873           CMEEN
874           UINVSE2
875           S = 11
876           SE0                                  " NU BLOKHOOGTE 2 IN PASS 2
877           S = 12
878           SE1
879           G = HOBTOP
880           MC = F
881           F = 1
882           A = :HDL[HA2]
883           CMEEN
884           UINVSE2
885           S = 12
886           SE1
887           S = 0                                " INITIERING VAN DL MET NOT ??
888           MC = S                               " EN BIBLIOTHEEK
889      U,   S - HBIB, Z
890      Y,   JUMP(28)
891           G = - S
892           F * 2
893           S = :HDL[HA2], Z
894           SUBC(MS)
895           SE38
896           G = - M[B - 3]
897           F * 3
898                                                " 7.39
899                                                " HPROGEND - 3
900           F - 1
901           S = :HNL, Z
902           SUBC(MS)
903           SE39
904           DO(MC[- 1])
905           G = - M[B - 1]
906           F * 2
907           F - 1
908           S = :HDL[HA2], Z
909           SUBC(MS)
910           SE38
911           G = - M[B - 3]
912           F * 3
913           F - 2
914           S = :HNL, Z
915           SUBC(MS)
916           SE39
917           DO(MC[- 1])
918           S = 1
919           PLUSS(M[B - 1])
920           JUMP(- 38)
921           LUS(1)
922           M[B - 1] = S
923      U,   S - HOBTOP, Z
924      Y,   JUMP(9)
925           G = - S
926           S = :HDL[HA2], Z
927           SUBC(MS)
928           SE38
```

```
929         F = - 1
930         DO(MC[- 1])
931         S = 2
932                                                                   " 7.39
933                                                                   " HRROGEND - 4
934         PLUSS(M[B - 1])
935         JUMP(- 11)
936         B - 1
937         F = 1023
938         MC = F
939         F = 1
940         A = :HREVPOL[HA2]
941         CHEEN
942         UINVSE2
943         S = 12
944         SE1
945         F = 511
946         MC = F
947         F = 1
948         A = :HSTAPEL[HA2]
949         CHEEN
950         UINVSE2
951         S = 52[HSTACKLENGTE + 28]
952         SE0                              " NU BLOKHOOGTE 3 IN PASS2
953         B - 28
954         HBOVENGRENS[HA3] = B
955         B - HSTACKLENGTE[- HSTACKDIEPTE]
956         HONDERGRENS[HA3] = B
957         S = '101'                        " UNIVERSE
958         M[B - 1] = S
959         MC = S
960         F = M[B - 2]
961         M[B - 4] = F
962         HOWNARRAYLINK[HA3] = - B
963         HERRORFOUND[HA3] = - B
964         HDRUM[HA3] = - B
965         S = 0
966         HPLOINT[HA3] = S
967                                                                   " 7.39
968                                                                   " HRROGEND - 5
969         HREVTOP[HA3] = S
970         HGASMETER[HA3] = S
971         HRANGFUT[HA3] = S
972         HSPAN[HA3] = S
973         HMAXSPAN[HA3] = S
974         S = 1
975         HREGELNR[HA3] = S
976         HPASS = S
977         HPOSID[HA3] = - S
978         HCIN[HA3] = - S
979         HRESP[HA3] = S
980         S = - 512
981         HBASE[HA3] = S
982         HGEN
983         S = 1
984         HRESP[HA3] + S
985         HOBTOP - S
986         S = 3
```

```
 987          HNEXTBLOCK[HA3] = $
 988          HWIJZER = $
 989          F = - 2
 990          HCBH[HA3] = - G
 991          HMAXITH[HA3] = - G
 992          $ = :HTEXTPASS2, Z
 993          SUBC(MS)
 994          SE39
 995          HFUTSYM[HA3] = G, R
 996          F = - 1
 997      Y,  JUMP(1)
 998          HRANGFUT[HA3] = - G
 999          $ = :HRL, Z
1000          SUBC(MS)
1001          SE38
1002          F = 0
1003          DO(MC[- 1])
1004          $ = 1805
1005          GBILL + $, R
1006          SE115
1007          $ = MT[3]
1008          GL0 = $
1009          SE33
1010          HABLOCKINT
1011          HCYCLE2
```

```
 0                                                                    " 7,40
 1                                                                    " HALGOLBLOCK - 0
 2 HALGOLBLOCK(103)
 3          S = 25
 4          SE0
 5          S = 12        initialisation of tr.
 6          SE1
 7          F = 2047
 8          MC = F
 9          F = 1
10          A =: HIL[HA1]
11          CHEEN
12          UINVSE2
13          S = 12
14          SE1
15          F = 1535
16          MC = F
17          F = 1
18          A =: HCL[HA1]
19          CHEEN
20          UINVSE2
21          S = 12
22          SE1
23          F = 5119
24          MC = F
25          F = 1
26          A =: HNL[HA1]
27          CHEEN
28          UINVSE2
29          S = 12
30          SE1
31          F = 1535
32          MC = F
33          F = 1
34          A =: HBL[HA1]

35                                                                   " 7,40
36                                                                   " HALGOLBLOCK - 1
37          CHEEN
38          UINVSE2
39          S = 12
40          SE1
41          G = MT[1]
42          JUMP(1)
43          115199
44          MC = F
45          F = 1
46          A =: HTEXTPASS2[HA1]
47          CHEEN
48          UINVSE2
49          F = 0
50          HWIJZER[HA1] = F                " INITIEERT OOK HOWN COUNTER OP NUL
51          HPASS[HA1] = G
52          HOWNARRAY[HA1] = - 8
53          S = 9                           " BEGIN PASS1
54          SE0
55          S = 12
56          SE1
57          F = 2559
```

```
 58          MC = F
 59          F = 1
 60          A =: HNS[HA2]
 61          CHEEN
 62          UINVSE2
 63          S = 12
 64          SE1
 65          F = 511
 66          MC = F
 67          F = 1
 68          A =: HSTAPEL[HA2]

 69                                                                  " 7.40
 70                                                                  " HALGOLBLOCK - 2
 71          CHEEN
 72          UINVSE2
 73          S = 55[HSTACKLENGTE + 28]              " NU BLOKHOOGTE 3
 74          SE0
 75          B - 28
 76          HBOVENGRENS[HA3] = B
 77          B - HSTACKLENGTE[- HSTACKDIEPTE]
 78          HONDERGRENS[HA3] = B
 79          S = '40'                          "UNIVERSE
 80          MC = S
 81          F = 0
 82          HLEZENVANTAPE = - F                    " LEZEN VAN TAPE := EALSE; TAPENR := 0;
 83          HPLOINT[HA3] = G
 84          HCNI[HA3] = G
 85          HTNS[HA3] = G
 86          HNEXTBLOCK[HA3] = F                    " DAARMEE OOK HCBH = 0.
 87          HTNL[HA3] = G
 88          HREGELNR[HA3] = G
 89          HLAATSTE[HA3] = B
 90          HDRUM[HA3] = - B
 91          HVERDERLEZEN[HA3] = - B
 92          HBANDCORRECT[HA3] = B
 93          HSTRINGLEZEN[HA3] = - B
 94          HERRORFOUND[HA3] = - B
 95          S = - 1
 96          HREGELDEL[HA3] = - S
 97          HRANGDEL[HA3] = S
 98          HPOSID[HA3] = S
 99          HCIN[HA3] = S
100          HLRP[HA3] = S
101          S = 119
102          HVOORSYM[HA3] = S
103          S = ULIST
104          HTEXTGEWENST[HA3] = S
105          S = 4988
106          GBILL + S, R
107          SE115
108          SE33
109          HVULBIB

110                                                                 " 7.41
111                                                                 " HBACKRAILS - 0
112 HBACKRAILS(167)
113          HERRORFOUND[HA3] = B
114          HTEXTGEWENST[HA3] = - B
115          S = M[B - 1]
```

trying to ~~go on~~ continue syntactical checking after an error has been located.

```
116     U,  $ - '1410', Z                       " PROCEDURE?
117     N,  JUMP(8)
118         B - 1
119     U,  B - HONDERGRENS[HA3], Z
120     Y,  SUBC(:HUNSTACK)
121         B + 2
122         $ = 9
123         $E73
124         HBLOCKINT
125         JUMP(6)
126         $ - '340', Z                        " FORMAL OPEN?
127     N,  $ - '300', Z                        " FORMAL PARAMETER PART
128     N,  $ - '100', Z                        " LEFTHEADING?
129     N,  $ - '100', Z                        " VALUE?
130     N,  $ - '100', Z                        " VALUELIST?
131     N,  JUMP(6)
132         B + 2
133         $ = 9
134         $E73
135         HBLOCKINT
136         $ = '2501'                          " PROCEDUREHEADING
137         M[B - 1] = $, R                     " ZET COND TRUE
138     N,  $ - '1341', Z                       " PROCEDURE HEADING?
139     N,  JUMP(60)                            " DAN NAAR UNIVERSE VRAGEN
140         $ = HNEXTDEL[HA3]                   " REPEAT:
141     U,  $ - 104, Z                          " BEGIN?
142     N,  JUMP(12)
143         $ = '3501'                          " PROCEDURE BODY
144         M[B - 1] = $
145                                             " 7,41
146                                             " HBACKRAIL$ - 1
147         $ = '1340'                          " INTERUNIVERSE
148         MC = $
149     U,  B - HBOVENGRENS[HA3], Z
150     Y,  SUBC(:HSTACK)
151         $ = '301'                           " BEGIN UNKNOWN
152         MC = $
153     U,  B - HBOVENGRENS[HA3], Z
154     Y,  SUBC(:HSTACK)
155         $E33
156         HCYCLE1
157     U,  $ - 105, Z                          " END?
158     N,  JUMP(6)
159         SUBC(:MT[92])                       " VERKORTE TRANSPORT TO NAMELIST
160         SUBC(:MT[91])                       " IDEM
161         $ = '1240'                          " STATEMENT
162         M[B - 1] = $
163         $E33
164         HEND
165     U,  $ - 91, Z                           " SEMICOLON?
166     N,  SUBC(:MT[92])                       " HNEXTDEL := HSYM EN RANGDEL EN REGELDEL
167     N,  JUMP(- 26)                          " GOTO REPEAT
168         MA = B
169         B + 2
170         $ = 9
171         $E73
172         HROND
173         $ = HTELLER[HA3], Z
174     Y,  JUMP(17)
```

```
175     U,  S - '1704', Z                       " IDENTIFIER?
176     N,  JUMP(- 35)
177         MC = S
178         S = HNEXTDEL[HA3]

179                                                                  " 7.41
180                                                                  " HBACKRAILS - 2
181         S - 88, Z                           " BECOMES?
182     N,  S - 2, Z                            " COLON?
183     N,  S - 1, Z                            " SEMICOLON?
184     N,  S - 7, Z                            " ROUNDOPEN
185     N,  S - 2, Z                            " SQUAREOPEN
186     N,  B - 1
187     N,  JUMP(- 44)                          " NAAR REPEAT
188     U,  B - HBOVENGREN3[HA3], Z
189     Y,  SUBC(:HSTACK)
190         S = '3501'                          " PROCEDURE BODY
191         M[B - 2] = S
192         SE33
193         HCYCLE1[10]
194         S = HNEXTDEL[HA3]
195         S - 81, Z                           " GOTO?
196     N,  S - 1, Z                            " FOR?
197     N,  S - 9, Z                            " SEMICOLON?
198     N,  S - 3, Z                            " IF
199     N,  S - 10, Z                           " BEGIN
200     N,  JUMP(- 57)
201         S = '3501'                          " PROCEDUREBODY
202         M[B - 1] = S
203         JUMP(- 12)                          " NAAR CYCLE[10]
204     U,  S - '400', Z                        " FORCLAUSE?
205     Y,  SUBC(:MT[48])                       " TRANSPORT TO NAMELIST
206     Y,  JUMP(30)
207     U,  S - '1000', Z                       " PROCEDUREBODY?
208     Y,  SUBC(:MT[45])                       " TRANSPORT TO NAMELIST
209     Y,  JUMP(- 5)
210         S = - M[B - 1]
211     U,  S '*' '101', Z                      " STATSTARTADM # STATTHEN?
212     N,  JUMP(22)

213                                                                  " 7.41
214                                                                  " HBACKRAILS - 3
215         S = HNEXTDEL                        " REPEAT1
216     U,  S - 104, Z                          " BEGIN?
217     Y,  JUMP(- 67)
218     U,  S - 105, Z                          " END?
219     N,  JUMP(4)
220         B + 1
221     U,  B - HBOVENGRENS[HA3], Z
222     Y,  SUBC(:HSTACK)
223         JUMP(- 59)
224     U,  S - 112, Z                          " PROCEDURE?
225     N,  JUMP(7)
226         S = M[B - 1]
227     U,  S - '501', Z                        " BEGIN COMPOUND?
228     N,  S - '1501', Z                       " BEGIN BLOCK?
229     Y,  S = '200'
230     Y,  M[B - 1] - S
231         SE33
232         HPROC
```

```
233          $ - 91, Z                          " SEMICOLON?
234      Y,  JUMP(- 76)                         " GOTO CYCLE
235          SUBC(:MT[27])                      " LEES
236          JUMP(- 22)
237          $ + '40', Z                        " UNIVERSE?
238      Y,  JUMP(4)
239          B - 1
240      U,  B - HONDERGRENS[MA3], Z
241      Y,  SUBC(:MUNSTACK)
242          JUMP(- 122)
243          $ = MNEXTDEL[MA3]
244      U,  $ - 104, Z                         " BEGIN?
245      Y,  JUMP(- 95)
246          $ - 105, Z                         " END?

247                                                                  " 7,41
248                                                                  " MBACKRAILS - 4
249      N,  SUBC(:MT[15])                      " LEES
250      N,  JUMP(- 6)
251          $ = 33
252          MFOUT = S
253          MA = B
254          B + 2
255          S = 9
256          SE73
257          MBOOD$CHAR
258          G = - MLRP[MA3]                    " TRANSPORT TO NAMELIST
259          MTNS[MA3] = - G
260          S = :MNS, Z
261          SUBC(MS)
262          SE39
263          MLRP[MA3] = G
264          GOTOR(MC[ - 1])
265          B - 1                              " SUBROUTINE LEES
266          MA = B
267          B + 3
268          S = 9
269          SE73
270          MSYM
271          MNEXTDEL[MA3] = G
272          S = G
273      U,  $ - 63, P
274      N,  JUMP(6)
275      U,  $ - 120, P
276      Y,  JUMP(4)
277          $ = MRANGNR[MA3]
278          MRANGDEL[MA3] = $
279          $ = MREGELNR[MA3]
280          MREGELDEL[MA3] = $
281          $ = MC[- 1]
282          $ '*' - MRAG
283          MC = $
284          $ = :MT[0]
285          $ '*' MRAG
286          $ + MC[- 1]
287          GOTOR(S)

288                                                                  " 7,42
289                                                                  " MAL1 - 0
290 MAL1(105)
```

```
291          $ = - M[B - 1]
292     U,   $ + '740', Z                    " LEFTHEADING?
293     Y,   $ = 1
294     Y,   JUMP(35)                        " BO
295     U,   $ + '1140', Z                   " VALUELIST?
296     Y,   $ = 2
297     Y,   JUMP(32)                        " BO
298     U,   $ + '240', Z                    " ARRAYSEGMENT?
299     Y,   JUMP(14)
300     U,   $ + '11502', Z                  " SWITCHBECOMES?
301     Y,   JUMP(12)
302          $ = - M[B - 2]
303     U,   $ '*' '110', Z                  " TYPE?
304     N,   JUMP(5)
305          $ = M[B - 1]
306     U,   $ - '540', Z                    " LEFTDECLARATION?
307     N,   $ - '1704', Z                   " IDENTIFIER
308     Y,   JUMP(5)
309          $ = - M[B - 2]
310          $ + '540', Z                    " LEFTDECLARATION
311     N,   JUMP(4)
312          $ = - M[B - 3]
313          $ '*' '110', Z                  " TYPE
314     Y,   $ = 70
315     Y,   JUMP(14)                        " BOOOSCHAP
316          $ = M[B - 1]
317     U,   $ - '540', Z                    " LEFTDECLARATION
318     Y,   JUMP(7)
319          $ - '1704', Z                   " IDENTIFIER
320     N,   JUMP(17)
321          $ = - M[B - 2]
322     U,   $ '*' '20', Z                   " SPECIFICATOR

323                                                                  " 7.42
324                                                                  " MAL1 - 1
325     Y,   JUMP(2)
326          $ + '540', Z                    " LEFTDECLARATION
327     N,   JUMP(12)
328          $ = 1
329          HNOF[MA3] - $, R
330     N,   $ = 71
331     Y,   $ = - 71
332          HFOUT[MA3]= $
333          MA = B
334          B + 2
335          $ = 9
336          SE73
337          HBOODSCHAP
338          $ = 2
339          JUMP( - 8)
340          $ = M[B - 1]
341     U,   $ - '640', Z                    " FORMAL PARAMETER PART?
342     N,   JUMP(8)
343          $ = - 73
344          HFOUT[MA3] = $
345          B + 2
346          $ = 9
347          SE73
348          HBOODSCHAP
349          $ = 1
```

all sorts of alarms.

error has been detected

these alarms try to establish the nature of these errors and to give an error message as accurate as possible

```
350          JUMP( - 19)
351      U,  $ - '1040', Z                    " VALUE?
352      Y,  JUMP(4)
353      U,  $ - '1704', Z                    " IDENTIFIER?
354      N,  JUMP(7)
355          $ = - M[B - 2]
356      U,  $ + '1040', Z                    " VALUE
357                                                                  " 7,42
358                                                                  " HAL1 - 2
359      Y,  $ = - 72
360      Y,  JUMP( - 15)
361          $ '*' 1, Z                       " STAT START ADM?
362      Y,  $ = 74
363      Y,  JUMP( - 30)
364          $ = 2
365          HPRIORITY[HA3] = $
366          $ = MT[3]
367          GL0 = $
368          SE33
369          HCOLLAPSE
370          HAL1[76]
371          $ = - M[B - 1]
372      U,  $ '*' '104', Z                   " DESIGN, OPERAND?
373      N,  JUMP(4)
374          $ = M[B - 2]
375          $ - '11502', Z                   " SWITCHBECOMES
376      Y,  JUMP( - 59)
377          $ = - M[B - 1]
378          $ + '1240', Z                    " STATEMENT
379      N,  $ = 0
380      N,  JUMP( - 47)
381          $ = M[B - 2]                     " AL1A:
382          $ - '2001', Z
383      Y,  HCOMFOUND[HA3] = B
384      N,  HCOMFOUND[HA3] = - 0
385          $ = 1
386          HPRIORITY[HA3] = $
387          $ = MT[3]
388          GL0 = $
389          SE33
390          HCOLLAPSE
391                                                                  " 7.42
392                                                                  " HAL1 - 3
393          HAL1[97]
394          $ = M[B - 2]
395      U,  $ - '3501', Z                    " PROCEDURE BODY?
396      Y,  $ = 39
397      Y,  JUMP( - 62)
398          $ = HCOMFOUND[HA3], R
399      Y,  $ = 46
400      N,  $ = 47
401          JUMP( - 66)
402                                                                  " 7.43
403                                                                  " HAL2 - 0
404  HAL2(51)
405          $ = - M[B - 1]
406      U,  $ + '2404', Z                    " NUMBER?
```

```
407     N,  JUMP(6)
408         $ = - M[B - 2]
409     U,  $ '*' 1, Z                          " STAT START ADM?
410     N,  $ + '40', Z                         " UNIVERSE
411     Y,  $ = 3
412     Y,  JUMP(33)
413         JUMP(23)                            " GOTO AL2A
414     U,  $ + '1704', Z                       " IDENTIFIER?
415     N,  JUMP(21)
416         B - 1
417     U,  B - HONDERGRENS[HA3], Z
418     Y,  SUBC(:HUNSTACK)
419         $ = - M[B - 1]
420     U,  $ + '740', Z                        " LEFTHEADING?
421     Y,  $ = 1
422     Y,  JUMP(23)
423         $ + '1140', Z                       " VALUELIST
424         $ = 2
425     Y,  JUMP(20)
426         HPRIORITY[HA3] = $
427         $ = MT[3]
428         GLO = $
429         SE33
430         HCOLLAPSE
431         HAL2[27]
432         $ = - M[B - 1]
433     U,  $ + '1240', Z                       " STATEMENT
434     N,  JUMP(2)
435         SE33
436         HAL1[86]

437                                                                  " 7.43
438                                                                  " HAL2 - 1
439         $ = - M[B - 1]                      " AL2A:
440     U,  $ '*' 4, Z                          " OPERAND?
441     N,  $ '*' 2, Z                          " EXPR. START ADM?
442     N,  $ = 0                               " + 0
443     N,  JUMP(4)
444         $ = M[B - 1]
445         $ - '2502', Z                       " ARRAYOPEN?
446     N,  JUMP(7)
447         $ = 66
448         HFOUT[HA3] = $
449         MA = B
450         B + 2
451         $ = 9
452         SE73
453         HBOODSCHAR
454         B - 1
455     U,  B - HONDERGRENS[HA3], Z
456     Y,  SUBC(:HUNSTACK)
457         JUMP( - 19)

458                                                                  " 7.44
459                                                                  " HAL3 - 0
460 HAL3(43)
461         $ = M[B - 1]
462     U,  $ - '1704', Z                       " IDENTIFIER?
463     N,  $ - '3704', Z                       " SUBSCR VAR?
464     N,  JUMP(11)
```

```
465          $ = - M[B - 2]
466      U,  $ '*' 2, Z                          " EXPR. START ADM?
467      Y,  $ = 5
468      Y,  JUMP(14)                            " NAAR BOODSCHAP
469      U,  $ + '740', Z                        " LEFTHEADING?
470      Y,  $ = 1
471      Y,  JUMP(11)
472          $ + '1140', Z                       " VALUELIST
473      Y,  $ = 2
474      Y,  JUMP(8)
475          JUMP(3)
476          $ = '3700', Z
477      Y,  $ = 4                               " PROCEDURE RESULT?
478      Y,  JUMP(4)
479          $ = M[B - 1]
480          $ = '1704', Z                       " IDENTIFIER?
481      Y,  JUMP(7)
482          $ = 0
483          HFOUT[HA3] = $
484          MA = B
485          B + 2
486          $ = 9
487          SE73
488          HBOODSCHAP
489          B - 1
490      U,  B - HONDERGRENS[HA3], Z
491      Y,  SUBC(:HUNSTACK)
492          $ = 2

493                                                                  " 7.44
494                                                                  " HAL3 - 1
495          HPRIORITY[HA3] = $
496          $ = MT[3]
497          GL0 = $
498          SE33
499          HCOLLARSE
500          HAL3[38]
501          $ = M[B - 1]
502          $ = '1240', Z                       " STATEMENT?
503      N,  JUMP( - 22)
504          SE33
505          HAL1[86]

506                                                                  " 7.45
507                                                                  " HAL5 - 0
508 HAL5(46)
509          $ = M[B - 1]
510          $ = '1704', Z                       " IDENTIFIER?
511      N,  $ = 0
512      N,  JUMP(34)
513          $ = M[B - 2]
514      U,  $ = '1220', Z                       " ARRAYSPEC?
515      Y,  $ = 6
516      Y,  JUMP(30)
517      U,  $ = '1620', Z                       " SWITCH SPEC?
518      N,  $ = '2020', Z                       " LABELSPEC?
519      Y,  $ = 53
520      Y,  JUMP(26)
521          $ + '1060', Z                       " LEFTHEADING?
522      Y,  $ = 1
```

```
523     Y,  JUMP(23)
524         $ - '200', Z                        " VALUELIST?
525     Y,  $ = 2
526     Y,  JUMP(20)
527         B - 1
528     U,  B - HONDERGRENS[HA3], Z
529     Y,  SUBC(:HUNSTACK)
530         $ = - M[B - 2]
531     U,  $ '*' 2, Z                          " EXPRSTARTADM?
532     Y,  $ = - M[B - 1]
533     Y,  $ '*' '404', Z                      " NUM OP (TOP)?
534     Y,  $ = 7
535     Y,  JUMP(11)
536         $ = 2
537         HPRIORITY[HA3] = $
538         $ = MT[3]
539         GL0 = $
540         SE33

541                                                                  " 7.45
542                                                                  " HAL5 - 1
543         HCOLLAPSE
544         HAL5[34]
545         $ = M[B - 1]
546         $ - '1240', Z                       " STATEMENT?
547     Y,  JUMP(7)
548         $ = 0
549         HFOUT[HA3] = $
550         MA = B
551         B + 2
552         $ = 9
553         SE73
554         HBOODSCHAR
555         SE33
556         HAL1[86]

557                                                                  " 7,46
558                                                                  " HAL6 - 0
559 HAL6(46)
560         $ = - M[B - 1]
561     U,  $ '*' '404', Z                      " NUMERICAL OPERAND?
562     N,  JUMP(9)
563         $ = - M[B - 2]
564     U,  $ '*' 2, Z                          " EXPRESSION START ADM?
565     Y,  $ = 7
566     Y,  JUMP(33)
567         $ '*' '404', Z                      " NUMERICAL OPERAND?
568     Y,  $ = - M[B - 3]
569     Y,  $ '*' 2, Z                          " EXPRESSION START ADM?
570     Y,  JUMP( - 6)
571         $ = - M[B - 1]
572         $ + '1704', Z                       " IDENTIFIER?
573     N,  JUMP(25)                            " BOODSCHAP(0)
574         $ = M[B - 2]
575     U,  $ - '1420', Z                       " PROCEDURE SPEC?
576     Y,  $ = 8
577     Y,  JUMP(22)
578     U,  $ - '740', Z                        " LEFTHEADING?
579     Y,  $ = 1
580     Y,  JUMP(19)
```

```
581      U,  S - '1140', Z                    " VALUELIST?
582      Y,  S = 2
583      Y,  JUMP(16)
584          B - 1
585      U,  B - HONDERGRENS[HA3], Z
586      Y,  SUBC(:HUNSTACK)
587          S = 2
588          HPRIORITY[HA3] = S
589          S = MT[3]
590          GL0 = S
591          SE33
592                                                          " 7.46
593                                                          " HAL6 - 1
594          HCOLLAPSE
595          HAL6[34]
596          S = M[B - 1]
597          S - '1240', Z                    " STATEMENT?
598      N,  JUMP(2)
599          SE33
600          HAL1[86]
601          S = 0
602          HFOUT[HA3] = S
603          MA = B
604          B + 2
605          S = 9
606          SE73
607          HBOOOSCHAR
608                                                          " 7.47
609                                                          " HAL7 - 0
610 HAL7(53)
611              S = HNEXTDEL[HA3]
612              S - 70, Z                    " EQUAL?
613          N,  JUMP(27)                     " GOTO AL7A
614              S = M[B - 1]
615          U,  S - '1704', Z                " IDENTIFIER?
616          N,  S - '3704', Z                " SUBSCRIPTED VARIABLE?
617          N,  JUMP(17)
618              S = - M[B - 2]
619          U,  S '*' 1, Z                   " STAT START ADM?
620          N,  S + '302', Z                 " LEFT ASSIGNMENT?
621          N,  S + '136', Z                 " FOR?
622          N,  S + '1150', Z                " SWITCH?
623          N,  JUMP(11)
624              S = - 10
625              HFOUT[HA3] = S
626              MA = B
627              B + 2
628              S = 9
629              SE73
630              HBOOOSCHAR
631              S = 88
632              HNEXTDEL[HA3] = S
633              SE33
634              HBECOMES
635              S = - M[B - 1]
636              S '*' '1004', Z              " BOOLEAN OPERAND?
637          Y,  S = - M[B - 2]
638          Y,  S '*' '202', Z               " BOOLEAN START ADM?
```

```
639     Y,  $ = 11
640     Y,  JUMP(- 16)
641         $ = - M[B - 1]                      " AL7A
642     U,  $ + '7004', Z                       " RELATION?

643                                                                  " 7.47
644                                                                  " HAL7 - 1
645     Y,  $ = 12
646     Y,  JUMP(- 20)
647         $ '*' '404', Z                      " NUMERICAL OPERAND?
648     Y,  $ = - M[B - 2]
649     Y,  $ '*' '404', Z                      " IDEM
650     N,  JUMP(13)
651         B - 1
652     U,  B - HONDERGRENS[HA3], Z
653     Y,  SUBC(:HUNSTACK)
654         $ = 9
655         HPRIORITY[HA3] = $
656         $ = MT[3]
657         GL0 = $
658         SE33
659         HCOLLAPSE
660         HAL7[48]
661         $ = - M[B - 1]
662         $ '*' '404', Z                      " NUMERICAL OPERAND?
663     Y,  $ = 7
664     N,  $ = 0                               " + 0
665         JUMP(- 39)

666                                                                  " 7.48
667                                                                  " HAL8 - 0
668 HAL8(13)
669         $ = M[B - 1]                        " TOP
670     U,  $ - '5602', Z                       " NON?
671     Y,  $ = 14
672     Y,  JUMP(3)
673         $ - '6002', Z                       " LEFTRELATION?
674     Y,  $ = 15
675     N,  $ = 0
676         HFOUT[HA3] = $
677         MA = B
678         B + 2
679         $ = 9
680         SE73
681         HBOODSCHAR

682                                                                  " 7.49
683                                                                  " HAL9 - 0
684 HAL9(25)
685         $ = - M[B - 1]
686     U,  $ '*' '404', Z                      " NUM OP?
687     Y,  $ = - M[B - 2]
688     Y,  $ '*' '404', Z                      " IDEM
689     N,  JUMP(13)
690         B - 1
691     U,  B - HONDERGRENS[HA3], Z
692     Y,  SUBC(:HUNSTACK)
693         $ = 9
694         HPRIORITY[HA3] = $
695         $ = MT[3]
```

```
696          GL0 = $
697          SE33
698          WCOLLAPSE
699          WAL9[15]
700          $ = M[B - 1]
701          $ - '7004', Z                    " RELATION?
702      Y,  $ = 7
703      N,  $ = 0
704          WFOUT[WA3] = $
705          WA = B
706          B + 2
707          $ = 9
708          SE73
709          WBOOD$CHAR

710                                                                  " 7,50
711                                                                  " WAL10 - 0
712 WAL10(24)
713          $ = M[B - 1]
714      U,  $ - '2001', Z                    " STAT THEN?
715      N,  $ - '4202', Z                    " EXPR THEN?
716      Y,  $ = 16
717      Y,  JUMP(13)
718          $ - '600', Z                     " LEFTNUM?
719      Y,  $ = 17
720      Y,  JUMP(10)
721          $ - '600', Z                     " NOU?
722      N,  $ - '1000', Z                    " LEFT BOOLEAN?
723      Y,  $ = 18
724      Y,  JUMP(6)
725          $ = M[B - 1]
726          $ - '6002', Z                    " LEFTRELATION?
727      Y,  JUMP(2)
728          SE33
729          WAL1                             " NIET SUB86
730          $ = 19
731          WFOUT[WA3] = $
732          WA = B
733          B + 2
734          $ = 9
735          SE73
736          WBOODSCHAR

737                                                                  " 7,51
738                                                                  " WAL11 - 0
739 WAL11(41)
740          $ = - M[B - 1]
741      U,  $ '*' '404', Z                   " NUMOP?
742      N,  JUMP(18)
743          $ = - M[B - 2]
744          $ '*' '404', Z                   " IDEM
745      N,  $ = - M[B - 1]
746      N,  JUMP(14)
747          B - 1
748      U,  B - WONDERGRENS[WA3], Z
749      Y,  SUBC(:WUNSTACK)
750          $ = 9
751          WPRIORITY[WA3] = $
752          $ = MT[3]
753          GL0 = $
```

```
754          SE33
755          HCOLLAPSE
756          HAL11[17]
757          S = - M[B - 1]
758      U,  S + '7004', Z                    " RELATION
759      Y,  S = 7
760      Y,  JUMP(9)
761      U,  S '*' 4, Z                       " OPERAND?
762      Y,  JUMP(13)
763      U,  S '*' 2, Z                       " EXPR START ADM?
764      N,  S = 22
765      N,  JUMP(4)
766      U,  S + '3702', Z                    " EXPR IF?
767      N,  S + '3302', Z                    " STAT IF?
768      N,  JUMP(7)
769          S = 21
770          HFOUT[MA3] = S
771          MA = B

772                                                                  " 7.51
773                                                                  " HAL11 - 1
774          B + 2
775          S = 9
776          SE73
777          HBOODSCHAR
778          B - 1
779      U,  B - HONDERGRENS[MA3], Z
780      Y,  SUBC(:HUNSTACK)
781          S = - M[B - 1]
782          JUMP( - 20)

783                                                                  " 7.52
784                                                                  " HAL12 - 0
785 HAL12(21)
786          S = HNEXTDEL[MA3]
787      U,  S - 64, Z                        " PLUS?
788      N,  S - 65, Z                        " MIN?
789          S = - M[B - 1]
790      N,  JUMP(3)
791      U,  S + '5002', Z                    " LEFTNUM?
792      Y,  S = 9
793      Y,  JUMP(7)
794      U,  S '*' '404', Z                   " NUMOP?
795      Y,  S = - M[B - 2]
796      Y,  S '*' '404', Z                   " IDEM
797      Y,  S = - M[B - 3]
798      Y,  S '*' 2, Z                       " EXPRSTARTADM?
799      Y,  S = 7
800      N,  S = 0
801          HFOUT[MA3] = S
802          MA = B
803          B + 2
804          S = 9
805          SE73
806          HBOODSCHAR

807                                                                  " 7.53
808                                                                  " HAL13 - 0
809 HAL13(77)
810          S = - M[B - 1]
```

```
811     U,  $ '*' '404', Z                      " NUM OP?
812     Y,  $ = - M[B - 2]
813     Y,  $ '*' '404', Z                      " IDEM
814     N,  JUMP(18)
815         B - 1
816     U,  B - HONDERGRENS[HA3], Z
817     Y,  SUBC(:HUNSTACK)
818         $ = 2
819         HPRIORITY[HA3] = $
820         $ = MT[3]
821         GLO = $
822         $E33
823         HCOLLAPSE
824         HAL13[15]
825         $ = - M[B - 2]
826     U,  $ + '4202', Z                       " EXPRTHEN?
827     Y,  JUMP(3)
828         $ + '2001', Z                       " STATTHEN?
829     Y,  $ = M[B - 1]
830     Y,  $ - '1240', Z                       " STATEMENT?
831     Y,  $ = 7
832     Y,  JUMP(38)
833         $ = - M[B - 1]
834     U,  $ '*' 4, Z                          " OPERAND?
835     Y,  JUMP(5)
836     U,  $ '*' 2, Z                          " EXPRSTARTADM?
837     N,  JUMP(7)
838         $ - '4202', Z                       " EXPR THEN?
839     Y,  $ = 23
840     Y,  JUMP(30)
841         B - 1

842                                             " 7,53
843                                             " HAL13 - 1
844     U,  B - HONDERGRENS[HA3], Z
845     Y,  SUBC(:HUNSTACK)
846         JUMP(- 12)
847     U,  $ + '1240', Z                       " STATEMENT?
848     Y,  HCOMFOUND[HA3] = B
849     N,  HCOMFOUND[HA3] = - B
850     N,  JUMP(3)
851         B - 1
852     U,  B - HONDERGRENS[HA3], Z
853     Y,  SUBC(:HUNSTACK)
854         $ = - M[B - 1]
855     U,  $ + '3101', Z                       " FORCLAUSE?
856     N,  JUMP(22)
857         $ = M[B - 2]
858     U,  $ - '3101', Z                       " IDEM?
859     N,  JUMP(8)
860         B - 1
861     U,  B - HONDERGRENS[HA3], Z
862     Y,  SUBC(:HUNSTACK)
863         B + 2
864         $ = 9
865         $E73
866         HTRANSNL
867         JUMP(- 14)
868         $ - '2001', Z                       " STATTHEN?
869     N,  JUMP(17)
```

```
870          $ = HCOMFOUND[HA3], P
871      Y,  $ = 24
872      N,  $ = 25
873          HFOUT[HA3] = $
874          MA = B
875          B + 2

876                                                                  " 7,53
877                                                                  " HAL13 - 2
878          $ = 9
879          $E73
880          HBOODSCHAR
881      U,  $ + '2001', Z                  " STATTHEN?
882      Y,  $ = 26
883      Y,  JUMP(- 9)
884      U,  $ '*' 1, Z                     " STATSTARTADM?
885      Y,  $ = M[B - 2]
886      Y,  $ - '2001', Z                  " STATTHEN?
887      Y,  $ = HCOMFOUND[HA3], P
888      Y,  $ = 27
889      N,  $ = 0
890          JUMP(- 16)

891                                                                  " 7,54
892                                                                  " HAL14 - 0
893  HAL14(45)
894          $ = - M[B - 1]
895          $ '*' '404', Z                 " NUM OP?
896      Y,  $ = - M[B - 2]
897      Y,  $ '*' '404', Z                 " NUM OP?
898      N,  JUMP(18)                       " AL14A
899          B - 1
900      U,  B - HONDERGRENS[HA3], Z
901      Y,  SUBC(:HUNSTACK)
902          $ = 3
903          HPRIORITY[HA3] = $
904          $ = MT[3]
905          GL0 = $
906          $E33
907          HCOLLAPSE
908          HAL14[15]
909          $ = - M[B - 1]
910          $ '*' '404', Z                 " NUMERICAL OPERAND?
911      N,  JUMP(5)
912          $ = M[B - 2]
913      U,  $ - '1102', Z                  " SUBSCRIPT OPEN?
914      N,  $ - '11102', Z                 " LOWERBOUND?
915      Y,  $ = 7
916      Y,  JUMP(12)
917          $ = - M[B - 1]                 " AL14A
918      U,  $ '*' 4, Z                     " OPERAND?
919      Y,  JUMP(15)
920      U,  $ '*' 2, Z                     " EXPR START ADM?
921      N,  $ = 0
922      N,  JUMP(6)
923      U,  $ + '1102', Z                  " SUBSCRIPT OPEN
924      Y,  $ = 28
925      Y,  JUMP(3)

926                                                                  " 7,54
```

```
                                                                              " HAL14 - 1
           $ + '11102', Z                     " LOWERBOUND
      N,   JUMP(7)
           $ = 29
           HFOUT[HA3] = S
           MA = B
           B + 2
           $ = 9
           $E73
           HBOODSCHAP
           B - 1
      U,   B - HONDERGRENS[HA3], Z
      Y,   SUBC(:HUNSTACK)
           JUMP( - 22)

                                                                              " 7.56
                                                                              " HAL16 - 0
HAL16(48)
           $ = - M[B - 1]
      U,   $ + '1240', Z                      " STATEMENT?
      Y,   S = 39
      Y,   JUMP(16)
      U,   S '*' '101', Z                     " IF MAG VOLGEN?
      N,   JUMP(20)
      U,   S + '3101', Z                      " FORCLAUSE
      N,   JUMP(9)
           B + 2
           $ = 9
           $E73
           HTRANSNL
           B - 1
      U,   B - HONDERGRENS[HA3], Z
      Y,   SUBC(:HUNSTACK)
           S = - M[B - 1]
           JUMP( - 13)
           $ + '3501', Z                      " PROCEDURE BODY
      Y,   $ = 34
      N,   $ = 35
           HFOUT[HA3] = S
           MA = B
           B + 2
           S = 9
           $E73
           HBOODSCHAP
      U,   $ + '40', Z                        " UNIVERSE?
      Y,   S = 33
      Y,   JUMP( - 9)
           S '*' '404', Z                     " NUM OP?
      Y,   S = - M[B - 2]
      Y,   S '*' '404', Z                     " IDEM

                                                                              " 7.56
                                                                              " HAL16 - 1
      N,   JUMP( - 21)
           B - 1
      U,   B - HONDERGRENS[HA3], Z
      Y,   SUBC(:HUNSTACK)
           $ = 1
           HPRIORITY[HA3] = S
           $ = MT[3]
```

```
 985          GL0 = S
 986          SE33
 987          WCOLLAPSE
 988          WAL16[43]
 989          S = - M[B - 1]
 990      U,  S + '1240', Z                    " STATEMENT?
 991      N,  JUMP( -42)
 992          S = 7
 993          JUMP( - 28)

 994                                                                  " 7,55
 995                                                                  " WAL15 - 0
 996 WAL15(49)
 997          S = M[B - 1]
 998          S - '340', Z                     " FORMAL OPEN?
 999      N,  S = - M[B - 2]
1000      N,  S + '340', Z                     " IDEM
1001      Y,  S = 30
1002      Y,  JUMP(33)
1003          S = - M[B - 1]
1004      U,  S '*' '404', Z                   " NUM OP?
1005      N,  JUMP(18)
1006          S = - M[B - 2]
1007          S '*' '404', Z                   " IDEM?
1008      N,  JUMP(33)
1009          B - 1
1010      U,  B - WONDERGRENS[WA3], Z
1011      Y,  SUBC(:WUNSTACK)
1012          S = 3
1013          WPRIORITY[WA3] = S
1014          S = MT[3]
1015          GL0 = S
1016          SE33
1017          WCOLLAPSE
1018          WAL15[22]
1019          S = M[B - 2]
1020      U,  S - '1702', Z                    " ALG OPEN?
1021      N,  S - '2302', Z                    " PARAMETEROPEN?
1022      Y,  S = 7
1023      Y,  JUMP(12)
1024          S = - M[B - 1]
1025      U,  S '*' 4, Z                       " OPERAND?
1026      Y,  JUMP(15)
1027      U,  S '*' 2, Z                       " EXPRSTARTADM?
1028      N,  S = 0

1029                                                                  " 7,55
1030                                                                  " WAL15 - 1
1031      N,  JUMP(6)
1032      U,  S + '1702', Z                    " ALGOPEN?
1033      Y,  S = 31
1034      Y,  JUMP(3)
1035          S + '2302', Z                    " PARAMETEROPEN?
1036      N,  JUMP(7)
1037          S = 32
1038          WFOUT[WA3] = S
1039          WA = B
1040          B + 2
1041          S = 9
1042          SE73
```

```
1043          MBOODSCHAR
1044          B - 1
1045      U,  B - HONDERGRENS[MA3], Z
1046      Y,  SUBC(:HUNSTACK)
1047          JUMP(- 22)

1048                                                                  " 7.57
1049                                                                  " HAL17 - 0
1050  HAL17(82)
1051          $ = - M[B - 1]
1052      U,  $ '*' '404', Z                      " NUM OP?
1053      Y,  $ = - M[B - 2]
1054      Y,  $ '*' '404', Z                      " IDEM
1055      N,  JUMP(14)
1056          B - 1
1057      U,  B - HONDERGRENS[MA3], Z
1058      Y,  SUBC(:HUNSTACK)
1059          $ = 1
1060          HPRIORITY[MA3] = $
1061          $ = MT[3]
1062          GLO = $
1063          SE33
1064          MCOLLAPSE
1065          HAL17[15]
1066          $ = - M[B - 1]
1067          $ + '1240', Z                       " STATEMENT?
1068      Y,  $ = 7
1069      Y,  JUMP(21)
1070          $ = - M[B - 1]
1071      U,  $ '*' 4, Z                          " OPERAND?
1072      Y,  JUMP(9)
1073      U,  $ '*' 2, Z                          " EXPRSTADM?
1074      N,  JUMP(11)
1075      U,  $ + '2502', Z                       " ARRAYOPEN?
1076      N,  $ + '11102', Z                      " LOWERBOUND
1077      Y,  $ = 36
1078      Y,  JUMP(12)
1079          $ + '400', Z                        " SWITCHBECOMES?
1080      Y,  $ = 37
1081      Y,  JUMP(9)
1082          B - 1

1083                                                                  " 7.57
1084                                                                  " HAL17 - 1
1085      U,  B - HONDERGRENS[MA3], Z
1086      Y,  SUBC(:HUNSTACK)
1087          JUMP(- 16)
1088      U,  $ '*' 1, Z                          " STATSTADM?
1089      N,  JUMP(9)
1090          $ + '3501', Z                       " PROCEDUREBODY?
1091      Y,  $ = 38
1092      N,  $ = 35
1093          HFOUT[MA3] = $
1094          MA = B
1095          B + 2
1096          $ = 9
1097          SE73
1098          MBOODSCHAR
1099      U,  $ + '540', Z                        " LEFTDECLARATION
1100      N,  JUMP(4)
```

```
1101          B - 1
1102      U,  B - HONDERGRENS[HA3], Z
1103      Y,  SUBC(:HUNSTACK)
1104          $ = - M[B - 1]
1105      U,  $ '*' '20', Z                    " SPECIFICATOR?
1106      Y,  $ = 40
1107      Y,  JUMP(- 15)
1108      U,  $ '*' '110', Z                   " TYPE?
1109      Y,  $ = 41
1110      Y,  JUMP(- 18)
1111      U,  $ + '1210', Z                    " ARRAY?
1112      Y,  $ = 42
1113      Y,  JUMP(- 21)
1114      U,  $ + '2210', Z                    " OWN?
1115      Y,  $ = 52
1116      Y,  JUMP(- 24)

1117                                                                  " 7.57
1118                                                                  " HAL17 - 2
1119      U,  $ + '340', Z                     " FORMAL OPEN?
1120      N,  $ + '640', Z                     " FORMALPARAMETERPART?
1121      Y,  $ = 44
1122      Y,  JUMP(- 28)
1123      U,  $ + '100', Z                     " LEFTHEADING?
1124      N,  $ + '300', Z                     " VALUELIST?
1125      Y,  $ = 48
1126      Y,  JUMP(- 32)
1127      U,  $ - '100', Z                     " VALUE?
1128      Y,  $ = 49
1129      Y,  JUMP(- 35)
1130      U,  $ + '450', Z                     " SWITCH?
1131      Y,  $ = 50
1132      Y,  JUMP(- 38)
1133          $ - '700', Z                     " ARRAYSEGMENT?
1134      Y,  $ = 51
1135      N,  $ = 0
1136          JUMP(- 42)

1137                                                                  " 7.58
1138                                                                  " HAL18 - 0
1139  HAL18(68)
1140          $ = - M[B - 1]
1141      U,  $ '*' '404', Z                   " NUM OP?
1142      N,  JUMP(8)
1143          $ = - M[B - 2]
1144      U,  $ + '2502', Z                    " ARRAY OPEN?
1145      Y,  $ = 56
1146      Y,  JUMP(55)
1147          $ '*' '404', Z                   " NUM OP?
1148      Y,  $ = 7
1149      Y,  JUMP(52)
1150          $ = - M[B - 1]
1151      U,  $ '*' 4, Z                       " OPERAND?
1152      Y,  JUMP(24)
1153      U,  $ '*' 2, Z                       " EXPR START ADM?
1154      N,  JUMP(26)
1155      U,  $ + '2302', Z                    " PARAMETEROPEN
1156      Y,  $ = 57
1157      Y,  JUMP(44)
1158      U,  $ + '1102', Z                    " SUBSCRIPT OPEN
```

```
1159      Y,  S = 28
1160      Y,  JUMP(41)
1161      U,  S + '10502', Z                    " FORBECOMES?
1162      Y,  S = 58
1163      Y,  JUMP(38)
1164      U,  S + '11502', Z                    " SWITCHBECOMES?
1165      Y,  S = 59
1166      Y,  JUMP(35)
1167      U,  S + '7302', Z                     " WHILE?
1168      Y,  S = 61
1169      Y,  JUMP(32)
1170      U,  S + '11102', Z                    " LOWERBOUND?
1171      Y,  S = 29

1172                                                                  " 7,58
1173                                                                  " MAL18 - 1
1174      Y,  JUMP(29)
1175      U,  S + '10102', Z                    " UNTIL?
1176      N,  S + '7502', Z                     " STEP?
1177      Y,  S = 60
1178      Y,  JUMP(25)
1179          B - 1
1180      U,  B - HONDERGRENS[MA3], Z
1181      Y,  SUBC(:HUNSTACK)
1182          JUMP( - 31)
1183      U,  S + '540', Z                      " LEFTDECLARATION?
1184      N,  JUMP(4)
1185          B - 1
1186      U,  B - HONDERGRENS[MA3], Z
1187      Y,  SUBC(:HUNSTACK)
1188          S = - M[B - 1]
1189      U,  S + '2210', Z                     " OWN?
1190      Y,  S = 52
1191      Y,  JUMP(12)
1192      U,  S + '240', Z                      " ARRAYSEGMENT?
1193      Y,  S = 52
1194      Y,  JUMP(9)
1195      U,  S + '1210', Z                     " ARRAY
1196      N,  S + '1040', Z                     " VALUE?
1197      N,  S - '500', Z                      " FORMALOPEN?
1198      Y,  JUMP(3)
1199          S = - M[B - 1]
1200      U,  S '*' '110', Z                    " TYPE?
1201      N,  S '*' '20', Z                     " SPECIFICATOR?
1202      Y,  S = 30
1203      N,  S = 0
1204          MFOUT[MA3] = S
1205          MA = B
1206          B + 2
1207          S = 9
1208          SE73
1209          MBOODSCHAR

1210                                                                  " 7,59
1211                                                                  " MCOMMA - 0
1212 MCOMMA(95)        more delimiter-texts
1213          S = - M[B - 1]
1214          S '*' 4, Z                      " OPERAND?
1215      Y,  S = M[B - 2]
1216      Y,  S - '2302', Z                   " PARAMETER OPEN?
```

```
1217     Y,  JUMP(27)
1218         $ = - M[B - 1]
1219     U,  $ '*' '404', Z                    " NUM OP?
1220     N,  JUMP(5) '
1221         $ = M[B - 2]                      " SUBSCRIPTOPEN?
1222     U,  $ - '1102', Z
1223     N,  $ - '10502', Z                    " FORBECOMES?
1224     Y,  JUMP(20)
1225         $ = - M[B - 1]
1226         $ '*' '104', Z                    " DESIGNATIONAL OPERAND?
1227     Y,  $ = M[B - 2]
1228     Y,  $ - '11502', Z                    " SWITCHBECOMES
1229     Y,  JUMP(15)
1230         $ = - M[B - 1]
1231     U,  $ '*' '404', Z
1232     N,  JUMP(5)
1233         $ = M[B - 2]
1234     U,  $ - '10102', Z                    " UNTIL?
1235     N,  $ - '11102', Z                    " LOWERBOUND?
1236     Y,  JUMP(5)
1237         $ = - M[B - 1]
1238         $ '*' '1004', Z                   " BOOLEAN OP?
1239     Y,  $ = M[B - 2]
1240     Y,  $ - '7302', Z                     " WHILE?
1241     N,  JUMP(8)
1242         B - 1
1243     U,  B - HONDERGRENS[HA3], Z
1244     Y,  SUBC(:HUNSTACK)
1245                                           " 7.59
1246                                           " HCOMMA - 1
1247         B - 1
1248     U,  B - HONDERGRENS[HA3], Z
1249     Y,  SUBC(:HUNSTACK)
1250         SE33
1251         HCYCLE1
1252         $ = M[B - 1]
1253         $ - '240', Z                      " ARRAYSEGMENT
1254     Y,  HNAS[HA3] = $                     " HNAS := 0
1255     Y,  JUMP(- 9)
1256         $ - '1444', Z                     " IDENTIFIER?
1257     N,  JUMP(50)                          " DAN FOUT
1258         B - 1
1259     U,  B - HONDERGRENS[HA3], Z
1260     Y,  SUBC(:HUNSTACK)
1261         $ = - M[B - 1]
1262     U,  $ + '540', Z                      " LEFTDECLARATION?
1263     N,  JUMP(4)
1264         B - 1
1265     U,  B - HONDERGRENS[HA3], Z
1266     Y,  SUBC(:HUNSTACK)
1267         $ = - M[B - 1]
1268     U,  $ '*' '110', Z                    " TYPE?
1269     N,  JUMP(8)
1270         $ = MT[3]
1271         GL0 = $
1272         SE33
1273         HTRANSNS
1274         HCOMMA[60]
1275         $ = '540'                         " LEFTDECLARATION
```

```
1276          MC = $                          " HOEF NIET NAAR BOVENGRENS TE KIJKEN
1277          JUMP(- 28)
1278      U,  $ + '1210', Z                   " ARRAY?
1279                                                                  " 7.59
1280                                                                  " HCOMMA - 2
1281      N,  JUMP(3)
1282          $ = 1
1283          HNAS[HA3] + $
1284          JUMP(4)
1285      U,  $ + '340', Z                    " FORMAL OPEN?
1286      N,  JUMP(7)
1287          $ = 1
1288          HNOF[HA3] + $
1289          $ = MT[3]
1290          GL0 = $
1291          SE33
1292          HTRANSNS
1293          HCYCLE1
1294      U,  $ + '1040', Z                   " VALUE?
1295      N,  JUMP(4)
1296          $ = MT[- 4]
1297          GL0 = $
1298          SE33
1299          HTRANSNS[117]
1300          $ '*' '20', Z                   " SPECIFICATOR?
1301      N,  JUMP(6)
1302          $ = 1
1303          HNOF[HA3] - $
1304          $ = MT[- 29]
1305          GL0 = $
1306          SE33
1307          HTRANSNS[155]
1308          $ = '1704'                        " ER WAS REEDS EEN UNSTACK GEDAAN
1309          MC = $
1310          SE33
1311          HAL18
```

```
 0                                                                    " 7.60
 1                                                                    " HAL20 - 0
 2 HAL20(40)
 3          $ = - M[B - 1]
 4          $ '*' '404', Z                        " NUM OP?
 5      Y,  $ = - M[B - 2]
 6      Y,  $ '*' '404', Z                        " NUM OP?
 7      N,  JUMP(16)
 8          B - 1
 9      U,  B - HONDERGRENS[HA3], Z
10      Y,  SUBC(:HUNSTACK)
11          $ = 3
12          HPRIORITY[HA3] = $
13          $ = MT[3]
14          GLO = $
15          SE33
16          HCOLLAPSE
17          HAL20[15]
18          $ = - M[B - 1]
19          $ '*' '404', Z                        " NUM OP
20      Y,  $ = M[B - 2]
21      Y,  $ - '10502', Z                        " FORBECOMES
22      Y,  $ = 7
23      Y,  JUMP(9)
24          $ = - M[B - 1]                        " AL20A
25      U,  $ '*' 4, Z                            " OPERAND?
26      Y,  JUMP(12)
27      U,  $ '*' 2, Z                            " EXPR START ADM?
28      N,  $ = 0
29      N,  JUMP(3)
30          $ + '10502', Z                        " FORBECOMES
31      N,  JUMP(7)
32          $ = 63
33          HFOUT[HA3] = $
34          MA = B

35                                                                   " 7.60
36                                                                   " HAL20 - 1
37          B + 2
38          $ = 9
39          SE73
40          HBOODSCHAR
41          B - 1
42      U,  B - HONDERGRENS[HA3], Z
43      Y,  SUBC(:HUNSTACK)
44          JUMP( - 19)

45                                                                   " 7.61
46                                                                   " HAL21 - 0
47 HAL21(43)
48          $ = - M[B - 1]
49          $ '*' '404', Z
50      Y,  $ = - M[B - 2], Z
51      Y,  $ '*' '404', Z
52      N,  JUMP(16)
53          B - 1
54      U,  B - HONDERGRENS[HA3], Z
55      Y,  SUBC(:HUNSTACK)
56          $ = 3
```

```
57          HPRIORITY[HA3] = S
58          $ = MT[3]
59          GL0 = $
60          $E33
61          HCOLLAPSE
62          HAL21[15]
63          $ = - M[B - 1]
64          $ '*' '404', Z
65      Y,  $ = M[B - 2]
66      Y,  $ = '7502', Z                       " STEP?
67      Y,  $ = 7
68      Y,  JUMP(12)
69          $ = - M[B - 1]                      " AL21A:
70      U,  $ '*' 4, Z
71      Y,  JUMP(15)
72      U,  $ '*' 2, Z
73      N,  $ = 0
74      N,  JUMP(6)
75      U,  $ + '7502', Z                       " STEP?
76      Y,  $ = 63
77      Y,  JUMP(3)
78          $ + '10502', Z                      " FORBECOMES
79      N,  JUMP(7)

80                                                                  " 7,61
81                                                                  " HAL21 - 1
82          $ = 60
83          HFOUT[HA3] = $
84          MA = B
85          B + 2
86          $ = 9
87          $E73
88          HBOODSCHAR
89          B - 1
90      U,  B - HONDERGRENS[HA3], Z
91      Y,  SUBC(:HSTACK)
92          JUMP(- 22)

93                                                                  " 7,62
94                                                                  " HAL22 - 0
95  HAL22(68)
96          $ = - M[B - 1]
97          $ '*' '404', Z                      " NUM OP?
98      Y,  $ = - M[B - 2], Z
99      Y,  $ '*' '404', Z                      " NUM OP?
100     N,  JUMP(35)
101         B - 1
102     U,  B - HONDERGRENS[HA3], Z
103     Y,  SUBC(:HUNSTACK)
104         $ = 9
105         HPRIORITY[HA3] = $
106         $ = MT[3]
107         GL0 = $
108         $E33
109         HCOLLAPSE
110         HAL22[15]
111         $ = M[B - 1]
112         $ - '7004', Z                       " RELATION?
113     Y,  HCOMFOUND[HA3] = B
114     N,  HCOMFOUND[HA3] = - B
```

```
115          $ = 3
116          HPRIORITY[HA3] = $
117          $ = MT[3]
118          GL0 = $
119          SE33
120          HCOLLAPSE
121          HAL22[26]
122          $ = M[B - 1]
123     U,   $ '*' '404', Z                    " NUM OP?
124     N,   JUMP(5)
125          $ = M[B - 2]
126     U,   $ - '10502', Z                    " FOR BECOMES?
127     N,   $ - '10102', Z                    " UNTIL?

128                                                                  " 7.62
129                                                                  " HAL22 - 1
130     Y,   JUMP(5)
131          $ = - M[B - 1]
132          $ '*' '1004', Z                   " BOOLEAN OPERAND?
133     Y,   $ = M[B - 2]
134     Y,   $ - '7302', Z
135     Y,   $ = HCOMFOUND[HA3], P
136     Y,   $ = 7
137     Y,   JUMP(18)
138          $ = - M[B - 1]                    " AL22A
139     U,   $ '*' 4, Z
140     Y,   JUMP(21)
141     U,   $ '*' 2, Z
142     N,   $ = 0
143     N,   JUMP(12)
144     U,   $ + '10102', Z                    " UNTIL?
145     Y,   $ = 63
146     Y,   JUMP(9)
147     U,   $ + '7502', Z                     " STEP?
148     Y,   $ = 60
149     Y,   JUMP(6)
150     U,   $ + '7302', Z                     " WHILE?
151     Y,   $ = 64
152     Y,   JUMP(3)
153          $ + '10502', Z                    " FORBECOMES
154     N,   JUMP(7)
155          $ = 58
156          HFOUT[HA3] = $
157          MA = B
158          B + 2
159          $ = 9
160          SE73
161          HBOODSCHAR

162                                                                  " 7,62
163                                                                  " HAL22 - 2
164          B - 1
165     U,   B - HONDERGRENS[HA3], Z
166     Y,   SUBC(:HUNSTACK)
167          JUMP(- 28)

168                                                                  " 7,63
169                                                                  " HAL23 - 0
170 HAL23(17)
171          $ = 1
```

```
172          HPRIORITY[HA3] = $
173          $ = MT[3]
174          GL0 = $
175          SE33
176          HCOLLAPSE
177          HAL23[7]
178          $ = M[B - 1]
179          $ - '1240', Z                    " STATEMENT?
180      Y,  $ = 47
181      N,  $ = 0
182          HFOUT[HA3] = $
183          MA = B
184          B + 2
185          $ = 9
186          SE73
187          HBOODSCHAR

188                                                                  " 7,64
189                                                                  " HAL24 - 0
190 HAL24(87)
191          $ = - M[B - 1]
192      U,  $ + '501', Z                     " BEGIN COMPOUND?
193      N,  JUMP(10)
194          $ = '301'                        " BEGIN UNKNOWN
195          M[B - 1] = $
196          $ = - 65
197          HFOUT[HA3] = $
198          B + 2
199          $ = 9
200          SE73
201          HBOODSCHAR
202          SE33
203          HCYCLE1[10]                      " STROOI
204      U,  $ + '1501', Z                    " BEGIN BLOCK?
205      Y,  $ = '1301'                       " BEGIN DEC
206      Y,  JUMP(- 12)
207      U,  $ + '240', Z                     " ARRAYSEGMENT?
208      Y,  JUMP(11)
209      U,  $ + '11502', Z                   " SWITCHBECOMES?
210      Y,  JUMP(9)
211      U,  $ + '1704', Z                    " IDENTIFIER?
212      N,  JUMP(10)
213          $ = - M[B - 2]
214      U,  $ '*' '110', Z                   " TYPE?
215      Y,  JUMP(4)
216          $ + '540', Z                     " LEFTDECLARATION?
217      Y,  $ = - M[B - 3]
218      Y,  $ '*' '110', Z                   " TYPE?
219      N,  JUMP(7)
220          $ = 70
221          MA = B
222          JUMP(- 26)

223                                                                  " 7,64
224                                                                  " HAL24 - 1
225          $ + '540', Z                     " LEFTDECLARATION?
226      Y,  $ = - M[B - 2]
227      Y,  $ '*' '110', Z                   " TYPE?
228      Y,  JUMP(- 7)
229          $ = 1
```

```
230          HPRIORITY[HA3] = $
231          $ = MT[3]
232          GL0 = $
233          $E33
234          HCOLLARSE
235          HAL24[43]
236          $ = - M[B - 1]
237      U,  $ '*' '104', Z                  " DESIGN OP?
238      N,  JUMP(4)
239          $ = M[B - 2]
240          $ - '11502', Z                  " SWITCHBECOMES?
241      Y,  JUMP(- 20)
242          JUMP(7)
243          $ + '1240', Z                   " STATEMENT?
244      N,  JUMP(5)
245          $ = M[B - 2]
246          $ - '3501', Z                   " PROCEDUREBODY?
247      Y,  $ = 39
248      N,  $ = 47
249          JUMP(- 51)
250          $ = HNEXTDEL[HA3]
251          $ - 106, Z                      " OWN?
252      Y,  $ = 0
253      Y,  JUMP(- 55)
254          $ = M[B - 1]                    " AL24A:
255      U,  $ - '640', Z                    " FORMALPARAMETER PART?
256      Y,  $ = 73

257                                                                  " 7.64
258                                                                  " HAL24 - 2
259      Y,  JUMP(- 59)
260      U,  $ - '1040', Z                   " VALUE?
261      Y,  JUMP(4)
262      U,  $ - '1704', Z                   " IDENTIFIER?
263      N,  JUMP(13)
264          $ = - M[B - 2]
265      U,  $ + '1040', Z                   " VALUE?
266      Y,  $ = 72
267      Y,  JUMP(- 67)
268      U,  $ '*' '20', Z                   " SPECIFICATOR?
269      Y,  $ = 71
270      Y,  JUMP(- 70)
271          $ + '540', Z                    " LEFTDECLARATION?
272      Y,  $ = - M[B - 3]
273      Y,  $ '*' '20', Z                   " SPECIFICATOR?
274      Y,  JUMP(- 6)
275          $ = 0
276          JUMP(- 76)
277          $ - '540', Z                    " LEFT DECLARATION?
278      Y,  $ = - M[B - 2]
279      Y,  $ '*' '20', Z                   " SPECIFICATOR?
280      Y,  JUMP(- 12)
281          JUMP(- 7)

282                                                                  " 7.65
283                                                                  " HAL27 - 0
284 HAL27(33)
285          $ = M[B - 1]
286      U,  $ - '2501', Z                   " PROCEDUREHEADING?
287      N,  JUMP(20)
```

```
288          $ = HNEXTDEL[HA3]
289      U,  $ - 115, Z                          " VALUE?
290      Y,  $ = 67
291      Y,  JUMP(10)
292      U,  $ - 92, Z                           " COMPLEX?
293      Y,  $ = 54
294      Y,  JUMP(7)
295      U,  $ - 114, R
296      Y,  JUMP(3)
297      U,  $ - 106, R
298      Y,  JUMP(- 6)
299          $ - 105, Z                          " END?
300      Y,  $ = 39
301      N,  $ = 55
302          HFOUT[HA3] = $
303          MA = B
304          B + 2
305          $ = 9
306          SE73
307          HBOODSCHAR
308          $ - '1704', Z                       " IDENTIFIER?
309          $ = HNEXTDEL[HA3]
310      N,  JUMP(- 12)
311      U,  $ - 81, Z                           " GOTO?
312      N,  $ - 82, Z                           " EOR?
313      N,  $ - 12, Z                           " IF?
314      N,  $ - 10, Z                           " BEGIN?
315      Y,  $ = 74
316      Y,  JUMP(- 15)
317          JUMP(- 9)                           " N.B. CONDITIE IS NO
318                                                  " 7.66
319                                                  " HAL29 - 0
320  HAL29(13)
321          $ = M[B - 1]
322      U,  $ - '1140', Z                       " VALUELIST?
323      Y,  $ = 67
324      Y,  JUMP(3)
325          $ - '640', Z                        " FORMALPARAMETERPART?
326      Y,  $ = 73
327      N,  $ = 0
328          HFOUT[HA3] = $
329          MA = B
330          B + 2
331          $ = 9
332          SE73
333          HBOODSCHAR

334                                                  " 7,67
335                                                  " HVULBIB - 0
336  HVULBIB(334)          this section performs local
337          $ = 1         initialisation of the identifierlist
338          HTNS[HA3] = $ with the names of the library procedures
339          F = 0         so they look as if declared
340          HLRP[HA3] = G
341          $ = :HBL, Z
342          $UBC(MS)
343          $E38
344          G = HCBH[HA3]
345          DO(MC[- 1])
```

```
346         $ = 0
347         HTELLER[HA3] = $
348         $ - MBIB, Z
349     Y,  JUMP(41)
350         G = - HTNS[HA3]
351         $ = :HNS, Z
352         SUBC(MS)
353         $E38
354         G = - HTNL[HA3]
355         $ = :HNL, Z
356         SUBC(MS)
357         $E38
358         G = HTELLER[HA3]
359         DO(MC[- 1])
360         DO(MC[- 1])
361         F = - 1
362         G - HTNS[HA3]
363         $ = :HNS, Z
364         SUBC(MS)
365         SE38
366         F = - 1
367         G - HTNL[HA3]
368         $ = :HNL, Z

369                                                          " 7.67
370                                                          " MVULBIB - 1
371         SUBC(MS)
372         $E38
373         $ = HTELLER[HA3]
374         $ + :MT[34]
375         G = MS
376         DO(MC[- 1])
377         DO(MC[- 1])
378         $ = 2
379         HTNS[HA3] + $
380         HTNL[HA3] + $
381         G = - HTNL[HA3]
382         $ = :HNL, Z
383         SUBC(MS)
384         $E38
385         $ = HTELLER[HA3]
386         $ + :MT[22 + HBIB]
387         G = MS
388         DO(MC[- 1])
389         $ = 1
390         HTNL[HA3] + $
391         PLUSS(HTELLER[HA3])
392         JUMP(- 43)
393         F = - 1
394         $ = :HBL, Z
395         SUBC(MS)
396         $E38
397         F = 0
398         DO(MC[- 1])
399         F = - 2
400         $ = :HBL, Z
401         SUBC(MS)
402         $E38

403                                                          " 7.67
```

```
404
405         F = HBIB
406         DO(MC[- 1])
407         $ = 3
408         HNEXTBLOCK[HA3] + S
409         $E33
410         HVULBIB1

411         '00002 001'
412         '00002 001'
413         '10002 004'
414         '10002 002'
415         '10002 002'
416         '10002 002'
417         '10002 002'
418         '10002 002'
419         '10002 002'
420         '10002 002'
421         '10002 002'
422         '10002 002'
423         '10002 002'
424         '20002 002'
425         '10002 002'
426         '10002 002'
427         '10002 010'
428         '20002 040'
429         '10002 001'
430         '20002 001'
431         '30002 001'
432         '20002 001'
433         '20002 001'
434         '10002 001'
435         '10002 001'
436         '10002 001'
437         '10002 002'
438         '20002 004'
439         '10002 040'
440         '10002 040'
441         '10002 040'
442         '20002 040'
443         '20002 040'
444         '10002 040'
445         '10002 040'
446         '10002 040'
447         '20002 010'
448         '10002 010'
449         '10002 010'
450         '10002 010'
451         '20002 010'
452         '10002 010'
453         '10002 010'
454         '10002 040'
455         '00002 040'
456         '00002 040'
457         '00002 040'
458         '10002 040'
459         '00002 040'
460         '00002 040'
461         '00002 040'
462         '20002 040'
```

description of procedure of type and number of parameters

```
463          '10002 040'
464          '10002 040'
465          '10002 040'
466          '20002 040'
467          '10002 040'
468          '10002 040'
469          '00002 040'
470          '00002 040'
471          '10002 040'
472          '30002 040'
473          '30002 040'
474          '30002 040'
475          '10002 040'
476          '10002 040'
477          '10002 040'
478          '10002 040'
479          '10002 040'
480          '20002 040'
481          '30002 040'
482          '30002 040'
483          '30002 040'
484          '30002 040'
485          '30002 040'
486          '30002 040'
487          '30002 040'
488          '40002 040'
489          '40002 040'
490          '40002 040'
491          '10002 040'
492          '00002 040'
493          '00002 040'
494          '10002 040'
495          '00002 040'
496          '10002 040'
497          '10002 040'
498          '10002 040'
499          '00002 001'
500          '00002 001'
501          '00002 001'
502          '10002 001'
503          '10002 001'
504          '00002 002'
505          '00002 002'
506          '00002 002'
507          '00002 002'
508          '10002 002'
509          '10002 001'
510          '00002 001'
511          '00002 001'
512          '00002 001'
513          '10002 001'
514          '20002 040'
515          '20002 040'
516          '20002 040'
517          '30002 040'
518          '10002 040'
519          '10002 040'
520          '30002 040'
521          '30002 040'
522          '030 002 002'
```

```
523         '060 002 040'
524         '100 002 040'
525         '030 002 002'
526         '120 002 040'
527         '120 002 040'
528         '120 002 040'
529         '000 002 040'
530         '020 002 040'
531         '020 002 040'
532         '030 002 001'
533         '030 002 001'
534         '000 002 040'
535         '000 002 002'
536         '000 002 001'
537         '000 002 001'
538         '010 002 001'
539         '000 002 010'
540         '010 002 040'
541         '010 002 040'
542         '000 002 001'

543         COCT1
544         COCT2
545         UINVGEC
546         UINVRE
547         UINVIM
548         UINVMOD
549         UINVENTIER
550         UINVCOS
551         UINVSIN
552         UINVARCTAN
553         UINVEXP
554         UINVSQRT
555         UINVLN
556         UINVCOMPOSE
557         JREADTAPE
558         JREADBACK
559         JINSRTAPE
560         JWRITETAPE
561         COCT1
562         UINVBIT
563         UINVSHIFT
564         UINVAND
565         UINVOR
566         UINVSIGN
567         UINVHEAD
568         UINVTAIL
569         UINVABS
570         UINVCOM
571         CRUTEXT2
572         CRUTEXT1
573         CRUTEXT1
574         CRUTEXT1
575         CRUSPACE1
576         CRUSPACE2
577         CRUSPACE1
578         CRUSPACE1
579         CRUSYM1
580         CRUSYM2
581         CRUSYM1
```

invariant addresses of these procedures

```
582           CRUSYM1
583           CRUCHARE1
584           CRUCHARE2
585           CRUCHARE1
586           CRUNLCR1
587           CRUNLCR2
588           CRUNLCR1
589           CRUNLCR1
590           CRUTAB1
591           CRUTAB2
592           CRUTAB1
593           CRUNOUT
594           CRUOCT1
595           CRUOCT2
596           CRUOCT1
597           CRUOCT1
598           CRURUNOUT1
599           CRURUNOUT2
600           CRURUNOUT1
601           CENDTRDOC2
602           CENDTRDOC1
603           CENDTRDOC1
604           CABSFIXT
605           CFIXT
606           CFLOT
607           CRRNTX
608           CRRNTX
609           CRNCM2
610           CRNCM1
611           CRNCM1
612           CRNCM1
613           CABSFIXP2
614           CABSFIXP1
615           CFIXP2
616           CFIXP1
617           CFLOP2
618           CFLOP1
619           CFLOP1
620           CABSFIXP1
621           CFIXP1
622           CFLOP1
623           CRRINTTEXT
624           CTAB
625           CNEWPAGE
626           CRRSYM
627           CNLCR
628           CRRCHAR
629           CSPACE
630           CARRIAGE
631           CQCT1
632           CHARF2
633           CHARF1
634           CHARF1
635           CNUMINSR
636           CNUM2
637           CNUM1
638           CNUM1
639           CNUM1
640           CNUM1
641           CSYMINSR1
```

```
642           CSYM2
643           CSYM1
644           CSYM1
645           CSYM1
646           CBACKCHARE
647           CBACKSYM
648           CBACKOCT
649           CINICHARE
650           CINIRATA
651           CSKIPRATA
652           CABSFIXP1
653           CFIXP1
654           UINVPLOT
655           UINVPLOTFRAME
656           UINVPLOTTEXT
657           UINVPLOTCURVE
658           UINVFIXPLOT
659           UINVABSFIXPLOT
660           UINVFLOPPLOT
661           UINVENDPLDOC
662           JOPENTAPE
663           JCLOSETAPE
664           JWRITEPOSITION
665           JREADPOSITION
666           JTAPESERR
667           CLINENUMBER
668           UINVSETIME
669           KARAKTERIN
670           KARAKTERUIT
671           INAL
672           UTELESTRING
673           CSETSTRING
674           CSTRINGSYM

675                                                          " 7,68
676                                                          " HVULBIB1 - 0
677 HVULBIB1(430)
678           $ = 0
679           HTELLER[HA3] = $
680           G = - $
681           $ = :HCL, Z
682           SUBC(MS)
683           SE38
684           $ = :MT[31]
685           $ + HTELLER[HA3]
686           G = MS
687           DO(MC[- 1])
688           $ = 1
689           PLUS$(HTELLER[HA3])
690       U,  $ - HBIB[1], Z
691       N,  JUMP(- 12)
692           HCNT[HA3] = G
693           $ = 0
694           HTELLER[HA3] = $
695       U,  $ - HCNT[HA3], Z
696       Y,  JUMP(11)
697           G = - $
698           $ = :HIL, Z
699           SUBC(MS)
700           SE38
```

```
701          $ = :MT[15 + MB!B]
702          $ + HTELLER[HA3]
703          G = MS
704          DO(MG[- 1])
705          $ = 1
706          PLUSS(HTELLER[HA3])
707          JUMP(- 13)
708          S = MB!B
709          HCN![HA3] = $

710                                                                  " 7.68
711                                                                  " HVULB!B1 - 1

712          B + 2
713          $ = 9
714          SE73
715          HBLOCKINT
716          SE33
717          HCYCLE1
```

initialisation of corresponding list (contains $ indices in identifierlist where the consecutive identifiers begin)

```
718     0
719     1
720     2
721     3
722     4
723     5
724     6
725     8
726     9
727    10
728    12
729    13
730    14
731    15
732    17
733    19
734    21
735    23
736    26
737    27
738    28
739    30
740    31
741    32
742    33
743    34
744    35
745    36
746    37
747    39
748    41
749    43
750    45
751    47
752    50
753    53
754    55
755    57
756    59
757    61
758    63
```

759	65
760	68
761	71
762	73
763	75
764	77
765	79
766	81
767	83
768	85
769	87
770	89
771	91
772	93
773	95
774	98
775	101
776	104
777	107
778	110
779	113
780	115
781	116
782	117
783	119
784	121
785	123
786	125
787	127
788	129
789	132
790	135
791	137
792	139
793	141
794	143
795	144
796	147
797	149
798	151
799	154
800	155
801	157
802	159
803	160
804	162
805	164
806	166
807	168
808	170
809	172
810	174
811	176
812	177
813	178
814	179
815	180
816	181
817	183
818	184

```
819  185
820  187
821  188
822  191
823  193
824  195
825  197
826  199
827  201
828  203
829  204
830  205
831  208
832  210
833  213
834  215
835  218
836  220
837  223
838  225
839  228
840  232
841  235
842  238
843  241
844  242
845  245
846  248
847  250
848  253
849 256
850 259

851 '063 47 70 01 '    initialisation of identifierlist
852 '063 47 70 02 '
853 '020 16 14 77 '
854 '033 16 77 00 '
855 '022 26 77 00 '
856 '026 30 15 77 '
857 '016 27 35 22 '
858 '016 33 77 00 '
859 '014 30 34 77 '
860 '034 22 27 77 '
861 '012 33 14 35 '
862 '012 27 77 00 '
863 '016 41 31 77 '
864 '034 32 33 35 '
865 '025 27 77 00 '
866 '047 63 61 64 '
867 '063 67 51 77 '
868 '066 51 45 50 '
869 '070 45 64 51 '
870 '066 51 45 50 '
871 '046 45 47 57 '
872 '055 62 67 64 '
873 '070 45 64 51 '
874 '073 66 55 70 '
875 '051 70 45 64 '
876 '051 77 00 00 '
877 '063 47 70 77 '
```

```
878 '046 55 70 77 '
879 '067 54 55 52 '
880 '070 77 00 00 '
881 '045 62 50 77 '
882 '063 66 77 00 '
883 '034 22 20 27 '
884 '054 51 45 50 '
885 '070 45 55 60 '
886 '012 13 34 77 '
887 '014 30 26 77 '
888 '064 71 62 70 '
889 '051 74 70 02 '
890 '064 71 62 70 '
891 '051 74 70 01 '
892 '064 71 70 51 '
893 '074 70 77 00 '
894 '064 71 62 70 '
895 '051 74 70 77 '
896 '064 71 62 67 '
897 '064 45 47 51 '
898 '064 71 62 67 '
899 '064 45 47 51 '
900 '002 77 00 00 '
901 '064 71 62 67 '
902 '064 45 47 51 '
903 '001 77 00 00 '
904 '064 71 67 64 '
905 '045 47 51 77 '
906 '064 71 62 67 '
907 '075 61 77 00 '
908 '064 71 62 67 '
909 '075 61 02 77 '
910 '064 71 62 67 '
911 '075 61 01 77 '
912 '064 71 67 75 '
913 '061 77 00 00 '
914 '064 71 62 47 '
915 '054 45 66 52 '
916 '064 71 62 47 '
917 '054 45 66 52 '
918 '002 77 00 00 '
919 '064 71 62 47 '
920 '054 45 66 52 '
921 '001 77 00 00 '
922 '064 71 62 62 '
923 '060 47 66 77 '
924 '064 71 62 62 '
925 '060 47 66 02 '
926 '064 71 62 62 '
927 '060 47 66 01 '
928 '064 71 62 60 '
929 '047 66 77 00 '
930 '064 71 62 70 '
931 '045 46 77 00 '
932 '064 71 62 70 '
933 '045 46 02 77 '
934 '064 71 62 70 '
935 '045 46 01 77 '
936 '066 71 62 63 '
937 '071 70 77 00 '
```

```
938 '064 71 62 63 '
939 '047 70 77 00 '
940 '064 71 62 63 '
941 '047 70 02 77 '
942 '064 71 62 63 '
943 '047 70 01 77 '
944 '064 71 54 51 '
945 '064 77 00 00 '
946 '064 71 62 66 '
947 '071 62 63 71 '
948 '070 77 00 00 '
949 '064 71 62 66 '
950 '071 62 63 71 '
951 '070 02 77 00 '
952 '064 71 62 66 '
953 '071 62 63 71 '
954 '070 01 77 00 '
955 '051 62 50 64 '
956 '071 62 50 63 '
957 '047 02 77 00 '
958 '051 62 50 64 '
959 '071 62 50 63 '
960 '047 01 77 00 '
961 '051 62 50 64 '
962 '071 62 50 63 '
963 '047 77 00 00 '
964 '045 46 67 52 '
965 '055 74 70 77 '
966 '052 55 74 70 '
967 '052 60 63 70 '
968 '064 66 55 62 '
969 '070 77 00 00 '
970 '031 33 22 27 '
971 '035 77 00 00 '
972 '064 71 62 71 '
973 '061 02 77 00 '
974 '064 71 62 71 '
975 '061 01 77 00 '
976 '064 71 62 47 '
977 '054 77 00 00 '
978 '064 71 62 71 '
979 '061 77 00 00 '
980 '064 71 62 45 '
981 '046 67 52 55 '
982 '074 02 77 00 '
983 '064 71 62 45 '
984 '046 67 52 55 '
985 '074 01 77 00 '
986 '064 71 62 52 '
987 '055 74 02 77 '
988 '064 71 62 52 '
989 '055 74 01 77 '
990 '064 71 62 52 '
991 '060 63 02 77 '
992 '064 71 62 52 '
993 '060 63 01 77 '
994 '052 60 63 64 '
995 '064 71 62 45 '
996 '046 67 52 55 '
997 '074 77 00 00 '
```

```
 998 '064 71 62 52 '
 999 '055 74 77 00 '
1000 '064 71 62 52 '
1001 '060 63 77 00 '
1002 '064 66 55 62 '
1003 '070 70 51 74 '
1004 '070 77 00 00 '
1005 '070 45 46 77 '
1006 '062 51 73 64 '
1007 '045 53 51 77 '
1008 '064 66 67 75 '
1009 '061 77 00 00 '
1010 '062 60 47 66 '
1011 '064 66 47 54 '
1012 '045 66 77 00 '
1013 '067 64 45 47 '
1014 '051 77 00 00 '
1015 '047 45 66 66 '
1016 '055 45 53 51 '
1017 '066 51 54 51 '
1018 '064 77 00 00 '
1019 '047 54 45 66 '
1020 '052 02 77 00 '
1021 '047 54 45 66 '
1022 '052 01 77 00 '
1023 '047 54 45 66 '
1024 '052 77 00 00 '
1025 '062 71 61 55 '
1026 '062 67 64 77 '
1027 '062 71 61 02 '
1028 '062 71 61 01 '
1029 '066 51 45 50 '
1030 '033 16 12 15 '
1031 '062 71 61 77 '
1032 '067 75 61 55 '
1033 '062 67 64 77 '
1034 '067 75 61 02 '
1035 '067 75 61 01 '
1036 '066 51 67 75 '
1037 '061 77 00 00 '
1038 '067 75 61 77 '
1039 '046 45 47 57 '
1040 '047 54 45 66 '
1041 '052 77 00 00 '
1042 '046 45 47 57 '
1043 '067 75 61 77 '
1044 '046 45 47 57 '
1045 '063 47 70 77 '
1046 '055 62 55 47 '
1047 '054 45 66 52 '
1048 '055 62 55 64 '
1049 '045 70 45 77 '
1050 '067 57 55 64 '
1051 '064 45 70 45 '
1052 '045 46 67 52 '
1053 '055 74 64 77 '
1054 '052 55 74 64 '
1055 '064 60 63 70 '
1056 '064 60 63 70 '
1057 '052 66 45 61 '
```

```
1058 '051 77 00 00 '
1059 '064 60 63 70 '
1060 '070 51 74 70 '
1061 '064 60 63 70 '
1062 '047 71 66 72 '
1063 '051 77 00 00 '
1064 '052 55 74 64 '
1065 '060 63 70 77 '
1066 '045 46 67 52 '
1067 '055 74 64 60 '
1068 '063 70 77 00 '
1069 '052 60 63 64 '
1070 '060 63 70 77 '
1071 '051 62 50 64 '
1072 '060 63 50 63 '
1073 '047 77 00 00 '
1074 '063 64 51 62 '
1075 '070 45 64 51 '
1076 '047 60 63 67 '
1077 '051 70 45 64 '
1078 '051 77 00 00 '
1079 '073 66 55 70 '
1080 '051 64 63 67 '
1081 '055 70 55 63 '
1082 '062 77 00 00 '
1083 '066 51 45 50 '
1084 '064 63 67 55 '
1085 '070 55 63 62 '
1086 '071 62 55 70 '
1087 '067 52 66 51 '
1088 '051 77 00 00 '
1089 '060 55 62 51 '
1090 '062 71 61 46 '
1091 '051 66 77 00 '
1092 '070 55 61 51 '
1093 '057 45 66 45 '
1094 '057 70 51 66 '
1095 '055 62 77 00 '
1096 '057 45 66 45 '
1097 '057 70 51 66 '
1098 '071 55 70 77 '
1099 '055 62 45 60 '
1100 '053 77 00 00 '
1101 '064 66 55 62 '
1102 '070 67 70 66 '
1103 '055 62 53 77 '
1104 '067 51 70 67'
1105 '070 66 55 62'
1106 '053 77 00 00'
1107 '067 70 66 55'
1108 '062 53 67 75'
1109 '061 77 00 00'

1110                                                        " 7,69
1111                                                        " HAL40 = 0
1112 HAL40(131)
1113          $ = 7
1114          SE0                    " NU BLOKHOOGTES
1115          $ = 25                 " LASTSYMBOL = MA[2]; LEZER = MA[3]
1116          SE1
```

```
1117          $ = HNEXTDEL
1118      U,  $ - 88, Z
1119      Y,  $ = 256
1120      Y,  JUMP(2)
1121      U,  $ - 200, P
1122      Y,  $ = - 256
1123      Y,  HNEXTDEL + $
1124      Y,  $ = HNEXTDEL
1125          MA[2] = $
1126          B + 2
1127          $ = 9
1128          $E73
1129          HSYM
1130          MA[3] = G
1131          E + 1, Z
1132      N,  HCOMFOUND = - B
1133      Y,  $ = - HCOMFOUND, P                " FOUT 20 NIET NET GEGEVEN ?
1134      Y,  HCOMFOUND = B
1135      N,  E + 1, Z
1136      N,  JUMP(57)
1137          G = MT[101]                       " NLCB NLCB REGELNUMMER
1138          SUBC(:MT[66])                     " PRINTTEXT
1139          $ = HREGELDEL
1140          SUBC(:MT[76])                     " ABSEXT
1141          G = MT[98]                        "   DELIMITER
1142          SUBC(:MT[62])                     " PRINTTEXT
1143          $ = HNEXTDEL
1144      U,  $ - 344, Z                        " BECOMES?

1145                                                                  " 7.69
1146                                                                  " HAL40 - 1
1147      Y,  $ = 90                            " COLON
1148      Y,  SUBC(:MT[84])                     " PRSYM($)
1149      Y,  $ = 70                            " EQUAL
1150          SUBC(:MT[82])                     " PRSYM($)
1151          G = MT[91]                        "    RANGNUMMER
1152          SUBC(:MT[54])                     " PRINTTEXT
1153          $ = HRANGDEL
1154          SUBC(:MT[64])                     " ABSEXT
1155          G = MT[20]                        " NLCB LAATST GEKOZEN CORRECTE SYMBOOL
1156          SUBC(:MT[50])                     " PRINTTEXT
1157          $ = MA[2]
1158      U,  $ - 344, Z                        " BECOMES?
1159      Y,  $ = 90                            " COLON
1160      Y,  SUBC(:MT[72])                     " PRSYM($)
1161      Y,  $ = 70                            " EQUAL
1162          SUBC(:MT[70])                     " PRSYM($)
1163          G = MT[13]                        "    STAAT OP REGEL
1164          SUBC(:MT[42])                     " PRINTTEXT
1165          $ = HREGELLEEG, P
1166          $ = HREGELNR
1167      Y,  $ - 1
1168          SUBC(:MT[50])                     " ABSEXT
1169          $ = MA[3]
1170          $ + 1, Z
1171      Y,  $ = MT[72]                        " BOODSCHAP 20
1172      N,  $ = MT[72]                        " BOODSCHAP 45
1173          G = $
1174          SUBC(:MT[32])                     " PRINTTEXT
1175          JUMP(- 48)
```

```
1176          HAL40[63]                          " NLCR LAATST GELEZEN CORRECTE SYMBOOL
1177          HAL40[75]                          " STAAT OP REGEL
1178          '167 025 012'                      " NLCR LAATST GELEZEN CORRECTE SYMBOOL

1179                                                                          " 7,69
1180                                                                          " HAL40 - 2
1181          '012 035 034'
1182          '035 135 020'
1183          '016 025 016'
1184          '043 016 027'
1185          '135 014 030'
1186          '033 033 016'
1187          '014 035 016'
1188          '135 034 042'
1189          '026 013 030'
1190          '030 025 135'
1191          '135 776 000'
1192          '135 135 135'                      "     STAAT OP REGEL
1193          '034 035 012'
1194          '012 035 135'
1195          '030 031 135'
1196          '033 016 020'
1197          '016 025 776'
1198          E - 65, P
1199      Y,  E = - E
1200      Y,  E + 58, P
1201      N,  JUMP(4)
1202          G = HREGELNR
1203          HREGELDEL = G
1204          G = HRANGNR
1205          HRANGDEL = G
1206          S = MA[3]
1207      Y,  HNEXTDEL = S
1208          JUMP(- 80)
1209          B + 2                              " SUBROUTINE PRINTTEXT
1210          SE112
1211          S = 13
1212          SE73

1213                                                                          " 7,69
1214                                                                          " HAL40 - 3
1215          CPRINTTEXT
1216          S = MC[- 1]
1217          S '*' - HRAG
1218          G = S
1219          S = :MT[0]
1220          S '*' HRAG
1221          S + G
1222          GOTOR(S)
1223          HTELLER = S                        " SUBROUTINE ABSFIXT
1224          B + 2
1225          SE76
1226          0
1227          4
1228          SE76
1229          0
1230          0
1231          S = :HTELLER
1232          SE78
1233          S = 21
```

```
1234          SE73
1235          CARSEIXT
1236          JUMP(- 21)
1237          HTELLER = $                          " SUBROUTINE RRSYM
1238          B + 2
1239          $ = : HTELLER
1240          SE78
1241          $ = 13
1242          SE73
1243          CRRSYM
1244          JUMP(- 29)
1245          HBCODSCHAR[143]                      " NLCR NLCR REGELNUMMER
1246          HBCODSCHAR[148]                      " ..DELIMITER
1247          HBCODSCHAR[153]                      " ...RANGNUMMER
1248          HLYST[462]                           " BOODSCHAP 20
1249          HLYSTA[433]                 " BOODSCHAP 45

1250                                                                    " 7,70
1251                                                                    " HDRUM - 0
1252 HDRUM(115)    to read algol-text from drum
1253          MA = B                                    (num. procedures)
1254          $ = M[B - 1]
1255      U,  $ - '301', Z                         " BEGIN UNKNOWN?
1256      N,  $ - '1301', Z                        " BEGINDECLARATION?
1257      N,  $ = 0
1258      N,  JUMP(104)
1259          $ = HWIJZER
1260      U,  $ = HLAATSTE[MA3], R
1261      N,  $ - 1
1262      N,  HWIJZER = $                          " VERWIJDER LIBRARYHAAK UIT TEXTPASS2
1263          HSCHADUW[MA3] = $
1264          B + 2
1265          $ = 9
1266          SE73
1267          HRUND
1268          $ = HNEXTDEL[MA3]
1269      U,  $ - 91, Z                            " SEMICOLON?
1270          G = T
1271          HLAATSTE[MA3] = G
1272      N,  $ - 87, Z                            " COMMA?
1273      N,  $ = 0
1274      N,  JUMP(88)
1275      Y,  $ = HTELLER[MA3]
1276      Y,  $ - '1704', Z                        " IDENTIFIER
1277      N,  $ = 30
1278      N,  JUMP(84)
1279          $ = - HSCHADUW[MA3]
1280          $ + HWIJZER
1281          HWIJZER - $
1282          $ - 2, R                             " TENMINSTE EEN NLCR GEPASSEERD
1283      N,  JUMP(15)
1284          G = - HWIJZER

1285                                                                    " 7,70
1286                                                                    " HDRUM - 1
1287          $ = :HTEXTPASS2, Z
1288          SUBC(M$)
1289          SE38
1290          F = - 7799
1291          DO(MC[- 1])
```

```
1292          F = - 1
1293          G - HWIJZER
1294          S = :HTEXTPASS2, Z
1295          SUBC(MS)
1296          SE38
1297          G = HREGELDEL[HA3]
1298          DO(MC[- 1])
1299          S = 2
1300          HWIJZER + S
1301          G = - HCIN[HA3]
1302          S = :HCL, Z
1303          SUBC(MS)
1304          SE39
1305          MC = G                          " BEGININDEX IN HIL
1306          F = - 1
1307          G - HCIN[HA3]
1308          S = :HCL, Z
1309          SUBC(MS)
1310          SE39
1311          G - M[B - 1]
1312          MC = G                          " LENGTE IN HIL
1313          S = 0
1314          MC = S                          " TELLER IN HDRCL
1315          A = MT[46], Z                   " HDRCL
1316          A + M[B - 1]
1317          SUBCD(:RSE41)
1318          S = G

1319                                                              " 7.70
1320                                                              " HDRUM - 2
1321     U,   S + 1, Z                        " EINDMARKER ?
1322     Y,   S = 91
1323     Y,   JUMP(43)
1324          S - M[57]
1325          S - M[B - 2], Z
1326     N,   JUMP(23)
1327          MC = E                          " BEGIN- EN EINDINDEX IN HDRIL
1328          MC = F                          " TELLER IN HDRIL ; GELIJK 1= IRUE
1329          S = M[B - 7]
1330          MC = S                          " INDEX IN HIL
1331          G = - M[B - 1]
1332          S = :HIL, Z
1333          SUBC(MS)
1334          SE39
1335          MC = G
1336          A = MT[28], Z                   " HDRIL
1337          A + M[B - 4]
1338          SE39
1339          G - MC[- 1], Z
1340          S = T
1341          M[B - 2] = S
1342          S = 1
1343          M[B - 1] + S
1344          PLUSS(M[B - 3])
1345     U,   S - M[B - 4], Z
1346     N,   S = - M[B - 2], P
1347     N,   JUMP(- 17)
1348          S = M[B - 2], P
1349          B - 5
1350     N,   S = 1
```

```
1351      N,  M[B - 1] + S
1352      N,  JUMP(- 36)

1353                                                                  " 7,70
1354                                                                  " HDRUM - 3
1355          HDRUM[HA3] = B
1356          HTEXTGEWENST[HA3] = - B
1357          A = MT[10], Z                          " HDRINVAR
1358          A + M[B - 1]
1359          SE39
1360          HSTRINGVARIABLE[HA3] = G
1361          F = - 0
1362          HSTRINGVARIABLE[HA3][1] = F
1363          B - 3
1364          SE33
1365          HCYCLE1
1366          HDRCL
1367          HDRIL
1368          HDRINVAR
1369          HFOUT[HA3] = S
1370          B + 2
1371          S = 9
1372          SE73
1373          HBOODSCHAR

1374                                                                  " 7,71
1375                                                                  " HDRCL - 0
1376 HDRCL(2)
1377          + 0
1378          - 1
```

```
1379                                                                  " 7. 72
1380                                                                  " HTAPE - 0
1381 HTAPE(55)   to enable reading algol-text from magnetic tape
1382          MA = B
1383          S = 1
1384          HWIJZER - S                            " REMOVE MIAPE FROM TEXTPASS2
1385          S = M[B - 1]                           " TOP
1386      U,  S - '40', Z                            " UNIVERSE ?
1387      Y,  JUMP(3)
1388      U,  S '*' 1, Z                             " ¬ STATEMENTSTART ADMISSIBLE ?
1389      N,  S - '2000', P                          " STATEMENT THEN ETC.
1390      Y,  JUMP(140)                              " BOODSCHAP 0
1391          SUBC(:MT[87])                          " RUND AND G := NUMBER
1392          S = HNEXTDEL[HA3]
1393      U,  S - 91, Z                              " SEMICOLON ?
1394      Y,  HLAATSTE[HA3] = B
1395      N,  HLAATSTE[HA3] = - B
1396      Y,  F + 0, Z
1397      N,  S - 87, Z                              " COMMA ?
1398      N,  JUMP(132)                              " BOODSCHAP 0
1399      U,  S = HERRORFOUND[HA3], P
1400      Y,  JUMP(26)
1401          S = HTAPENR[HA3]
1402      U,  S - G, Z                               " TAPENR = NUMBER ?
1403      Y,  JUMP(23)
1404          MC = G                                 " SAVE NUMBER
1405      U,  S + 0, Z
1406      Y,  JUMP(9)                                " CLOSETAPE NOT NECESSARY
1407          B + 2
```

```
1408          $ = :HTAPENR[HA3]
1409          SE78
1410          DOS(RSE89)
1411          - 0
1412          - 0
1413          $ = 17
1414          SE73
1415          JCLOSETAPE
1416          $ = MC[ - 1]                          " NUMBER
1417          HTAPENR[HA3] = S, Z
1418      Y,  JUMP(8)
1419          B + 2
1420          $ = :HTAPENR[HA3]
1421          SE78
1422          G = MT[13]                            " $ALGOL$
1423          SE112
1424          $ = 17
1425          SE73
1426          JOPENTAPE
1427      U,  $ = HLAATSTE[HA3], P
1428      Y,  JUMP(5)
1429          HLEZENVANTAPE[HA3] = B
1430          $ = 1
1431          HGROEP[HA3] = $
1432          $ = 0
1433          HGROEPEND[HA3] = $
1434          SE33
1435          HCYCLE1
1436          CALGOL                                " TO BE FOLLOWED DIRECTLY BY CNEXTGROUP
1437                                                                " 7, 73
1438                                                                " CNEXTGROUP - 0
1439 CNEXTGROUP(97)
1440          $ = HGROEP
1441          $ - HGROEPEND, P
1442      N,  JUMP(23)
1443          HLEZENVANTAPE = - B
1444      U,  $ = HERRORFOUND, P
1445      N,  $ = ULIST
1446      N,  HTEXTGEWENST = $
1447      U,  $ = HLAATSTE, P
1448      Y,  SUBCD(:CTERUGADRES)
1449          SUBC(:MT[32])                         " RUND AND G := NUMBER
1450          HGROEP = G
1451          $ = HNEXTDEL
1452      U,  $ - 65, Z                             " DASH ?
1453      Y,  SUBC(:MT[28])                         " RUND ETC.
1454          HGROEPEND = G
1455      Y,  $ = HNEXTDEL
1456      U,  $ - 91, Z                             " SEMICOLON ?
1457      Y,  HLAATSTE = B
1458      N,  HLAATSTE = - B
1459      N,  $ - 87, Z                             " COMMA ?
1460      N,  JUMP(73)                              " BOODSCHAP 0
1461      U,  $ = HERRORFOUND, P
1462      Y,  JUMP( - 16)
1463          HLEZEN VAN TAPE = B
1464          HTEXTGEWENST = - B
1465          JUMP( - 26)
1466          B + 2
```

```
1467          $ = :HTAPENR
1468          $E78
1469          $ = :HGROEP
1470          $E78
1471          $E76
1472          0
1473          0
1474          $ = 21
1475          $E73
1476          JREADPOSITION
1477          F - 1, Z
1478      Y,  JUMP( - 36)
1479          $ = 1
1480          HGROEP + $
1481          CTERUG

1482                                                          " 7.73
1483                                                          " CNEXTGROUP - 1
1484          $ = HWIJZER
1485          HSCHADUW = $                  " SUBROUTINE RUND AND G := NUMBER
1486          B + 2
1487          $ = 9
1488          $E73
1489          WRUND
1490          $ = HTELLER
1491      U,  $ - '2404', Z                 " NUMBER ?
1492      N,  JUMP(43)
1493      U,  $ = HERRORFOUND, P
1494      Y,  JUMP(16)                      " TO EXIT SUBROUTINE
1495          $ = HSCHADUW
1496          MC = - $                      " INDEX IN TEXTPASS2
1497          G = M[B - 1]
1498          $ = :HTEXTPASS2, Z
1499          SUBC(MS)
1500          $E39
1501          F - 1, Z                      " INTEGER CONSTANT ?
1502          $ = 1
1503          M[B - 1] - $                  " INCREASE INDEX
1504      N,  JUMP(13)
1505          G = MC[ - 1]
1506          $ = :HTEXTPASS2, Z
1507          SUBC(MS)
1508          $E39
1509          $ = HSCHADUW
1510          HWIJZER = $             " RESTORE WIJZER AS BEFORE CALL OF RUND
1511          $ = MC[ - 1]                  " RETURN VIA LINK
1512          $ '*' - HPAG
1513          MC = $
1514          $ = :MT
1515          $ '*' HPAG
1516          M[B - 1] + $
1517          GOTOR(MC[ - 1])
1518          F - 1, Z                      " REAL CONSTANT ?
1519      N,  M[B - 1] - $                  " SKIP NLCR
1520      N,  JUMP( - 24)                   " TO G = M[B - 1]
1521          G = M[B - 1]
1522          $ = :HTEXTPASS2, Z
1523          SUBC(MS)
1524          $E39                          " HEAD OF REAL IN G
1525          MC = G
```

```
1526          G = M[B - 2]                          " OLD INDEX
1527          F - 1                                 " INCREASE
1528          $ = :HTEXTPASS2, Z
1529          SUBC(M$)
1530          SE39
1531          MC = G                                " ADD TAIL OF REAL CONSTANT
1532          F = MC[ - 2]                          " PICK UP REAL
1533          B - 1                                 " DISCARD INDEX
1534          SUBCD(:RSE88)                         " ROUND
1535          JUMP( - 27)
1536          G = HNEXTDEL                          " BOODSCHAP 0
1537          SE33
1538          CBOODSCHAR0[5]

1539                                                                  " 7.74
1540                                                                  " CBOODSCHAR0, CALGOL
1541  CBOODSCHAR0(15)
1542          $ = HREGELNR
1543          HREGELDEL = $
1544          $ = HRANGNR
1545          $ + 1
1546          HRANGDEL = $
1547          F - 63, Z
1548      Y,  F = 123
1549      N,  F + 63
1550          HNEXTDEL = G
1551          F = 0
1552          HFOUT = G
1553          B + 2
1554          $ = 9
1555          SE73
1556          HBOODSCHAR
1557  COUMEND(12)
1558          HDRUM = - B
1559          $ = - HERRORFOUND, R
1560      Y,  $ = ULIST
1561      Y,  HTEXTGEWENST = $
1562          $ = HLAATSTE, R
1563      N,  HVERDERLEZEN = - B                    " OM ONGEWENST PRINTEN VAN TUSSENGELASTE LIBBABY TE VOORKOMEN
1564      N,  F = 124
1565      Y,  $ = 1
1566      Y,  HWIJZER + $
1567      Y,  $ = - 7773                            " REPRESENTATIE LIBRARYHAAK IN TEXTPASS2
1568      Y,  F = 1
1569          CTERUG
1570  CALGOL(2)
1571          '012 025 020'
1572          '030 025 776'
```

to go with HSYM

PASS 2 again consists of delimitertexts

```
0                                                                   " 12.0
1                                                                   " MABEGIN = 0
2  MABEGIN(60)
3          S = - MFUTSYM[MA3]
4      U,  $ - 7793, P
5      Y,  JUMP(3)                          " NIET DECLARATOR
6      U,  $ - 7785, P
7      N,  $ - 7772, Z
8      Y,  JUMP(6)                          " DECLARATOR
9          S = '201'                        " BEGIN COMPOUND
10         MC = $
11         MBOV1
12         MBOV2
13         SE33
14         MCYCLE2
15         S = MSPAN[MA3]
16         MC = $
17         S = MMAXSPAN[MA3]
18         MC = $
19         B + 1
20         S = - 1
21         MC = $
22         MC = $
23         S = '301'                        " BEGIN BLOCK
24         MC = $
25         MBOV1
26         MBOV2
27         S = 1
28         PLUSS(MCBM[MA3])
29     U,  $ - MMAXITH[MA3], P
30     Y,  MMAXITH[MA3] = S
31         S = MT[3]
32         GLO = S
33         SE33
34         MABLOCKINT

35                                                                  " 12.0
36                                                                  " MABEGIN = 1
37         MABEGIN[34]
38         S = 3
39         S = MT[- 2]                      " S = 3
40         S + MSPLOC[MA3]
41         MGEN
42         S = MT[21]                       " SE0
43         MGEN
44         S = MOWNARRAY, P
45     N,  JUMP(13)
46         S = MRESP[MA3]
47         S - 3, P
48     N,  S = 2
49     N,  MRESP[MA3] = S
50         S = MT[- 36]                     " SE33
51         MGEN
52         S = MOBTOP
53         MOWNARRAYLINK[MA3] = S
54         S + 1
55         MGEN
56         MOWNARRAY = - B
57         S = 62
```

```
58          HGASMETER[HA3] + $
59          $ = HSPLOC[HA3]
60          $ + :MS[48]
61          $ + HSPLOC[HA3]
62          HGASMETER[HA3] + $
63          JUMP(- 49)
64          SE0

65                                                                  " 12.1
66                                                                  " HATYPE - 0
67  HATYPE(33)
68          $ = HFUTSYM[HA3]
69          $ - 8, R
70      N,  JUMP(27)
71          $ = M[B - 1]
72          $ - '120', Z                    " OWN?
73      N,  JUMP(3)
74          B - 1
75          HOND1
76          HOND2
77          $ = MT[22]
78          GL0 = $
79          SE33
80          HARUND
81          $ = HNEXTDEL[HA3]
82          $ + 603, Z                      " SEMICOLON
83      N,  JUMP(- 7)
84          $ = - HFUTSYM[HA3]              " INSPRING VOOR SQUARECLOSE
85      U,  $ - 7793, R                     " EN VOOR SEMICOLON
86      Y,  JUMP(3)
87      U,  $ - 7785, R
88      N,  $ - 7772, Z
89      Y,  JUMP(8)
90          $ = MT[8]                       " HCYCLE2
91          GL0 = $
92          SE33
93          HADECAF
94          $ = '120'                       " OWN; INSPRING VOOR OWN
95          MC = $
96          MBOV1
97          MBOV2
98          SE33
99          HCYCLE2
100         HATYPE[13]

101                                                                 " 12.2
102                                                                 " HAEND - 0
103 HAEND(54)
104         $ = MT[3]
105         GL0 = $
106         SE33
107         HASTATCOL
108         HAEND[5]
109         $ = M[B - 1]
110         $ - '201', Z                    " BEGIN COMPOUND?
111     N,  JUMP(10)

112                                                                 " 12.2
113                                                                 " HAEND - 1
114         B - 1
```

```
115          HOND1
116          HOND2
117          $ = M[B - 1]
118          $ - '101', Z                    " UNIVERSE
119      N,  JUMP(2)
120          SE33
121          HAFINPASS2
122          SE33
123          HCYCLE2
124          G = - M[B - 2], P
125      Y,  JUMP(8)
126          $ = :HOBTEXT, Z
127          SUBC(MS)
128          SE38
129          $ = '1220'
130          LUS(15)
131          $ + HMAXSPAN[HA3]
132          G = $
133          DO(MC[- 1])
134          $ = M[B - 5]
135          HMAXSPAN[HA3] = $
136          $ = M[B - 6]
137          HSPAN[HA3] = $
138          $ = 1
139          HCBH[HA3] - $
140          $ = MT[18]                      " SE6
141          HGEN
142          $ = M[B - 1]
143          $ - '401', Z                    " INTERSECT BLOCKBEGIN?
144      N,  JUMP(4)
145          B - 6

146                                          " 12.2
147                                          " HAEND - 2
148          HOND1
149          HOND2
150          JUMP(- 25)
151          B + 2
152          $ = 9
153          SE73
154          HABLOCKINT[238]
155          B - 6
156          HOND1
157          HOND2
158          $ = 22
159          HGASMETER[HA3] + $
160          JUMP(- 42)
161          SE6

162                                          " 12.3
163                                          " HASTACKRR
164 HASTACKRR(30)    stack priority
165          $ = - M[B - 4]
166      U,  $ '*' 1, Z                      " STACK START ADM?
167      N,  $ '*' '20', Z                   " OVERIGE MARKERS?
168      Y,  $ = 0
169      Y,  JUMP(6)
170          $ = - M[B - 4]
171      U,  $ '*' '210', Z                  " ARITHMETIC OPERATOR?
172      N,  JUMP(9)
```

```
173          $ + '20311', P                    " ADDITIVE ARITHMETIC OPERATOR?
174      Y,  $ = - 9
175      N,  $ = - 10
176          $ + HPRIORITY[HA3], P
177          $ = - T
178          MC = $
179          MA = B
180          GL1 = A
181          SE34
182      U,  $ '*' '410', Z                    " RELATIONAL OPERATOR?
183      Y,  $ = - 8
184      Y,  JUMP(- 9)
185      U,  $ '*' '1010', Z                   " BOOLEAN OPERATOR?
186      Y,  RUS(12)
187      Y,  JUMP(- 12)
188      U,  $ + '6010', Z                     " ETHEN?
189      Y,  $ = - 2
190      Y,  JUMP(- 15)
191          $ + '26011', P
192      Y,  $ = - 1
193      N,  $ = 0
194          JUMP(- 19)
195                                            " LEVERT OP TOP V.D. STACK AF
196                                            " DE BOOLEAN
197                                            " STACK PRIORITY(THREEUNDERTOP) ≥ L

198                                                                  " 12.4
199                                                                  " MAIE
200 MAIE(9)
201          $ = - M[B - 1]
202          $ '*' 1, Z                        " STATSTARTADM?
203      Y,  $ = '220'                         " STAT IF
204      N,  $ = '320'                         " EXPR IF
205          MC = $
206          MBOV1
207          MBOV2
208          SE33
209          MCYCLE2

210                                                                  " 12.5
211                                                                  " MATHEN - 0
212 MATHEN(50)
213          $ = M[B - 4]
214          $ - '320', Z                      " EXPRESSION IF
215      N,  JUMR(13)
216          F = M[B - 3]
217          M[B - 4] = F
218          $ = M[B - 1]
219          M[B - 2] = $
220          $ = HREVTOP[HA3]
221          $ - 1
222          M[B - 1] = $
223          $ = '6010'                        " ETHEN
224          MC = $
225          MBOV1
226          MBOV2
227          SE33
228          MCYCLE2

229                                                                  " 12.5
```

```
230                                                                    " MATHEN - 1
231         B - 3
232         MOND1
233         MOND2
234         MA = B
235         B + 2
236         S = 9
237         SE73
238         MACREATEOB
239         S = MRESP[MA3]                  " INSPRINGPUNT VANUIT MAZOEKSPOOR
240         S - 4, P
241     N,  S = 2
242     N,  MRESP[MA3] = S
243         S = '5023'                      " OPDRACHT N, JUMP(RESP - 3)
244         RCS(12)
245     N,  S + 508
246     Y,  S - 3
247     Y,  S + MRESP[MA3]
248         MGEN
249         S = MGASMETER[MA3]
250         M[B - 1] = S
251         S = - 1
252         S + MOBTOP
253         G = - S
254         G - MRESP[MA3]
255         MC = - G
256         MOBT
257         F = 1
258         G - M[B - 1]
259         S = MT[- 31]                    " SE33
260         MOBT
261         S = 2
262         MRESP[MA3] - S
263         S = '501'                       " STHEN
264         JUMP(- 39)

265                                                                    " 12.6
266                                                                    " MABINOP - 0
267 MABINOP(41)
268         F = '4310'                      " PLUS
269         JUMP(31)
270         F = '14310'                     " MIN
271         JUMP(29)
272         F = '24310'                     " *
273         JUMP(27)
274         F = '34310'                     " /
275         JUMP(25)
276         F = '44210'                     " :
277         JUMP(23)
278         F = '54210'                     " ↑
279         JUMP(21)
280         F = '4510'                      " =
281         JUMP(19)
282         F = '10510'                     " ≠
283         JUMP(17)
284         F = '24510'                     " <
285         JUMP(15)
286         F = '30510'                     " ≤
287         JUMP(13)
288         F = '34510'                     " >
```

```
289          JUMP(11)
290          F = '40510'                    " ≥
291          JUMP(9)
292          F = '31110'                    " ≡
293          JUMP(7)
294          F = '41110'                    " IMPLIES
295          JUMP(5)
296          F = '51110'                    " OR
297          JUMP(3)
298          F = '61110'                    " AND
299          JUMP(1)

300                                                                  " 12.6
301                                                                  " HABINOP - 1
302          F = '12010'                    " EELSE
303          S = HREVTOP[HA3]
304          S - 1
305          MC = S
306          MC = G
307          HBOV1
308          HBOV2
309          SE33
310          HCYCLE2

311                                                                  " 12.7
312                                                                  " HASELSE - 0
313 HASELSE(68)
314          S = HRESP[HA3]
315          S - 2, R
316     N,   JUMP(20)
317          S = M[B - 2]
318          S '*' - 511
319          G = S
320          S = HOBTOP
321          S '*' - 511

322                                                                  " 12.7
323                                                                  " HASELSE - 1
324          S - G, Z
325     N,   JUMP(13)
326          G = - M[B - 2]
327          S = :HOBTEXT, Z
328          SUBC(MS)
329          SE39
330          S = '5023'                     " N, JUMP(:STAT)
331          RCS(12)
332          S + HOBTOP
333          S - G
334          F = - F
335          HOBT                           " OBTEXT[- G] := S
336          S = 2, R                       " ZET CONDITIE VLS
337          HRESP[HA3] + S
338          JUMP(10)
339          S = HRESP[HA3]
340          S - 4, R
341     N,   S = 2
342     N,   HRESP[HA3] = S
343     N,   S = HBASE[HA3]
344     N,   S + 514
345     Y,   S = HOBTOP
```

```
346     Y,  $ + 1
347         $UBC(:MT[29])                   " NODIG OM CONDITIE TE BEWAREN
348         HOBT                            " IDEM
349         $ = '5020'                      " JUMP :$TAT
350         RCS(12)
351     N,  $ + 508
352     Y,  $ + HRESP[HA3]
353     Y,  $ - 3
354         HGEN
355         $ = HOBTOP

356                                                                 " 12.7
357                                                                 " HASELSE - 2
358         $ + HRESP[HA3]
359         $ - 1
360         M[B - 2] = $
361         G = M[B - 3]
362         $ = HGASMETER[HA3]
363         M[B - 3] = $
364         HGASMETER[HA3] = G
365         $ = '601'                       " SELSE
366         M[B - 1] = $
367         $ = HOBTOP
368         $ - 1
369         G = - M[B - 2]
370         HOBT
371         $ = MT[5]
372         F = 1
373         G - M[B - 2]
374         HOBT
375         $ = 2
376         HRESP[HA3] - $
377         SE33
378         HCYCLE?
379         G = - $
380         $ = :HOBTEXT, Z
381         SUBC(MS)
382         $ = A
383         DO(MD[- 1])
384         G = - M[B - 3]
385         GOTOR(MC[- 1])

386                                                                 " 12.8
387                                                                 " HASQUCLO - 0
388 HASQUCLO(134)
389         $ = M[B - 4]
390     U,  $ - '42010', Z                  " SUBSCRIPT COMMA?
391     N,  JUMP(5)
392         $ = MT[3]
393         GLO = $
394         SE33
395         HATRANSREV
396         HASQUCLO
397     U,  $ - '46010', Z                  " SUBSCRIPTION?
398     N,  $ - '52010', Z                  " SWITCH DESIGN?
399     N,  JUMP(13)
400         $ = HFUTSYM[HA3]
401     U,  $ + 599, Z                      " COMMA?
402     N,  $ + 611, Z                      " ROCLOSE?
403     N,  JUMP(5)
```

```
        S = M[B - 9]

                                                                           " 12.8
                                                                           " HASQUCLO - 1
U,      S - '32010', Z                      " FUDES?
N,      S - '36010', Z                      " PARAMETERCOMMA?
Y,      F = 0
Y,      M[B - 2] = F
        S = MT[106]                         " CYCLE2
        GL0 = S
        SE33
        HATRANSREV
        B - 3
        HOND1
        HOND2
        F = 1
        G - HREVTOP[HA3]
        S = :HREVPOL, Z
        SUBC(MS)
        SE39
        S = - G
        S '*' 2, Z                          " CONST?
Y,      JUMP(12)
        S = M[B - 4]
        S - '120', Z                        " OWN?
        MA = B
        B + 2
        S = 9
N,      JUMP(4)
        F = 137
        HFOUT[HA3] = G
        SE73
        HBOODSCHAR
        SE73
        HADYNAR
        MA = B

                                                                           " 12.8
                                                                           " HASQUCLO - 2
        B + 2
        S = 9
        SE73
        HACREATEOB
        S = '1220'                          " S = :STAT
        LUS(15)
        S + HMAXSPAN[HA3]
        S + 10                              " 10 VOOR DE MAPPING TABLE
        G = - M[B - 2]
        HOBT                                " OBTEXT[- G] = S
        G = - M[B - 3]
        F + F
        MC = G
        F - 1
        S = :HDL, Z
        SUBC(MS)
        SE39                                " A = :DYN
        S = '620'
        LUS(15)
        S + G
        HGEN
```

```
462          G = M[B - 1]
463          $ = :HDL, Z
464          SUBC(MS)
465          SE39
466          M[B - 1] = G
467          $ = G
468          RUS(15)
469          G = $
470          $ = '311'                          " E = :STAT
471          RC$(8)
472          $ + G

473                                                                  " 12.8
474                                                                  " HASQUCLO - 3
475          HGEN
476          $ = HRESP[HA3]
477          $ - 3, R
478      N,  $ = 2
479      N,  HRESP[HA3] = $
480          $ = MT[45]                         " CHEEN
481          HGEN
482          $ = MC[- 1]                        " DE WAARDE VAN DL[2 * CIN]
483          $ '*' 15
484          RUS(1)
485          $ + :MT[37]                        " UITVSEL = 2, 3, 4, 5
486          $ = MS
487          HGEN
488          B - 3
489          HOND1
490          HOND2
491          $ = MT[36]
492          GLG = $
493          SE33
494          HARUND
495          $ = 600
496          HGASMETER[HA3] + $
497          $ = HNEXTDEL[HA3]
498          $ + 599, Z                         " COMMA?
499      N,  JUMP(2)
500          SE33
501          HAARRAY[76]                        " NAAR ARRAYSEG
502          $ = M[B - 1]
503      U,  $ - '120', Z                       " OWN ?
504      N,  JUMP(15)
505          HKOST                              " IN $ STAAT 80
506          B - 1

507                                                                  " 12.8
508                                                                  " HASQUCLO - 4
509          HOND1
510          HOND2
511          $ = MT[10]                         " SE33
512          HOBT[- 4]                          " OBT[OBTOP] := $; OBTOP := OBTOP + 1
513          $ = HOWNARRAYLINK[HA3]
514          HOBT[- 4]                          " OBT[OBTOP] := $; OBTOP := OBTOP + 1
515          $ = - 1
516          $ + HOBTOP
517          HOWNARRAYLINK[HA3] = $
518          $ = 2
519          HRESP[HA3] - $
```

```
520          $ = M[B - 5]                    " GASMETER OPHALEN
521          HGASMETER[HA3] = $              " EN HERSTELLEN
522          SE33
523          HATYPE[16]
524          HCYCLE2
525          UINVSE2

526                                                                  " 12.8
527                                                                  " HASQUCLO - 5
528          UINVSE3
529          UINVSE5
530          CHEEN
531          UINVSE4
532          HASQUCLO[100]

533                                                                  " 12.9
534                                                                  " HASEMCOL - 0
535 HASEMCOL(137)
536          $ = M[B - 1]
537          $ - '520', Z                    " SWITCH?
538     N,   JUMP(52)
539     N,   $ + M['77774'], E               " GEBRUIKT OP 4, DOOR CONDITIE YES WORDT DEZE OPDRACHT ALTIJD GESKIPT
540          $ = MT[- 2]
541          $ + M[B - 3]
542          $ - M[B - 2]
543          $ - HNOEP[HA3]

544                                                                  " 12.9
545                                                                  " HASEMCOL - 1
546          G = - M[B - 2]
547          HOBT                            " OBT := $
548          $ = 2
549          HRESP[HA3] - $                  " OM EEN EVENTUELE OPHOGING BIJ DECAF TE COMPENSEREN
550          $ = MT[41]                      " SE35
551          F = 1
552          G - MC[- 3]
553          HOBT                            " OBT := $
554          $ = MT[36]                      " SE71
555          G = - MC[- 2]
556          HOBT                            " OBT := $
557          $ = MT[105]                     " $ + 0, P
558          $ + HNOEP[HA3]
559          G = - MC[- 2]
560          HOBT                            " OBT := $
561          HOND1
562          HOND2
563          G = - M[B - 2], P
564     N,   $ = MT[99]                      " $ = 0
565     N,   $ + HMAXSPAN[HA3]
566     N,   SUBC(:HGENERATE[35])
567          $ = HMAXITH[HA3]
568     U,   $ - 57, P                       " NESTING TE DIEP ?
569     Y,   JUMP(95)
570          $ + 3
571          $ + MT[92]                      " $ = 0
572          G = - M[B - 3]
573          HOBT                            " OBT := $
574          $ = M[B - 4]
575          HMAXITH[HA3] = $
576          $ = 72                          " KOSTEN VOOR SE71
```

```
      HKOST

                                                                  " 12.9
                                                                  " HASEMCOL - 2
      S = MT[12]                    " SE71
      HGEN
      S = M[B - 7]
      HSPAN[HA3] = S
      S = M[B - 6]
      HMAXSPAN[HA3] = S
      B - 8
      HOND1
      HOND2
      S = 1
      HCBH[HA3] - S
      SE33
      HATYRE[16]
      SE71
      SE35
      S = MT[3]
      GLO = S
      SE33
      HASTATCOL
      HASEMCOL[60]
      S = M[B - 1]
  U,  S - '701', Z                  " VALUE LIST?
  N,  JUMP(21)
      S = M[B - 2], P
  N,  JUMP(5)
      S = '1220'                    " S = :STAT
      LUS(15)
      S + HMAXSPAN[HA3]
      G = - M[B - 2]
      HOBT                          " OBT := S
      S = M[B - 6]
      HSPAN[HA3] = S

                                                                  " 12.9
                                                                  " HASEMCOL - 3
      S = M[B - 5]
      HMAXSPAN[HA3] = S
      B - 6
      HOND1
      HOND2
      S = 1
      HCBH[HA3] - S
      S = MT[8]                     " SE6
      HGEN
      S = 22                        " KOSTEN VOOR SE6
      HGASMETER[HA3] + S
      S = M[B - 1]
      S - '1001', Z                 " PROCEDURE?
  Y,  JUMP(3)
      SE33
      HCYCLE2
      SE6
      B + 2
      S = 9
      SE73
      HABLOCKINT[238]
```

```
635          B + 2
636          $ = 9
637          SE73
638          HABLOCKINT[238]
639          G = - M[B - 8]
640          $ = :HDL, Z
641          SUBC(MS)
642          SE39
643          $ = - G
644          MC = G

645                                                                  " 12.9
646                                                                  " HASEMCOL - 4
647      U,  $ '*' 8, Z                  " BOOLEAN?
648      N,  $ '+' '10000'
649      N,  $ '*' '10001', Z            " NON FORMAL INTEGER?
650      Y,  $ = '6261'                  " G = DYN
651      N,  $ = '6260'                  " F = DYN
652          RCS(12)
653          $ + '73367'                 " $ + " ADRESDEEL(MA[- 9])"
654          G = HNOF[HA3]
655          F * 4
656          $ - G
657          HGEN
658          G = - M[B - 9]
659          $ = :HDL, Z
660          SUBC(MS)
661          SE38
662          G = M[B - 3]
663          F - '40000'                 " UIT DE BODY
664          DO(MC[- 1])
665          B - 1
666          $ = 3                       " KOSTEN VOOR F = DYN
667          HGASMETER[HA3] + $
668          JUMP(- 100)
669          $ + 0, R                    " GEBRUIKT OP 18
670          $ = 0                       " GEBRUIKT OP 26 EN 33
671          $ = 100
672          HFOUT[HA3] = $
673          B - 8
674          HOND1
675          HOND2
676          MA = B
677          B + 2
678          $ = 9
679          SE73
680          HBOOPSCHAR

681                                                                  " 12.10
682                                                                  " HAARRAY - 0
683 HAARRAY(103)
684          $ = M[B - 1]
685          $ - '120', Z                " OWN?
686      N,  JUMP(40)
687          $ = M[B - 4], R
688      Y,  JUMP(23)
689          $ = HRESP[HA3]
690          $ - 4, R
691      N,  $ = 2
692      N,  HRESP[HA3] = $
```

```
693          S = MT[56]                          " JUMP(508)
694      Y,  S + HRESP[HA3]
695      Y,  S - 511
696          HGEN
697          G = - HOBTOP
698          F + 1
699          S = - G
700          G - HRESP[HA3]
701          M[B - 4] = - G
702          HOBT
703          S = MT[81]                          " SE33
704          F = 1
705          G - M[B - 4]
706          HOBT
707          S = 2
708          HRESP[HA3] - S
709          S = HGASMETER[HA3]
710          M[B - 5] = S
711          HGASMETER[HA3] - S                  " GASMETER := 0
712          G = - HOWNARRAYLINK[HA3]
713          MC = G
714          S = :HOBTEXT, Z
715          SUBC(MS)

716                                                                  " 12.10
717                                                                  " HAARRAY - 1
718          SE39
719          HOWNARRAYLINK[HA3] = G
720          SUBC(:MT[2])                        " S := INV ADRES(OBTOP)
721          G = MC[- 1]
722          JUMP(38)
723          G = - HOBTOP
724          S = :HOBTEXT, Z
725          SUBC(MS)
726          S = A
727          DO(MD[- 1])
728          GOTOR(MC[- 1])
729          S = M[B - 3], P
730      N,  JUMP(31)
731          G = - HRESP[HA3]
732          F + 3, P
733      Y,  JUMP(21)                            " WEG MET CONDITIE YES
734          S '*' - 511
735          G = S
736          S = HOBTOP
737          S '*' - 511
738          S - G, Z
739      N,  JUMP(18)                            " WEG MET CONDITIE NO
740          G = - M[B - 3]
741          S = :HOBTEXT, Z
742          SUBC(MS)
743          SE39
744          S = 2
745          HRESP[HA3] + S
746          S = MT[5]                           " JUMP(508)
747          S + HOBTOP
748          S - G
749          S - 509

750                                                                  " 12.10
```

```
                                                                      " HAARRAY - 2
          F = - F
          JUMP(8)
          JUMP(508)
          SE1
          HAARRAY[96]
          G = - HBASE[HA3]                     " AANKOMST MET CONDITIE YES
          F - 513
          SUBC(:MT[- 34])                      " S := INV ADRES(- G)
      N,  SUBC(:MT[- 36])                      " AANKOMST MET CONDITIE NO ; S := INV ADRES(OBTOP)
          G = - M[B - 3]
          M[B - 3] = G                         " VUL MET 'NO ADDRESS'
          HOBT
          S = HPUTSYM[HA3]                     " ARRAYSEG:
          S '*' '77777'
          MC = S
          HGEN                                 " EMPTY
          S = HOBTOP
          S - 1
          MC = S
          S = MT[- 17]                         " SE1
          HGEN
          S = 0
          HSPAN[HA3] = S
          HMAXSPAN[HA3] = S
          S = '420'                            " ARRAYOPEN
          MC = S
          HBOV1
          HBOV2
          S = MT[- 25]
          GLO = S
          SE33
          HARUND

                                                                      " 12.10
                                                                      " HAARRAY - 3
          S = HNEXTDEL[HA3]
          S + 6244, Z                          " SQUARE OPEN
      N,  JUMP(- 7)
          S = 7                                " PRIJS SE1 EN S = MAXSPAN
          HGASMETER[HA3] + S
          SE33                                 " WORDT GEPAKT OP 19
          HCYCLE2

                                                                      " 12.11
                                                                      " HAPROC - 0
HAPROC(474)      procedure
          S = M[B - 3], P                      " NIET NO ADDRESS?
      Y,  JUMP(26)
          S = HRESP[HA3]
          S - 4, P
      N,  S = 2
      N,  HRESP[HA3] = S
          S = '241'                            " JUMP(:STAT)
          RCS(8)
      Y,  S + HRESP[HA3]
      Y,  S - 3
      N,  S + 508
          HGEN
          S = HOBTOP
```

```
809         $ - 1
810         MC = $
811         $ + HRESP[HA3]
812         M[B - 4] = $
813         G = - $
814         $ = MC[- 1]
815         HOBT                              " OBT := $
816         F = 1
817         G - M[B - 3]
818         $ = MT[181]                       " SE33
819         HOBT
820         $ = 2
821         HRESP[HA3] - $
822         $ = HGASMETER[HA3]
823         M[B - 4] = $
824         $ = 0
825         HGASMETER[HA3] = $
826         $ = 1
827         HCBH[HA3] + $

828                                                                 " 12.11
829                                                                 " HAPROC - 1
830         $ = '220'                         " A = :STAT
831         LUS(15)
832         $ + HCBH[HA3]
833         HGEN
834         JUMP(410)
835         $ = HFUTSYM[HA3]
836         LUS(1)
837         MC = $
838         G = - $
839         $ = :HDL, Z
840         SUBC(MS)
841         SE39
842         $ = G                             " INBODY EN DEST DEFINED
843         $ '+' '40100'
844         G = - M[B - 1]
845         SUBC(:MT[168])                    " DL[- G] := $
846         F = - 1
847         G - M[B - 1]
848         $ = :HDL, Z
849         SUBC(MS)
850         SE39
851         MC = G
852         F = 1
853         G - HOBTOP
854         $ = :HOBTEXT, Z
855         SUBC(MS)
856         MC = A
857         $ = A
858         DO(MD[- 1])
859         F = - 1
860         G - M[B - 3]
861         SUBC(:MT[152])                    " DL[- G] := $

862                                                                 " 12.11
863                                                                 " HAPROC - 2
864         G = - M[B - 2], R
865     Y,  JUMP(9)
866         $ = :HOBTEXT, Z
```

```
867          SUBC(MS)
868          SE39
869          S = G
870          G = - M[B - 2]
871          M[B - 2] = S
872          S = M[B - 1]
873          HOBT
874          JUMP(- 11)
875          S = HNEXTDEL[HA3]
876          S + 7793, Z                    " SWITCH?
877      Y,  JUMP(148)
878          S = HSPAN[HA3]
879          M[B - 2] = S
880          S = HMAXSPAN[HA3]
881          M[B - 1] = S
882          B + 1
883          S = HMAXITH[HA3]               " RUIMTE VOOR GASMETER
884          MC = S
885          S = HCBH[HA3]
886          HMAXITH[HA3] = S
887          HGEN                           " EMPTY
888          S = - 1
889          S + HOBTOP
890          MC = S
891          S = MT[113]                    " SE18
892          HGEN
893          S = MT[130]                    " S = MA[- 6] '126073372'
894          HGEN
895          MC = - B
896                                                                  " 12.11
897                                                                  " HAPROC - 3
898          S = '1001'                     " PROCEDURE
899          MC = S
900          HBOV1
901          HBOV2
902          S = HNEXTBLOCK[HA3]
903          HCURRENTBLOCK[HA3] = S
904          S + 3
905          HNEXTBLOCK[HA3] = S
906          S - 1
907          G = - S
908          S = :HBL, Z
909          SUBC(MS)
910          SE39
911          HNOF[HA3] = G
912          S = G
913          F * 3
914          MC = G
915          LUS(2)
916          S + MT[4]                      " U, S - 9, Z
917          HGEN
918          S = MT[108]                    " N, SUBCD(:PSE19)
919          HGEN
920          JUMP(1)
921      U,  S - 9, Z                       " GEBRUIKT OP 114
922          F = - 1
923          G - HCURRENTBLOCK[HA3]
924          S = :HBL, Z
925          SUBC(MS)
```

```
926           $E39
927           $ = G
928           M[B - 1] + $
929           MC = $

930                                                                  " 12.11
931                                                                  " MAPROC = 4
932           $ = HCBH[HA3]
933           LUS(7)
934           $ = HNOF[HA3]
935           LUS(2)
936           $ + 249
937           MC = $
938           $ = M[B - 2]
939       U,  $ = M[B - 3], Z
940       Y,  JUMP(91)
941           G = - $
942           $ = :HNL, Z
943           SUBC(MS)
944           $E39
945           F + F
946           MC = G
947           $ = 1
948           PLUS$(M[B - 3])
949           G = - $
950           $ = :HNL, Z
951           SUBC(MS)
952           $E39
953           MC = G
954           SUBC(:MT[55])                  " NL[K] := DL[I]
955           $ = M[B - 1]
956           G = - M[B - 2]
957           SUBC(:MT[62])                  " DL := $
958           $ = 1
959           M[B - 2] + $
960           M[B - 4] + $
961           SUBC(:MT[48])                  " NL[K] := DL[I]
962           G = - M[B - 2]
963           $ = M[B - 3]

964                                                                  " 12.11
965                                                                  " MAPROC = 5
966           SUBC(:MT[55])                  " DL := $
967           $ = '351'
968           RC$(8)
969           $ + M[B - 3]
970           MGEN
971           $ = MC[- 1]
972       U,  $ '*' 256, Z                   " VARIABLE
973       N,  F = :MT[1]                     " BASISADRES VARIABLE
974       N,  JUMP(6)
975       U,  $ '*' 512, Z                   " ARRAY?
976       N,  F = :MT[1]
977       N,  JUMP(3)
978       U,  $ '*' 1024, Z                  " PROCEDURE?
979       N,  F = :MT[3]
980       Y,  F = :MT[7]                     " BASISADRES STRING EN LABEL(EXPR)
981           MC = G
982           $ '*' 63
983           $ + 1
```

```
 984          G = B
 985          NORS
 986          S = B
 987          B = G
 988          S + MC[- 1]
 989          S = MS
 990          MGEN
 991          B - 1
 992          S = 4
 993          M[B - 1] + S
 994          S = 1
 995          M[B - 2] + S
 996          JUMP(- 57)
 997          SUBCD(:RSE21)                    " BOOLEAN

 998                                                                    " 12.11
 999                                                                    " MARROC - 6
1000          SUBCD(:RSE30)                    " COMPLEX
1001          SUBCD(:RSE20)                    " ARITHEN
1002          SUBCD(:RSE23)                    " BOOLEAN ARRAY
1003          SUBCD(:RSE31)                    " COMPLEX ARRAY
1004          SUBCD(:RSE22)                    " ARITHEN ARRAY
1005          SUBCD(:RSE24)                    " NON TYPE PROCEDURE
1006          SUBCD(:RSE28)                    " SWITCH
1007          SUBCD(:RSE26)                    " BOOLEAN PROCEDURE
1008          SUBCD(:RSE32)                    " COMPLEX PROCEDURE
1009          SUBCD(:RSE25)                    " ARITHEN PROCEDURE
1010          SUBCD(:RSE29)                    " STRING
1011          SUBCD(:RSE27)                    " LABEL
1012          SE33
1013          SE18
1014          G = - M[B - 5]                   " SUBROUTINE NL[K] := DL[I]
1015          S = :HNL, Z
1016          SUBC(MS)
1017          SE38
1018          G = - M[B - 5]
1019          S = :HDL, Z
1020          SUBC(MS)
1021          SE39
1022          DO(MC[- 1])
1023          GOTOR(MC[- 1])
1024          MC = S                           " DL[- G] := S
1025          S = :HDL, Z
1026          SUBC(MS)
1027          SE38
1028          G = M[B - 3]
1029          DO(MC[- 1])
1030          B - 1
1031          GOTOR(MC[- 1])

1032                                                                    " 12.11
1033                                                                    " MARROC - 7
1034          S = MA[- 6]
1035     N,   SUBCD(:RSE19)
1036          SE33
1037          HASWITCH
1038          S = HDRUM[HA3], R
1039     N,   S = HFUTSYM[HA3]
1040     N,   S '*' '77777'
1041     N,   HPOSID[HA3] = S
```

```
1042      N,  $ = HREGLASTID[HA3]
1043      N,  HREGPOSID[HA3] = $
1044          B - 3
1045          $ = MT[18]
1046          GLO = $
1047          SE33
1048          HARUND
1049          $ = HNEXTDEL[HA3]
1050          $ + 603, Z                          " SEMICOLON
1051      N,  JUMP(- 7)
1052          $ = - HFUTSYM[HA3]
1053      U,  $ - 7795, Z                         " VALUE
1054      N,  JUMP(163)
1055          $ = '1220'                          " $ = :STAT
1056          LUS(15)
1057          $ + WAS1S
1058          HGEN
1059          $ = MT[92]                          " SE1
1060          HGEN
1061          $ = MT[1]                           " LL
1062          JUMP(- 17)
1063          HARROC[255]
1064          HARROC[239]
1065          $ = HFUTSYM[HA3]

1066                                                                  " 12,11
1067                                                                  " HARROC - 8
1068      U,  $ - 8, B
1069      N,  JUMP(136)
1070          LUS(1)
1071          MC = $
1072          G = - $
1073          $ = :HDL, Z
1074          SUBC(MS)
1075          SE39
1076          MC = G
1077          F = - 1
1078          G - M[B - 2]
1079          $ = :HDL, Z
1080          SUBC(MS)
1081          SE39
1082          M[B - 2] = G
1083          $ = - M[B - 1]
1084      U,  $ '*' 512, Z                        " ARRAY?
1085      Y,  JUMP(75)
1086          $ '*' 4, Z                          " COMPLEX ?
1087      Y,  $ = MT[33]                          " F = 0
1088      Y,  SUBC(:HGENERATE)
1089      Y,  $ = MT[32]                          " MC = F
1090      Y,  F = 2
1091      Y,  SUBC(:HGENERATE[44])
1092          $ = HRESP[HA3]
1093          $ - 3, B
1094      N,  $ = 2
1095      N,  HRESP[HA3] = $
1096          $ = '1377'                          " DOS(DYN)
1097          RCS(10)
1098          $ + M[B - 2]
1099          HGEN
```

```
1100                                                                    " 12.11
1101                                                                    " HAPROC - 9
1102          $ = - M[B - 1]
1103      U,  $ '*' 16, Z                       " LABEL?
1104      N,  JUMP(24)
1105          $ = MT[51]                        " F = GLO
1106          HGEN
1107          $ = MT[17]                        " M0[- 256] = F
1108          $ + M[B - 2]
1109          $ + 2
1110          HGEN
1111          $ = HRESP[HA3]
1112          $ - 5, R
1113      N,  $ = 2
1114      N,  HRESP[HA3] = $
1115          $ = MT[10]                        " JUMP(2)
1116          HGEN
1117          $ = MT[9]                         " SUBCD(:RSE48)
1118          HGEN
1119          $ = '220'                         " PAR CODE EXPLICIT LABEL
1120          HGEN
1121          $ = MT[6]                         " F = MT[- 3]
1122          JUMP(17)
1123          F = 0
1124          MC = F
1125          M0[- 256] = F
1126          JUMP(2)
1127          SUBCD(:RSE48)
1128          F = MT[- 3]
1129          $ '*' 4, Z                        " COMPLEX ?
1130      N,  $ = MT[27]                        " DO(FRV)
1131      N,  JUMP(8)
1132          $ = MT[26]                        " DO(FCV)
1133          HGEN

1134                                                                    " 12.11
1135                                                                    " HAPROC - 10
1136          $ = MT[- 10]                      " M0[- 256] = F
1137          $ + M[B - 2]
1138          $ + 2
1139          F = - 2                           " VOOR DE VOLGENDE OPDRACHT
1140          HANOGEN
1141          $ = MT[20]                        " F = MC[- 2]
1142          HGEN
1143          $ = MC[- 1]
1144          $ '*' 1, Z                        " NOT INTEGER?
1145      Y,  $ = '7260'                        " DYN = F
1146      Y,  JUMP(5)
1147          $ = MT[15]                        " U, A = M[57], Z
1148          HGEN
1149          $ = MT[14]                        " N, SUBCD(:RSE88)
1150          HGEN
1151          $ = '7261'                        " DYN = G
1152          RCS(12)
1153          $ + MC[- 1]
1154          HGEN
1155          $ = 20                            " KOSTEN VALUELIST VOOR VARIABLE
1156          HGASMETER[HA3] + $
1157          JUMP(- 91)
1158          SE1
```

```
1159          F = GL0
1160          DO(ERV)
1161          DO(ECV)
1162          E = MC[- 2]
1163      U,  A = M[57], Z
1164      N,  SUBCD(:RSE88)
1165          S = M[B - 3]
1166          $ - '1001', Z                    " PROCEDURE?
1167      N,  JUMP(23)

1168                                                                    " 12.11
1169                                                                    " HAPROC - 11
1170          E = M[B - 2]                     " RED PQ-ADRES EN TYPE
1171          S = HSPAN[HA3]
1172          M[B - 2] = S
1173          S = HMAXSPAN[HA3]
1174          M[B - 1] = S
1175          B + 4
1176          S = 2
1177          M[B - 3] = S
1178          MC = E
1179          HGEN                             " EMPTY
1180          S = HOBTOP
1181          S - 1
1182          M[B - 4] = S
1183          S = MT[26]                       " SE0
1184          HGEN
1185          S = 1
1186          PLUSS(HCBH[HA3])
1187      U,  S - HMAXITH[HA3], R
1188      Y,  HMAXITH[HA3] = S
1189          S = '701'                        " VALUELIST
1190          M[B - 3] = S
1191          S = 51
1192          HGASMETER[HA3] = S
1193          S = MC[- 1]
1194          S '*' 63
1195          S + MT[13]                       " E = 0
1196          HGEN
1197          S = MT[13]                       " A = :MA[0]
1198          S + M[B - 4]
1199          HGEN
1200          S = MT[7]                        " S =:M0[- 256]
1201          S + MC[- 1]

1202                                                                    " 12.11
1203                                                                    " HAPROC - 12
1204          HGEN
1205          S = HRESP[HA3]
1206          S - 3, R
1207      N,  S = 2
1208      N,  HRESP[HA3] = S
1209          JUMP(71)
1210          S =:M0[- 256]
1211          E = 0
1212          SE0
1213          A = :MA
1214          S = M[B - 1]
1215          S - '701', Z                     " VALUELIST
1216      N,  JUMP(10)
```

```
1217          $ = '1220'
1218          LUS(15)
1219          $ + 3
1220          $ + M[B - 3]
1221          G = - M[B - 2]
1222          HOBT
1223          M[B - 3] = - B
1224          M[B - 2] = - B
1225          $ = 1
1226          HGASMETER[HA3] + $
1227          $ = - HFUTSYM[HA3]
1228      U,  $ - 7794, R
1229      Y,  JUMP(3)
1230      U,  $ - 7786, R
1231      N,  $ - 7772, Z
1232      Y,  JUMP(- 178)
1233          $ = MT[3]
1234          GLO = $
1235          SE33

1236                                                          " 12.11
1237                                                          " HARROC - 13
1238          HABLOCKINT
1239          HARROC[418]
1240          $ = MT[2]
1241          GLO = $
1242          JUMP(- 184)
1243          HARROC[422]
1244          $ = 93                          " NORMALE KOSTEN HARROC
1245          HGASMETER[HA3] + $
1246          $ = - HFUTSYM[HA3]
1247      U,  $ - 7793, R
1248      Y,  JUMP(5)
1249      U,  $ - 7785, R
1250      N,  $ - 7772, Z
1251      Y,  $ = HNEXTDEL[HA3]
1252      Y,  $ + 6248, Z                 " BEGIN ?
1253      Y,  JUMP(13)
1254          HGEN                        " EMPTY
1255          $ = HOBTOP
1256          $ - 1
1257          M[B - 2] = $
1258          $ = MT[- 95]                " SE1
1259          HGEN
1260          $ = 0
1261          HSPAN[HA3] = $
1262          HMAXSPAN[HA3] = $
1263          $ = 7
1264          HGASMETER[HA3] + $
1265          SE33
1266          HCYCLE2[4]                  " STROOI
1267          SE33
1268          HABEGIN
1269          G = - HREGELDEL[HA3]
1270          $ = :HRL, Z
1271          SUBC(MS)
1272          SE39
1273          B + 2, Z
1274      N,  JUMP(- 416)
1275          G = - HREGELDEL[HA3]
```

```
1276          $ = :HRL, Z
1277          SUBC(MS)
1278          SE38  .
1279          G = HOBTOP
1280          F - 1
1281          DO(MC[- 1])
1282          JUMP(- 424)
1283          $ = MT[10]                          " CHEEN
1284          HGEN
1285          $ = MT[9]                           " UARVALUE
1286          HGEN
1287          $ = 2
1288          M[B - 3] + $
1289          $ = 1
1290          HGASMETER[HA3] + $
1291          HBOV1
1292          HBOV2
1293          JUMP(- 221)
1294          CHEEN
1295          UARVALUE
```

```
                                                                    " 12.12
                                                                    " HACOLON - 0
HACOLON(133)
        S = HPRECSYM[HA3], P
   Y,   S = - M[B - 1]
   Y,   S '*' 1, Z                        " STATEMENT START ADM?
   N,   JUMP(80)
        HKOST                             " IN S STAAT NUL
        G = - HCIN[HA3]
        S = HDRUM[HA3], P
   Y,   JUMP(1)
        JUMP(120)
        F + F
        MC = G
        SUBC(:MT[1])
        JUMP(6)
        S = :HDL, Z
        SUBC(MS)
        SE39
        S = G
        G = M[B - 2]
        GOTOR(MC[- 1])
        S '+' 64                          " ... + DESTINATION DEFINED
        SUBC(:MT[55])                     " DL[ - G] := S
        F = - 1
        G + M[B - 1]
        M[B - 1] = G
        SUBC(:MT[- 12])
        M[B - 1] = S
        S = HRESP[HA3]
        S - 2, P
   Y,   S = HOBTOP
   N,   S = HBASE[HA3]
   N,   S + 513
        MC = S

                                                                    " 12.12
                                                                    " HCOLON - 1
        SUBC(:MT[43])                     " DL[ - G] := S
        G = - MC[ - 1]                    " UNSTACK " OBTOP "
        S = :HOBTEXT, Z
        SUBC(MS)
        MC = A                            " STACK (INV( " OBTOP "))
        DO(MD[ - 1])                      " HERSTEL A
        G = - M[B - 2], P                 " NO ADDRESS?
   Y,   JUMP(31)
        S = :HOBTEXT, Z
        SUBC(MS)
        SE39
        MC = G
        F = 1
        G - M[B - 3]
        S = :HOBTEXT, Z
        SUBC(MS)
        SE39
        G - MT[24], Z                     " SE33?
   Y,   S = HRESP[HA3]
   Y,   S - 2, P
   Y,   S = M[B - 3]
```

```
58      Y,  $ '*' - 511
59      Y,  MC = $
60      Y,  $ = HOBTOP
61      Y,  $ '*' - 511
62      Y,  $ - MC[ - 1], Z                 " RESP > 2 AND SAME PAGE(OBTOP, TWOUNDERTOP)
63      N,  $ = M[B - 2]
64          G = - M[B - 3]
65      N,  JUMP(6)
66          $ = '241'                       " JUMP(:STAT)
67          RCS(8)
68          $ + HOBTOP

69                                                                  " 12.12
70                                                                  " HACOLON - 2
71          $ - M[B - 3]
72          F = 1
73          G - M[B - 3]
74          HOBT
75          $ = MC[ - 1]
76          M[B - 2] = $
77          JUMP( - 33)
78          B - 2
79          $ = 0
80          HGASMETER[HA3] = $
81          SE33                            " WORDT GEBRUIKT OP 49
82          HCYCLE2
83          MC = $                          " STEBROUTINE DL[ - G] := $
84          $ = :HDL, Z
85          SUBC(MS)
86          SE38
87          G = M[B - 3]
88          DO(MC[ - 1])
89          B - 1
90          GOTO(MC[ - 1])                  " EINDE SUBROUTINE
91          $ = MT[3]
92          GL0 = $
93          SE33
94          HATRANSRS
95          HACOLON[89]
96          $ = MT[3]
97          GL0 = $
98          SE33
99          HASTACKRR
100         HACOLON[94]
101         $ = MC[ - 1], P
102     N,  JUMP(4)

103                                                                 " 12.12
104                                                                 " HACOLON - 3
105         $ = MT[ - 9]
106         GL0 = $
107         SE33
108         HATRANSREV
109         B - 3
110         HOND1
111         HOND2
112         F = 1                           " INSPRINGPUNT VAN HACOMMA
113         G - HREVTOP[HA3]
114         $ = :HREVPOL, Z
115         SUBC(MS)
```

```
116          SE39
117          $ = - G
118          $ '&' 2, Z                          " CONSTANT?
119      Y,  JUMP(12)
120          $ = M[B - 4]
121          $ - '120', Z                        " OWN?
122          MA = B
123          B + 2
124          $ = 9
125      N,  JUMP(4)
126          F = 137
127          HFOUT[HA3] = G
128          SE73
129          HBOODSCHAR
130          SE73
131          HADYNAR
132          MA = B
133          B + 2
134          $ = 9
135          SE73
136          HACREATEOB
137          JUMP( - 55)                         " GOTO CYCLE2
138          HPOSID[HA3] = - G
139          $ = HREGLASTID[HA3]
140          HREGPOSID[HA3] = $
141          JUMP(- 124)

142                                                                  " 12.13
143                                                                  " HAUNOR - 0
144  HAUNOR(17)      unary operator
145          $ = '77777'                         " + 00
146          MC = $
147          F = + 0
148          MC = F
149          MC = - B
150          $ = HNEXTDEL
151      U,  $ + 6225, Z                         " GOTO?
152      Y,  $ = '16010'                         " GOTO
153      Y,  JUMP(3)
154      U,  $ + 5236, Z                         " NEG?
155      Y,  $ = '60310'
156      N,  $ = '71110'                         " DAN NOU
157          MC = $
158          HBOV1
159          HBOV2
160          SE33
161          HCYCLE2

162                                                                  " 12.14
163                                                                  " HASWITCH - 0
164  HASWITCH(112)
165          $ = HSPAN[HA3]
166          MC[- 2] = $
167          $ = HMAXSPAN[HA3]
168          M[B - 2] = $
169          $ = HMAXWTH[HA3]
170          MC = $
171          $ = HCBH[HA3]
172          HMAXWTH[HA3] = $
173          $ = 0
```

```
174         HSPAN[HA3] = S
175         HMAXSPAN[HA3] = S
176         SUBC(:MT[83])                   " GEN(EMPTY); STACK(OBTOP - 1)
177         S = MT[88]                      " SE18
178         HGEN
179         SUBC(:MT[80])                   " GEN(EMPTY); STACK(OBTOP - 1)
180         S = MT[86]                      " SE1
181         HGEN
182         S = MT[85]                      " F = GLO
183         HGEN
184         S = MT[84]                      " U,    A = M[57], Z
185         HGEN
186         S = MT[83]                      " N,    SUBCD(:RSE88)
187         HGEN
188         S = 90
189         HKOST
190         S = MT[80]                      " S = - G
191         HGEN
192         S = MT[79]                      " S + 1, R
193         HGEN
194         S = 0                           " EVENTUEEL IETS MEER VOOR DE REST
195         HGASMETER[HA3] = S
196         S = HRESP[HA3]

197                                                                 " 12.14
198                                                                 " HASWITCH - 1
199         S - 6, R
200     N,  S = 2
201     N,  HRESP[HA3] = S
202         S = MT[73]                      " N, JUMP(2)
203         HGEN
204         S = MT[72]                      " SE35
205         HGEN
206         S = MT[71]                      " SE71
207         HGEN
208         S = HRESP[HA3]                  " CREATE DISTR ON THIS PAGE
209         S - 8, R
210     N,  S = 2
211     N,  HRESP[HA3] = S
212         SUBC(:MT[49])                   " GEN(EMPTY); STACK(OBTOP - 1)
213         S = '5023'                      " N,    JUMP(: STAT)
214         RCS(12)
215         S - 3
216         S + HRESP[HA3]
217         HGEN
218         F = 1
219         G - HOBTOP
220         S = - G
221         S + HRESP[HA3]
222         MC = S
223         S = :HOBTEXT, 2
224         SUBC(MS)
225         S = A
226         DO(MD[ - 1])
227         G = - M[B - 1]
228         HOBT                            " OBT[ - G] := S
229         F = 1
230         G - M[B - 1]

231                                                                 " 12.14
```

```
                                                              " HASWITCH - 2
        S = MT[26]                       " SE33
        HOBT                             " OBT[ - G] := S
        S = 2
        HRESP[HA3] - S
        R = 2
        G - M[B - 1]                     " JUMP( - :STAT)
        S = '245'
        RCS(8)
        S + HRESP[HA3]
        S - 2
        HOBT                             " OBT[ - G] := S
        S = 1
        HRESP[HA3] - S
        HNOEP[HA3] = S
        SUBC(:MT[16])                    " GENERATE(EMPTY); STACK(OBTOP - 1)
        S = MT[28]                       " JUMP(S)
        HGEN                             " SWITCH
        S = '520'
        MC = S
        HBOV1
        HBOV2
        S = HNEXTDEL[HA3]
        S + 7793, Z                      " SWITCH?
    N,  JUMP(5)
        S = MT[5]
        GL0 = S
        MA = B
        SE33
        HARUND
        SE33
        HCYCLE2
        HGEN                             " SUBROUTINE GEN(EMPTY); STACK(OBTOP - 1)

                                                              " 12.14
                                                              " HASWITCH - 3
        G = MC[ - 1]
        S = HOBTOP
        S - 1
        MC = S
        GOTOR(G)
        SE18
        SE1
        R = GL0
    U,  S = M[57], Z
    N,  SUBCD(:RSE88)
        S = - G
        S + 1, P
        JUMP(S)
    N,  JUMP(2)
        SE35
        SE71

                                                              " 12.15
                                                              " HACOMMA - 0
HACOMMA(149)
        S = M[B - 4]
    U,  S - '46010', Z                   " SUBSCRIPTION
    N,  S - '42010', Z                   " SUBSCRIPTCOMMA?
    N,  JUMP(9)
```

```
290          S = MREVTOP[MA3]
291          S - 1
292          MC = S
293      Y,  F = '42010'                    " ALS IK VAN 53 KOM DAN CONDITIE NO
294          MC = G                         " ANDERS CONDITIE YES
295          MBOV1
296          MBOV2
297          SE33
298          MCYCLE2
299          S = M[B - 4]
300      U,  S - '32010', Z                 " EUDES?
301      N,  S - '36010', Z                 " PARAMETERCOMMA

302                                                                  " 12.15
303                                                                  " MACOMMA - 1
304      N,  JUMP(21)
305          F = 1
306          G - MREVTOP[MA3]
307          S = :MREVPOL, Z
308          SUBC(MS)
309          SE39
310          S = - G
311      U,  S + '46010', Z                 " SUBSCRIPTION?
312      Y,  JUMP(11)
313          S '*' 4, Z                     " IDENTIFIER?
314      N,  JUMP(7)
315          F = 2
316          G - MREVTOP[MA3]
317          S = :MREVPOL, Z
318          SUBC(MS)
319          SE39
320          S = G
321          S '*' '6200', Z                " ARRAY OR VARIABLE ?
322      N,  F = 0
323      N,  M[B - 2] = F
324          F = '36010', Z                 " ZET CONDITIE N, PARAMETERCOMMA
325          JUMP(- 34)
326          B - 3
327          MOND1
328          MOND2
329          S = M[B - 1]
330      U,  S - '420', Z                   " ARRAYOPEN?
331      N,  JUMP(2)
332          SE33
333          MACOLON[103]
334          S - '52010', Z                 " SWITCHDESIGNATOR?
335      N,  JUMP(7)

336                                                                  " 12.15
337                                                                  " MACOMMA - 2
338          MA = B
339          S = 108
340          MFOUT[MA3] = S
341          B + 2
342          S = 9
343          SE73
344          MBOODSCHAR
345          MA = B
346          B + 2
347          S = 9
```

```
348          SE73
349          HACREATEOB
350          $ = M[B - 1]
351      U,  $ = '520', Z                    " SWITCH ?
352      Y,  $ = 72
353      Y,  SUBC(:HAEREKENING)
354          F = 0
355          HGASMETER[HA3] = G
356      Y,  JUMP(15)
357      U,  $ = '620', Z                    " FORBECOMES
358      N,  JUMP(62)
359          $ = MT[5]                       " DO(MC[- 1])
360          HGEN
361          $ = 2
362          HSPAN[HA3] - $
363          $ = MT[2]                       " SUBCD(:R103E3)
364          JUMP(61)
365          DO(MC[- 1])
366          SUBCD(:R103E3)
367          SUBCD(:R103E1)
368          SUBCD(:RSE103)
369          SE71

370                                                                  " 12.15
371                                                                  " HACOMMA - 3
372          SE33
373          HCYCLE2
374          $ = HRESP[HA3]
375          $ - 3, P
376      N,  $ = 2
377      N,  HRESP[HA3] = $
378          $ = MT[- 8]                     " SE71
379          HGEN
380          $ = HOBTOP
381          $ '*' - 511
382          G = $
383          $ = M[B - 2]
384          $ '*' - 511
385          $ - G, Z
386      N,  JUMP(11)
387          $ = '245'                       " JUMP(- :STAT)
388          RCS(8)
389          $ + HRESP[HA3]
390          F = 1
391          G - HRESP[HA3]
392          HRESP[HA3] = - G
393          G - HOBTOP
394          HOBT                            " OBT[- G] := $
395          $ = 1
396          HNOEP[HA3] - $
397          JUMP(- 26)
398          $ = '1020'                      " $ + :STAT
399          LUS(15)
400          $ + M[B - 3]
401          $ - M[B - 2]
402          $ - HNOEP[HA3]
403          $ - 4

404                                                                  " 12.15
405                                                                  " HACOMMA- 4
```

```
406          G = - M[B - 2]
407          HOBT                              " OBT[- G] := $
408          G = - HOBTOP
409          $ = :HOBTEXT, Z
410          SUBC(MS)
411          $ = A
412          DO(MD[- 1])
413          G = - M[B - 3]
414          HOBT                              " OBT[- G] := $
415          $ = '1024'                        " $ + :STAT, R
416          LUS(15)
417          $ + HNOEP[HA3]
418          G = - M[B - 4]
419          HOBT                              " OBT[- G] := $
420          B - 4
421          HOND1
422          HOND2
423          SE33
424          HASWITCH[41]                      " NAAR CREATE DISTR ON THIS PAGE
425          $ - '1020', Z                     " UNTIL? ANDERS WHILE
426          $ = '620'                         " FORBECOMES
427          M[B - 1] = $
428      Y,  $ = MT[- 57]                      " SE103
429      N,  $ = MT[- 59]                      " SE103E1
430          HGEN
431          $ = HRESP[HA3]
432          $ - 3, R
433      N,  $ = 2
434      N,  HRESP[HA3] = $
435          $ = MT[5]                         " DO$(MA[2])
436          HGEN
437          $ = MT[4]                         " DO(ELV)
438          F = 2
439          HANOGEN
440          JUMP(- 67)
441          DO$(MA[2])
442          DO(ELV)

443                                            " 12.16
444                                            " HCYCLE2 = 0
445  HCYCLE2(111)
446          $ = MT[90]   cyclic point of return in pass 2
447          GL0 = $
448          SE33
449          HARUND
450          $ = - HNEXTDEL[HA3]
451          $ '*' 255
452      U,  $ - 76, Z
453      N,  $ - 81, Z
454      N,  $ - 1, Z
455      N,  $ - 23, R
456      Y,  JUMP(39)                          " NAAR STROOI
457      U,  $ '*' 1, Z
458      Y,  $ + 18, R
459      N,  JUMP(2)
460          $ - 9, Z
461      N,  JUMP(34)                          " NAAR STROOI
462          $ = MT[3]
463          GL0 = $
464          SE33
```

```
465           HATRANSRS
466           HCYCLE2[21]
467           $ = MT[3]
468           GL0 = $
469           SE33
470           HASTACKRR
471           HCYCLE2[26]
472           $ = MC[ - 1], P
473       N,  JUMP(4)
474           $ = MT[ - 9]
475           GL0 = $
476           SE33
477           HATRANSREV

478                                                                  " 12.16
479                                                                  " HCYLE2 - 1
480           $ = - HNEXTDEL[HA3]
481           $ '*' 255
482       U,  $ - 82, P
483       N,  JUMP(14)
484       U,  $ - 91, Z
485       N,  $ - 96, Z
486       N,  $ - 9, Z
487       Y,  JUMP(2)
488           $ + 19, P
489       Y,  JUMP(8)
490           B - 3
491           HOND1
492           HOND2
493           MA = B
494           B + 2
495           $ = 9
496           SE73
497           HACREATEOB
498           $ = - HNEXTDEL[HA3]              " STROOI
499           $ '*' 255
500           $ + :MT[ - 59]
501           $ = MS
502           GL0 = $
503           GL1 = A
504           MA = B
505           SE34
506           HABINOR[0]                       " PLUS
507           HABINOR[2]                       " MIN
508           HABINOR[4]                       " MAAL
509           HABINOR[6]                       " DEEL
510           HABINOR[8]                       " INTEGENDEEL
511           HABINOR[10]                      " TO THE POWER

512                                                                  " 12.16
513                                                                  " HCYCLE2 - 2
514           HABINOR[12]                      " =
515           HABINOR[14]                      " ≠
516           HABINOR[16]                      " <
517           HABINOR[18]                      " ≤
518           HABINOR[20]                      " >
519           HABINOR[22]                      " ≥
520           HAUNOR                           " ¬
521           HABINOR[24]                      " ≡
522           HABINOR[26]                      " ⊐
```

```
523          HABINOR[28]                    " OR
524          HABINOR[30]                    " AND
525          HAUNOR                         " GOTO
526          HAEQR                          " EQR
527          HASTER                         " STEP
528          HAUNTIL                        " UNTIL
529          HAWHILE                        " WHILE
530          HADO                           " DO
531          HACOMMA                        " COMMA
532          HABECOMES                      " :=
533          HATHEN                         " ETHEN
534          HACOLON                        " :
535          HASEMCOL                       " ;
536          HATYPE                         " COMPLEX
537          HABINOR[32]                    " EELSE
538          HAIF                           " IF
539          HATHEN                         " STHEN
540          HASELSE                        " SELSE
541          HCYCLE2[4]                     " WORDT GEBRUIKT OP 0
542          HAROOPEN                       " (
543          HAROCLO                        " )
544          HASQUOP                        " [
545          HASQUCLO                       " ]

546                                                                  " 12.16
547                                                                  " HCYLE2 - 3
548          HASTRING                " STRING OPEN
549          HCYCLE2                        " SPECIAAL GEFOKTE STRINGCLOSE
550          HABEGIN                        " BEGIN
551          HAEND                          " END
552          HATYPE[26]                     " OWN
553          HATYPE                         " REAL
554          HATYPE                         " INTEGER
555          HATYPE                         " BOOLEAN
556          0                              " STRING
557          HAARRAY                        " ARRAY
558          HAPROC                         " PROCEDURE
559          HAPROC                         " SWITCH
560          0                              " LABEL
561          0                              " VALUE
562          HAUNOR                         " NEG

563                                                                  " 12.17
564                                                                  " HAROOPEN - 0
565 HAROOPEN(19)
566          $ = HPRECSYM[HA3]
567          $ - 8, P
568      N,  $ = '1120'                     " ALGEBRAIC OPEN
569      N,  JUMP(10)
570          S = MT[3]
571          GL0 = S
572          SE33
573          HATRANSPS
574          HAROOPEN[9]
575          S = - 1
576          HCBH[HA3] - S
577          S + HREVTOP[HA3]
578          MC = S
579          S = '32010'                    " FUNCTIONDESSIGNATOR
580          MC = S
```

```
581           HBOV1
582           HBOV2
583           SE33
584           HCYCLE2

585                                                                    " 12,18
586                                                                    " HAROCLO - 0
587   HAROCLO(61)
588           S = M[B - 4]
589           S - '1120', Z                    " ALGEBRAIC OPEN?
590       N,  JUMP(28)
591           F = M[B - 3]
592           M[B - 4] = F
593           S = MC[- 1]
594           M[B - 1] = S
595           HOND1
596           HOND2
597           F = 1
598           G - HREVTOP[HA3]
599           S = :HREVPOL, Z
600           SUBC(MS)
601           SE39
602           F - '22010', Z                   " BECOMES?
603       N,  F - '4000', Z                    " MULTIPLEBECOMES?
604       N,  JUMP(12)
605           F = 2
606           G - HREVTOP[HA3]
607           S = :HREVPOL, Z
608           SUBC(MS)
609           SE38
610           F = 2
611           G - HREVTOP[HA3]
612           S = :HREVPOL, Z
613           SUBC(MS)
614           SE39
615           G + MT[32]                       " INTERMEDIATE AANGEVEN
616           DO(MC[- 1])
617           SE33
618           HCYCLE2
619           F = 1

620                                                                    " 12.18
621                                                                    " HAROCLO - 1
622           G - HREVTOP[HA3]
623           S = :HREVPOL, Z
624           SUBC(MS)
625           SE39
626           S = - G
627       U,  S + '46010', Z                   " SUBSCRIPTION?
628       Y,  JUMP(11)
629           S '*' 4, Z                       " IDENTIFIER?
630       N,  JUMP(7)
631           F = 2
632           G - HREVTOP[HA3]
633           S = :HREVPOL, Z
634           SUBC(MS)
635           SE39
636           S = - G
637           S '*' '1400', Z                  " ARRAY OR VARIABLE?
638       N,  F = 0
```

```
639      N,  M[B - 2] = F
640          S = 1
641          HCBH[HA3] - S
642          S = M[B - 4]
643          S - '36010', Z                    " PARAMETERCOMMA?
644      N,  S = MT[- 25]
645      Y,  S = MT[3]
646          GL0 = S
647          SE33
648          HATRANSREV
649          HAROCLO[52]
650          '100000000'

651                                                                  " 12.19
652                                                                  " HASQUOR - 0
653 HASQUOR(34)
654          S = MT[3]
655          GL0 = S
656          SE33
657          HATRANSRS
658          HASQUOR[5]
659          F = 1
660          G - HREVTOP[HA3]
661          MC = - G
662          F + 1
663          S = :HREVPOL, Z
664          SUBC(MS)
665          SE39
666          S = - G
667      U,  S '*' '1000', Z                   " ARRAY?
668      Y,  S = '46010'                       " SUBSCRIPTION
669      Y,  JUMP(3)
670          S '*' '2020', Z                   " LABEL PROCEDURE
671      N,  JUMP(6)
672          S = '52010'                       " SWITCHDESSIGNATOR
673          MC = S
674          HBOV1
675          HBOV2
676          SE33
677          HCYCLE2
678          S = 110
679          HFOUT[HA3] = S
680          B - 4
681          HOND1
682          HOND2
683          HA = B
684          B + 2
685          S = 9
686          SE73
687          HBOODSCHAR

688                                                                  " 12.20
689                                                                  " HABECOMES - 0
690 HABECOMES(219)
691          S = MT[3]
692          GL0 =S
693          SE33
694          HATRANSRS
695          HABECOMES[5]
696          S = '77777'
```

```
697          M[B - 3] = - $
698          F = 2
699          G - HREVTOP[HA3]
700          $ = :HREVPOL, Z
701          SUBC(MS)
702          SE39
703          $ = G
704      U,  $ '*' '400', Z                  " ¬ VARIABLE?
705      N,  JUMP(3)
706          $ '*' '40000'
707      U,  $ '*' '55660', Z                " NONFORMAL TYPE PROCEDURE * IN BODY?
708      N,  JUMP(165)
709          $ = M[B - 4]
710      U,  $ - '1220', Z                   " FOR?
711      Y,  JUMP(12)
712          $ - '22010', Z                  " BECOMES?
713      Y,  $ = '26010'                     " MULTIPLE BECOMES
714      Y,  M[B - 4] = $
715          $ = HREVTOP[HA3]
716          $ - 1
717          MC = $
718          $ = '22010'                     " BECOMES
719          MC = $
720          HBOV1
721          HBOV2
722          SE33
723          HCYCLE2
724          $ = G
725                                          " 12.20
726                                          " HABECOMES - 1
727          $ '*' '7274', Z                 " REAL OR INTEGER VARIABLE?
728      N,  $ = 128
729      N,  JUMP(156)                       " NAAR FOUTEN
730          F = 1
731          G - HREVTOP[HA3]
732          $ = :HREVPOL, Z
733          SUBC(MS)
734          SE39
735          F - '46010', Z                  " SUBSCRIPTION?
736      N,  JUMP(86)                        " DAN IS HET EEN SIMPLE VARIABLE
737          $ = HRESP[HA3]
738          $ - 6, R
739      N,  $ = 2
740      N,  HRESP[HA3] = $
741          $ = '241'                       "JUMP(:STAT)
742          RCS(8)
743      N,  $ + 508
744      Y,  $ + HRESP[HA3]
745      Y,  $ - 3
746          HGEN
747          F = 1
748          G - HOBTOP
749          $ = - G
750          G - HRESP[HA3]
751          M[B - 5] = - G
752          HOBT
753          $ = MT[ - 30]                   " SE33
754          F = 1
755          G - M[B - 5]
```

```
756          HOBT
757          S = 2
758          HRESP[HA3] - S
759                                                                  " 12.20
760                                                                  " HABECOMES - 2
761          HGEN                              " GENERATE(EMPTY)
762          S = MT[140]                       " SE1
763          HGEN
764          S = HREVTOP[HA3]
765          S - 1
766          M[B - 3] = S
767          S = HOBTOP
768          S - 2
769          M[B - 2] = S
770          S = '1220'                        " FOR
771          M[B - 1] = S                      " STACK 3 EMPTY VALT WEG
772          MA = B                            " TEGEN 3 MAAL UNSTACK
773          B + 2
774          S = 9
775          SE73
776          HACREATEOB
777          S = HRESP[HA3]
778          S - 4, P
779      N,  S = 2
780      N,  HRESP[HA3] = S
781          E = - 1
782          S = :HREVPOL, Z
783          SUBC(MS)
784          SE39
785          E - '400'                         " MAAK VARIABLE VAN ARRAY
786          MC = G
787          G = - M[B - 3]
788          S = :HOBTEXT, Z
789          SUBC(MS)
790          SE39
791          S = M[B - 1]
792          S '*' '30000'                     " OM VALUE FORMAL TE ISOLEREN
793                                                                  " 12.20
794                                                                  " HABECOMES - 3
795          S - '10000', Z                    " FORMAL NOT BY VALUE?
796      N,  JUMP(16)
797          G - MT[108], Z                    " G - JUMP(1)
798      Y,  S = MT[12]                        " S = MO[- 255], P
799      N,  S = MT[12]                        " S = MO[- 255], Z
800          MC = S
801          E = 0
802          S = :HREVPOL, Z
803          SUBC(MS)
804          SE39
805          S = G
806          S + MC[- 1]
807          HGEN
808          S = MT[98]                        " SE86
809          HGEN
810          JUMP(9)
811          S = MO[- 255], P
812          S = MO[- 255], Z
813          G - MT[92], Z                     " G - JUMP(1)
```

```
814     N,  S = MT[85]                          " SE82E2
815     Y,  S = MT[83]                          " SE82E3
816         MGEN
817         S = M[B - 1]
818         S '*' '7677'
819         MGEN
820         G = - MC[- 3]
821         S = :MOBTEXT, Z
822         SUBC(MS)
823         S = A
824         DO(MD[ - 1])
825         MGEN
826         JUMP(22)                            " NAAR MAAK REVPOL LEEG

827                                                                     " 12.20
828                                                                     " MABECOMES - 4
829         S = 1
830         HCBH[MA3] - S
831         F = 0                               " NU SIMPLE VARIABLE
832         S = :HREVPOL, Z
833         SUBC(MS)
834         SE39
835         S = '1620'                          " S = :DYN
836         LUS(15)
837         S + G
838         MGEN
839         F = - 1
840         S = :HREVPOL, Z
841         SUBC(MS)
842         SE39
843         S = - G
844     U,  S '*' '10000', Z                    " FORMAL?
845     Y,  S = MT[57]                          " SE85
846     Y,  JUMP(3)
847         S '*' 1, Z                          " INTEGER
848     Y,  S = MT[55]                          " SE78
849     N,  S = MT[55]                          " SE77
850         MGEN
851         S = 0
852         HREVTOP[MA3] = S
853         HSPAN[MA3] = S
854         HMAXSPAN[MA3] = S
855         B - 3
856         MOND1
857         MOND2
858         S = HRESP[MA3]
859         S - 7, R
860     N,  S = 2

861                                                                     " 12.20
862                                                                     " MABECOMES - 5
863     N,  HRESP[MA3] = S
864         S = MT[43]                          " SE100
865         MGEN
866         S = HOBTOP
867         M[B - 2] = S
868         S = 2
869         HOBTOP + S
870         HRESP[MA3] - S
871         G = - HOBTOP
```

```
872         $ = :MOBTEXT, Z
873         SUBC(MS)
874         $ = A
875         DO(MD[ - 1])
876         F = - 1
877         G - M[B - 2]
878         MOBT
879         $ = '620'                          " FORBECOMES
880         M[B - 1] = $
881         $ = 82                             " KOSTEN FORBECOMES OPZETTEN
882         HGASMETER[HA3] = $
883         JUMP(28)
884         $ = - G                            " NU FOUT
885     U,  $ '*' '2000', Z                    " PROCEDURE?
886     N,  $ = 126
887     N,  JUMP(6)
888     U,  $ '*' '10000', Z                   " FORMAL?
889     Y,  $ = 129
890     Y,  JUMP(3)
891         $ '*' '40', Z                      " NONTYPE?
892     Y,  $ = 130
893     N,  $ = 131
894         HFOUT[HA3] = $

895                                                                  " 12.20
896                                                                  " HABECOMES - 6
897         B - 3
898         HOND1
899         HOND2
900         MA = B
901         B + 2
902         $ = 9
903         $E73
904         HBCODSCHAR
905         DOS(P82E3)                         " SE82E3
906         DOS(P82E2)                         " SE82E2
907         $UBC(:PSE85)                       " SE85
908         $UBCD(:PSE78)                      " SE78
909         $UBCD(:PSE77)                      " SE77
910         $UBCD(:PSE100)                     " SE100
911         SE1
912         JUMP( 1)
913         SUBC(:PSE86)                       " SE86
914         $ = MT[5]                          " DOS(MA[2])
915         HGEN                               " DO(ELV)
916         $ = MT[4]
917         F = 2
918         HANOGEN
919         JUMP( - 186)
920         DOS(MA[2])
921         DO(ELV)

922                                                                  " 12.21
923                                                                  " HAFOR - 0
924 HAFOR(193)
925         $ = 0
926         HKOST
927         $ = HFUTSYM[HA3]                   " TEST SIMPLE FOR STATEMENT
928         MC = $                             " EERST TOESTAND REDDEN
929         $ = HPRECSYM[HA3]
```

```
930           MC = $
931           $ = HWIJZER
932           MC = $
933           $ = HCIN[HA3]
934           MC = $
935           $ = HREGLASTID[HA3]
936           MC = $
937           $ = HREGFUTID[HA3]
938           MC = $
939           $ = HNEXTDEL[HA3]
940           MC = $
941           $ = HRANGDEL[HA3]
942           MC = $
943           $ = HRANGFUT[HA3]
944           MC = $
945           $ = HREGELDEL[HA3]
946           MC = $
947           $ = HREGELNR[HA3]
948           MC = $
949           $ = HPRIORITY[HA3]
950           MC = $                          " KLAAR MET REDDEN
951           $ = 0                           " HAAKJES TELLER
952           MC = $
953           HGASMETER[HA3] = $
954           SUBC(:MT[128])                  " LEES; $ := HNEXTDEL
955           $ - 6232, Z                     " BECOMES?
956      Y,   SUBC(:MT[132])                  " CLAUSE UITREKENEN

957                                                                   " 12.21
958                                                                   " HAEOR - 1
959      N,   JUMP(54)                        " RESET
960           SUBC(:MT[124])                  " LL :LEES
961      U,   $ - 6242, Z                     " ROUNDOPEN?
962      N,   $ - 6244, Z                     " SQUAREOPEN?
963      Y,   $ = 1
964      Y,   M[B - 1] + $
965      Y,   JUMP(- 6)
966      U,   $ + 5633, Z                     " ROUNDCLOSE?
967      N,   $ + 5631, Z                     " SQUARECLOSE?
968      Y,   $ = - 1
969      Y,   JUMP(- 6)
970           $ = - HNEXTDEL[HA3]
971      U,   $ - 597, Z                      " WHILE?
972      N,   $ - 598, Z                      " DO?
973      N,   $ - 1, Z                        " COMMA?
974      Y,   $ = M[B - 1], Z                 " TOP = 0?
975      Y,   JUMP(39)                        " INVERSIE EN RESET
976           $ = - HNEXTDEL[HA3]
977           $ - 595, Z                      " STEP?
978      N,   JUMP(- 19)                      " NAAR LL
979           $ = HFUTSYM[HA3]
980           $ + 5236, Z                     " NEG?
981      Y,   SUBC(:MT[103])                  " LEES
982           SUBC(:MT[102])                  " LEES
983           $ '*' 255
984      U,   $ - 67, P
985      Y,   JUMP(3)
986           $ - 63, P
987      Y,   SUBC(:MT[103])                  " CLAUSE UITREKENEN
988      Y,   SUBC(:MT[96])                   " LEES
```

```
 989          $ = - HNEXTDEL[HA3]
 990          $ - 596, Z                          " UNTIL?

 991                                                                          " 12.21
 992                                                                          " HAFOR - 2
 993      Y,  SUBC(:MT[99])                       " CLAUSE UITREKENEN
 994          JUMP(114)
 995          SUBC(:MT[91])                       " K :LEES
 996      U,  $ - 598, Z                          " DO
 997      N,  $ - 611, Z                          " ROUND CLOSE
 998      Y,  JUMP(10)                            " NAAR PRECSYM = IDENTIFIER?
 999          $ - 5631, Z                         " ROUND OPEN?
1000      Y,  $ = - HPRECSYM[HA3]
1001      Y,  $ + 8, P
1002      Y,  JUMP(6)
1003          $ = - HNEXTDEL[HA3]
1004          $ '*' 255
1005      U,  $ - 69, P
1006      Y,  JUMP(10)                            " INVERSIE EN RESET
1007          $ - 63, P
1008      N,  JUMP(7)                             " RESET
1009          $ = - HNEXTDEL[HA3]
1010          $ - 6242, Z                         " ROUNDOPEN
1011      N,  SUBC(:MT[81])                       " CLAUSE UITREKENEN
1012      N,  JUMP(3)                             " RESET
1013          $ = - HNEXTDEL[HA3]
1014          $ - 598, Z                          " DO
1015      N,  JUMP(- 21)
1016          $ = - T, P                          " IET INVERSIE
1017          B - 1                               " INVERSIE
1018          $ = MC[- 1]
1019          HPRIORITY[HA3] = $
1020          $ = MC[- 1]
1021          HREGELNR[HA3] = $
1022          $ = MC[- 1]
1023          HREGELDEL[HA3] = $
1024          $ = MC[- 1]

1025                                                                         " 12.21
1026                                                                         " HAFOR - 3
1027          HRANGFUT[HA3] = $
1028          $ = MC[- 1]
1029          HRANGDEL[HA3] = $
1030          $ = MC[- 1]
1031          HNEXTDEL[HA3] = $
1032          $ = MC[- 1]
1033          HREGFUTID[HA3] = $
1034          $ = M[B - 1]
1035          HREGLASTID[HA3] = $
1036          $ = M[B - 2]
1037          HCIN[HA3] = $
1038          $ = M[B - 3]
1039          HWIJZER = $
1040          $ = M[B - 4]
1041          HPRECSYM[HA3] = $
1042          $ = M[B - 5]
1043          HFUTSYM[HA3] = $
1044      Y,  JUMP(5)                             " NU - SIMPLE FORSTATEMENT
1045          $ = HFUTSYM[HA3]
1046          $ '*' '77777'                       " ID NUMBER OF FUTSYM
```

```
1047          MC = $
1048          $ = '1320'                          " FORS
1049          JUMP(30)
1050          $ = HSPAN[HA3]
1051          M[B - 5] = $
1052          $ = HMAXSPAN[HA3]
1053          M[B - 4] = $
1054          $ = 2
1055          PLUS$(HCBH[HA3])
1056      U,  $ - HMAXITH[HA3], P
1057      Y,  HMAXITH[HA3] = $
1058          $ = MT[29]                          " $ = 11

1059                                                                  " 12.21
1060                                                                  " HAFOR - 4
1061          HGEN
1062          $ = HOBTOP
1063          $ - 1
1064          M[B - 2] = $
1065          $ = MT[21]                          " SE0
1066          HGEN
1067          HGEN
1068          $ = HOBTOP
1069          $ - 1
1070          M[B - 1] = $
1071          $ = MT[16]                          " SE1
1072          HGEN
1073          $ = MT[15]                          " B = :MA[2]
1074          HGEN
1075          B + 1
1076          $ = 0
1077          HMAXSPAN[HA3] = $
1078          HSPAN[HA3] = $
1079          $ = 81
1080          HGASMETER[HA3] + $
1081          $ = '1220'
1082          MC = $
1083          HBOV1
1084          HBOV2
1085          SE33
1086          HCYCLE2
1087          SE0
1088          SE1
1089          B = :MA[2]
1090          $ = 11
1091          $ = MT[26]                          " BEGIN SUBROUTINE
1092          GL0 = $

1093                                                                  " 12.21
1094                                                                  " HAFOR - 5
1095          SE33
1096          HARUND
1097          $ = MC[- 1]
1098          JUMP(22)
1099          $ = HPRECSYM[HA3], P                " SUBROUTINE CLAUSE
1100      N,  GOTO(MC[- 1])
1101          $ - 8, P                            " IDENTIFIER?
1102          $ = - T, P                          " DAN CONSTANT LEVERT YES
1103      Y,  GOTO(MC[- 1])
1104          G = - HCHN[HA3]
```

```
1105          F + F
1106          S = :HDL, Z
1107          SUBC(MS)
1108          SE39
1109          S = G, R                          " DECLARED?
1110      N,  GOTO(MC[- 1])
1111      U,  S '*' '30000', Z                  " FORMAL BY VALUE DAN NO
1112      N,  S '*' '30000'                     " MAAK ER NON FORMAL NOT BIJ VALUE VA
1113          S '*' '37274', Z                  " NONFORMAL BY VALUE VAR ,INTEGER OR REAL
1114          GOTO(MC[- 1])
1115      N,  JUMP(- 94)                        " RESET
1116          S = HFUTSYM[HA3]
1117          S + 5236, Z                       " NEG
1118      Y,  SUBC(:MT[- 26])                   " LEES
1119          JUMP(- 119)
1120          MAFOR[162]
1121          S '*' - HPAG
1122          G = S
1123          S = T
1124          S '*' HPAG
1125          G + S
1126          S = - HNEXTDEL[HA3]
1127          GOTOR(G)

1128                                                          " 12.22
1129                                                          " MASTER - 0
1130 MASTER(43)
1131          S = HRESP[HA3]
1132          S -10, R
1133      N,  S = 2
1134      N,  HRESP[HA3] = S
1135      N,  S = HBASE[HA3]
1136      N,  S + 513
1137      Y,  S = HOBTOP
1138          G = M[B - 1]
1139          F - '620', Z                      " FORBECOMES
1140      N,  M[B - 7] = S
1141      N,  JUMP(21)
1142          S = 20                            " PRIJS SE102
1143          HKOST
1144          S = MT[22]                        " DQ(MC[ - 1])
1145          HGEN
1146          S = MT[21]                        " SUBC(:RSE102)
1147          HGEN
1148          S = MT[20]                        " DQS(MA[2])
1149          HGEN
1150          S = MT[19]                        " DQ(FLV)
1151          HGEN
1152          S = MT[16]                        " DQS(MA[2])
1153          HGEN
1154          S = MT[18]                        " DQ(FRV)
1155          HGEN
1156          S = MT[14]                        " MA[9] = F
1157          HGEN
1158          S = MT[13]                        " S = 16
1159          G = - M[B - 4]
1160          HOBT
1161          S = 3
1162          HGASMETER[HA3] = S
```

```
1163                                                                    " 12.22
1164                                                                    "ASTER - 1
1165          $ = 0
1166          HSPAN[HA3] = $
1167          SE33
1168          HCYCLE2
1169          DO(MC[ - 1])
1170          SUBC(:RSE102)
1171          DOS(MA[2])
1172          DO(ELV)
1173          MA[9] = F
1174          $ = 16
1175          DO(ERV)

1176                                                                    " 12.23
1177                                                                    " HAUNTIL - 0
1178 HAUNTIL(57)
1179          $ = M[B - 1]
1180          $ - '620', Z                      " FORBECOMES?
1181     N,   JUMP(15)
1182          $ = HRESP[HA3]
1183          $ - 4, P
1184     N,   $ = 2
1185     N,   HRESP[HA3] = $
1186          $ = MT[8]                         " SUBC(:RSE104)
1187          HGEN
1188          $ = MT[7]                         " DO(MC[ - 1])
1189          HGEN
1190          $ = MT[43]                        " MA[9] = F
1191          HGEN
1192          $ = '1020'
1193          M[B - 1] = $
1194          JUMP(33)
1195          SUBC(:RSE104)
1196          DO(MC[ - 1])
1197          $ = 0
1198          HKOST
1199          $ = MT[35]                        " MC = F, Z
1200          HGEN
1201          $ = HOBTOP
1202          $ - M[B - 7]
1203          M[B - 6] = $
1204          $ = HRESP[HA3]
1205          $ - 10, P                         " FORSTATEMENT SPACE
1206     N,   $ = 2
1207     N,   HRESP[HA3] = $
1208          $ = '2411'                        " Y, JUMP(:STAT)
1209          RCS(11)
1210     Y,   $ + HRESP[HA3]

1211                                                                    " 12.23
1212                                                                    " HAUNTIL - 1
1213     Y,   $ - 3
1214     N,   $ + 508
1215          HGEN
1216          F = 1
1217          G - HOBTOP
1218          $ = - G
1219          G - HRESP[HA3]
1220          M[B - 3] = - G
```

```
1221          HOBT
1222          E = 1
1223          G - M[B - 3]
1224          $ = MT[9]                          " SE33
1225          HOBT
1226          $ = 2
1227          HRESP[HA3] - $
1228          $ = HOBTOP
1229 M[B - 5] = $
1230          $ = 0
1231          HSPAN[HA3] = $
1232          $ = 1
1233          HGASMETER[HA3] + $
1234          SE33
1235          HCYCLE2
1236          MA[9] = E
1237          MC = E, Z

1238                                                                  " 12.24
1239                                                                  " HADO - 0
1240 HADO(133)
1241          $ = M[B - 1]
1242      U,  $ - '1320', Z                      " FORS?
1243      Y,  JUMP(32)
1244          JUMP(1)                            " PRIJS SE103
1245          HKOST
1246          $ = M[B - 1]
1247      U,  $ - '620', Z                       " FORBECOMES ?
1248      N,  JUMP(4)
1249          $ = MT[111]                        " DO(MC[- 1])
1250          HGEN
1251          $ = MT[110]                        " SUBCD(:R103E3)
1252          JUMP(3)
1253          $ - '720', Z                       " WHILE?
1254      Y,  $ = MT[108]                        " SUBCD(:R103E1)
1255      N,  $ = MT[108]                        " SUBCD(:RSE103)
1256          HGEN
1257          $ = HRESP[HA3]
1258          $ - 3, P
1259      N,  $ = 2
1260      N,  HRESP[HA3] = $
1261          $ = MT[96]                         " SE33
1262          HGEN
1263          HGEN                               " GEN(EMPTY)
1264          G = - HOBTOP
1265          $ = :HOBTEXT, Z
1266          SUBC(MS)
1267          $ = A
1268          DO(MD[- 1])
1269          G = - M[B - 2]
1270          HOBT
1271          $ = HOBTOP
1272          $ - 1
1273          M[B - 2] = $
1274          $ = '1101'                         " FORCLAUSE
1275          JUMP(76)                           " NAAR TOP :=

1276                                                                  " 12.24
1277                                                                  " HADO - 1
1278          $ = 8                              " KOSTEN VAN E - DYN, Z EN N,E = MB, E
```

```
1279          WKOST
1280          G = - M[B - 2]
1281          F + F
1282          F - 1
1283          S = :HDL, Z
1284          SUBC(MS)
1285          SE39
1286          MC = G                          " DL[2 * UNDERTOP + 1]
1287          G = - M[B - 3]
1288          F + F
1289          S = :HDL, Z
1290          SUBC(MS)
1291          SE39
1292          S = G
1293          S '*' 1, Z                      " N DAN INTEGER
1294      Y,  S = '6170'                      " F - DYN, Z
1295      N,  S = '6171'                      " G - DYN, Z
1296          RCS(12)
1297          S + MC[- 1]
1298          WGEN
1299          S = MT[67]                      " N, F = M[B - 2], E
1300          WGEN
1301          S = HRESP[WA3]
1302          S - 5, R
1303      N,  JUMP(20)
1304          S = HOBTOP
1305          S '*' - 511
1306          G = S
1307          S = M[B - 3]
1308          S '*' - 511
1309                                                          " 12.24
1310                                                          " WADO - 2
1311          S - G, Z
1312      N,  JUMP(17)
1313          G = - M[B - 3]
1314          S = :WOBTEXT, Z
1315          SUBC(MS)
1316          SE39
1317          F = - F
1318          S = '2411'                      " Y, JUMP(:STAT)
1319          RCS(11)
1320          S + HOBTOP
1321          S + G
1322          WOBT
1323          S = 2, Z                        " ZET COND N
1324          HRESP + S
1325          JUMP(8)
1326          S = 2
1327          HRESP[WA3] = S
1328          S = HBASE[WA3]
1329          S + 514, R                      " ZET COND TRUE
1330      N,  S = HOBTOP
1331      N,  S + 1
1332          G = - S
1333          SUBC(:MT[37])
1334          S = '5023'                      " N, JUMP(:STAT)
1335          RCS(12)
1336      N,  S + HRESP[WA3]
1337      N,  S - 3
```

```
1338      Y,  S + 508
1339          HGEN
1340          G = - HOBTOP
1341                                                                    " 12.24
1342                                                                    " HADO - 3
1343          M[B - 3] = - G                    " BEGIN VAN DE STATEMENT
1344          F + 1
1345          S = - G
1346          G - HRESP[HA3]
1347          M[B - 4] = - G
1348          HOBT
1349          F = 1
1350          G - M[B - 4]
1351          S = MT[12]                        " SE33
1352          HOBT
1353          S = 2
1354          HRESP[HA3] - S
1355          S = MT[16]                        " B - 2
1356          HGEN
1357          S = '1201'                        " SIMPLE FORCLAUSE
1358          M[B - 1] = S
1359          S = 0
1360          HSPAN[HA3] = S
1361          HGASMETER[HA3] = S
1362          S = MT[3]
1363          GLO = S
1364          SE33
1365          HABLOCKINT
1366          HCYCLE2
1367          DO(MC[- 1])
1368          SUBCD(:P103E3)
1369          SUBCD(:P103E1)
1370          SUBCD(:PSE103)
1371      N,  F = M[B - 2], F
1372          B - 2
1373          S = :HOBTEXT, Z
1374          SUBC(MS)
1375          S = A
1376          DO(MD[- 1])
1377          G = - M[B - 4]
1378          HOBT
1379          GOTOR(MC[- 1])
1380                                                                    " 12.25
1381                                                                    " HAWHILE - 0
1382 HAWHILE(9)
1383          S = '720'                         " WHILE
1384          M[B - 1] = S
1385          S = MT[5]
1386          HGEN
1387          S = 0
1388          HSPAN[HA3] = S
1389          SE33
1390          HCYCLE2
1391          DO(MC[ - 1])
1392                                                                    " 12.26
1393                                                                    " HASTRING - 0
1394 HASTRING(94)
```

```
1395          $ = HRESP[HA3]
1396          $ - 6, F
1397      N,  $ = 2
1398      N,  HRESP[HA3] = $
1399          HGEN
1400          G = - HOBTOP
1401          $ = :HOBTEXT, Z
1402          SUBC(MS)
1403          $ = A
1404          DO(MD[ - 1])
1405          SUBC(:MT[50])                  " REVPOL[REVTOP] := $ ; REVTOP + 1
1406          $ = 1
1407          HOBTOP - $
1408          HRESP[HA3] + $
1409          $ = MT[4]                      " JUMP(0)
1410          G = $
1411          G + HRESP[HA3]
1412          F - 3
1413          $ + HFUTSYM[HA3]
1414          JUMP(0)
1415      U,  $ - G, F
1416      Y,  $ = G
1417          HGEN
1418      N,  $ = HFUTSYM[HA3]
1419          JUMP(0)
1420      Y,  $ = HRESP[HA3]
1421      Y,  $ - 4
1422          SUBC(:MT[44])                  " FORSTATEMENT
1423      Y,  JUMP(17)
1424          HOBTOP + $
1425          HRESP[HA3] - $
1426          HWIJZER + $

1427                                         " 12.26
1428                                         " HASTRING - 1

1429          $ = - 103
1430          HFUTSYM[HA3] = $
1431          $ = '4040'                     " PC VAN STRING
1432          SUBC(:MT[25])
1433          $ = '104'                      " IDENT NE
1434          SUBC(:MT[23])
1435          $ = '77777'
1436          MC = $
1437          F = + 0
1438          MC = F
1439          HBOV1
1440          HBOV2
1441          SE33
1442          HCYCLE2
1443          HWIJZER + $
1444          HFUTSYM[HA3] - $
1445          HOBTOP + $
1446          HRESP[HA3] - $                 " RESP := 4
1447          $ = 511
1448          HGEN
1449          F = - 514
1450          G - HBASE[HA3]
1451          $ = :HOBTEXT, Z
1452          SUBC(MS)
1453          $ = A
```

```
1454          DO(MD[ - 1])
1455          HGEN
1456          HGEN
1457          JUMP( - 50)
1458          MC = $                          " SUBROUTINE REVPOL[REVTOP] := $
1459          G = - HREVTOP[HA3]              " REVTOP + 1
1460          $ = :HREVPOL, Z

1461                                                                  " 12.26
1462                                                                  " HASTRING - 2
1463          SUBC(MS)
1464          $E38
1465          G = M[B - 3]
1466          DO(MC[ - 1])
1467          $ = 1
1468          HREVTOP[HA3] + $
1469          B - 1
1470          GOTOR(MC[ - 1])
1471          G = HOBTOP                      " SUBROUTINE FORSTATEMENT
1472          $ + G
1473          MC = $
1474          MC = G
1475          $ = HWIJZER
1476          MC = $
1477          G - M[B - 3], Z
1478      Y,  B - 3
1479      Y,  $ - HOBTOP                      " GEEF $ ZIJN INGANGSWAARDE
1480      Y,  GOTOR(MC[ - 1])
1481          G = - M[B - 1]
1482          $ = :HTEXTPASS2, Z
1483          SUBC(MS)
1484          $E39
1485          $ = G
1486          G = - M[B - 2]
1487          HOBT
1488          $ = 1
1489          M[B - 1] + $
1490          PLUS$(M[B - 2])
1491          G = $
1492          JUMP( - 16)

1493                                                                  " 12.27
1494                                                                  " HAZOEKSPOOR - 0
1495 HAZOEKSPOOR(99)     to continue error-search after error in pass2 has been detected.
1496          $ = 0
1497          HREVTOP[HA3] = $
1498          G = HNEXTDEL[HA3]
1499          $ = - M[B - 1]
1500      U,  $ '*' 1, Z                      " STATSTARTADM?
1501      N,  JUMP(13)
1502          F + 603, Z                      " SEMICOLON?
1503      N,  JUMP(2)
1504          $E33
1505          HASEMCOL
1506          F + 5, Z                        " $ELSE?
1507      N,  JUMP(2)
1508          $E33
1509          HASELSE
1510          F + 9, Z                        " END?
1511      N,  SUBC(:HT[641)                   " LEES
```

```
1512      N,  JUMP( - 11)
1513          SE33
1514          HAEND
1515      U,  S '*' 8, Z                          " OPERATOR?
1516      N,  JUMP(4)
1517          B - 5
1518          HOND1
1519          HOND2
1520          JUMP( - 23)
1521      U,  S + '420', Z                        " ARRAYOPEN?
1522      N,  JUMP(11)
1523          F + 603, Z                          " SEMICOLON?
1524      N,  SUBC(:MT[51])                       " LEES
1525      N,  JUMP( - 3)
1526          S = M[B - 4]
1527          S - '120', Z                        " OWN?

1528                                                                  " 12.27
1529                                                                  " HAZOEKSPOOR - 1
1530      Y,  JUMP(60)
1531          B - 3
1532          HOND1
1533          HOND2
1534          SE33
1535          HCYCLE2
1536      U,  S + '220', Z                        " STATIT?
1537      N,  JUMP(8)
1538          F + 607, Z                          " STATEMENTTHEN?
1539      N,  SUBC(:MT[38])                       " LEES
1540      N,  JUMP( - 3)
1541          SE33
1542          HATHEN[24]
1543          HBOV1
1544          HBOV2
1545          JUMP( - 12)
1546      U,  S + '320', Z                        " EXPRESSION IF?
1547      N,  S + '1120', Z                       " ALG OPEN?
1548      Y,  B - 1
1549      Y,  JUMP( - 30)
1550      U,  S - '400', Z                        " SWITCH?
1551      N,  JUMP(13)
1552          F + 603, Z                          " SEMICOLON?
1553      N,  SUBC(:MT[24])
1554      N,  JUMP( - 3)
1555          B - 5
1556          HOND1
1557          HOND2
1558          S = MC[- 3]
1559          HGASMETER[HA3] = S
1560          S = MC[- 3]
1561          HMAXSPAN[HA3] = S

1562                                                                  " 12.27
1563                                                                  " HAZOEKSPOOR - 2
1564          S = MC[- 3]
1565          HSPAN[HA3] = S
1566          JUMP( - 34)
1567          S = '1101'                          " NU TUSSEN FOR EN DO; FORCLAUSE
1568          M[B - 1] = S
1569          S = 0
```

```
1570          M[B - 2] = S
1571          M[B - 3] = S
1572          C + 598, Z                          " DO?
1573      N,  SUBC(:MT[6])                        " LEES
1574      N,  JUMP( - 3)
1575          S = MT[3]
1576          GLO = S
1577          SE33
1578          HABLOCKINT
1579          HAZOEKSPOOR(45)
1580          S = MT[3]                           " SUBROUTINE LEES
1581          GLO = S
1582          SE33
1583          HARUND
1584          HAZOEKSPOOR(85)
1585          S = MC[- 1]
1586          S '*' - HPAG
1587          G = S
1588          S = T
1589          S '*' HPAG
1590          S + G
1591          G = HNEXTDEL[HA3]
1592          GOTOR(S)
1593          B - 1
1594          S = 1
1595          MIN$(HOWNARRAYLINK[HA3])
1596          G  - S
1597          HOBT
1598          JUMP(- 66)
1599                                              " 12.28
1600                                              " HADECAE - 0
1601  HADECAE(52)
1602          S = M[B - 3], P                     " - NO ADDRESS?
1603      N,  JUMP(34)
1604          S '*' - 511
1605          G = S
1606          S = HOBTOP
1607          S '*' - 511
1608          S - G, Z                            " SAMEPAGE?
1609      N,  JUMP(14)
1610          G = - M[B - 3]
1611          S = :HOBTEXT, Z
1612          SUBC(MS)
1613          SE39
1614          F = - F
1615          S = '241'                           " JUMP(:STAT)
1616          RCS(8)
1617          S + HOBTOP
1618          S + G
1619          S - 1
1620          HOBT
1621          S = 2
1622          HRESP[HA3] + S
1623          JUMP(12)
1624          S = HRESP[HA3]
1625          S - 2, P
1626      Y,  S = HOBTOP
1627      N,  S = HBASE[HA3]
1628      N,  S + 513
```

```
        G = - S
        S = :HOBTEXT, Z
        SUBC(MS)
        S = A
        DO(MD[- 1])

                                                                      " 12.28
                                                                      " HADECAE - 1
        G = - M[B - 3]
        HOBT
        S = M[B - 4]
        HGASMETER[HA3] = S
        HGEN                           " GEN(EMPTY)
        S = HOBTOP
        S - 1
        M[B - 2] = S
        S = MT[10]                     " SE1
        HGEN
        S = 0
        HSPAN[HA3]=S
        HMAXSPAN[HA3] = S
        MA = B
        GL1 = A
        S = 31
        GBILL + S, P
        SE115
        SE34
        SE1

                                                                      " 12.29
                                                                      " HACONEXPR - 0
HACONEXPR(126)
        F = 2
        SUBC(:MT[104])                 " !
        MC = G                         " TYPE SECOND OPERAND
        S '*' 2, Z                     " REAL?
    Y,  F = 6
    N,  F = 5
        SUBC(:MT[99])                  " !
        MC = G                         " TYPE FIRST OPERAND
        F = 3
        SUBC(:MT[96])                  " !
        MC = F                         " STACK(EMPTY); STACK(STAART SEC, OPERAND)
    Y,  F = 4
    Y,  SUBC(:MT[93])                  " !
    Y,  M[B - 2] = - S                 " STACK(KOP SEC, OPERAND)
    Y,  F = 7
    N,  F = 6
        SUBC(:MT[89])                  " !
        MC = E                         " STACK(EMPTY); STACK(STAART FIRST OPERAND)
    Y,  F = 8
    N,  F = 7
        S = - M[B - 5]
        S '*' 2, Z                     " REAL?
    Y,  SUBC(:MT[83])                  " !
    Y,  M[B - 2] = - S                 " STACK(KOP FIRST OPERAND)
        S = - M[B - 10]                " OPERATOR
    U,  S '*' '1010', Z                " BOOLEAN OPERAND?
    N,  JUMP(11)
        RUS(12)                        " S = - 3, - 4, - 5, - 6 VOOR AND, OR, IMPL., EQUIV.
```

constant expression, like (2↑40 − 1) → are evaluated at compile time

```
1687          S + :MT[11]
1688          G = M[B - 3], R
1689          DO(MS)
1690                                                                  " 12.29
1691                                                                  " HACONEXPR - 1
1692          G = T
1693          B = 4
1694          JUMP(22)
1695      Y,  S = M[B - 1], R                 " AND
1696      N,  S = M[B - 1], R                 " OR
1697      N,  S = - M[B - 1], R               " IMPLIES
1698          S = M[B - 1], E                 " EQUIV,
1699          F = MC[- 2]                     " PAK FIRST OPERAND
1700      U,  S '*' '410', Z                  " RELATIONAL OPERATOR?
1701      N,  JUMP(80)
1702      U,  S + '14510', R                  " = OR ≠
1703      N,  JUMP(3)
1704          S = '4000'
1705          F = MC[- 2], Z
1706          JUMP(7)
1707      U,  S '*' '10000', Z
1708      N,  JUMP(3)
1709          F = MC[- 2], Z
1710      N,  F = - 1, E
1711          JUMP(2)
1712          F = MC[- 2], Z
1713      N,  F = 1, E
1714          G = T
1715          S '*' '4000', Z
1716      Y,  F = - F
1717          S = - MC[- 1]
1718          S '*' 2, Z                    " REAL?
1719          S = M[B - 6]
1720      N,  S + 1
1721          HREVTOP = S
1722          S = '210', Z                  " ZET CONDITIE NO; BOOLEAN EXPR,
1723          JUMP(21)                      " WEG MET CONDITIE NO
1724                                                                  " 12.29
1725                                                                  " HACONEXPR - 2
1726          S + :MT[41]                   " S = 0,-1,-2,-3,-4,-5 VOOR RESP, +,-,*,/,↓ EN ↑
1727          DO(MS)
1728      N,  B = 2
1729          S = - MC[- 1]
1730          S '*' 2, Z                    " REAL?
1731          S = M[B - 6]
1732      N,  JUMP(3)
1733      U,  S = M[57], Z
1734      N,  S + 1
1735          JUMP(3)
1736      U,  S = M[57], Z
1737      Y,  S + 1
1738      N,  S + 2
1739          HREVTOP = S
1740          M[B - 1] = G
1741      N,  S = M[57]
1742      N,  F = 4
1743      N,  SUBC(:MT[31])                 " ||
1744      Y,  S = '201'                     " INTEGER EXPR
```

```
1745      N,  $ = '202'                          " REAL EXPR
1746          G = M[B - 1]
1747          MC = $                             " VANAF 63 MET CONDITIE NO
1748          $ = G
1749          F = 3
1750          SUBC(:MT[24])                      " !!
1751          $ = MC[- 1]
1752          F = 2
1753          SUBC(:MT[21])                      " !!
1754      Y,  $ = M[B - 1], Z
1755      Y,  $ = '202'                          " NULL
1756      N,  $ = '102'                          " CONSTANT
1757          F = 1

1758                                                                  " 12.29
1759                                                                  " MACONEXPR - 3
1760          SUBC(:MT[16])                      " !!
1761          B - 1
1762          MA = B
1763          GL1 = A
1764          SE34
1765          SE REAL TO THE POWER
1766          SE REAL INT DIV
1767          F/MC[- 2]
1768          F * MC[- 2]
1769          F - MC[- 2]
1770          F + MC[- 2]                        " BASIC ADDRESS VOOR 65
1771          G - HREVTOP                        " !
1772          $ = :HREVPOL, Z
1773          SUBC(MS)
1774          SE39
1775          $ = - G
1776          GOTOR(MC[- 1])
1777          MC = $                             " !!
1778          G - HREVTOP
1779          $ = :HREVPOL, Z
1780          SUBC(MS)
1781          SE38
1782          G = M[B - 3]
1783          DO(MC[- 1])
1784          B - 1
1785          GOTOR(MC[- 1])
1786          RUS(12)
1787      U,  $ + 4, F
1788      N, MC = F
1789      N,  F = M[B - 4]
1790          JUMP(- 63)

1791                                                                  " 12.30
1792                                                                  " MAFINPASS 2- 0
1793 MAFINPASS2(92)          end of pass 2
1794          G = - HOWNARRAYLINK[HA3], F
1795      Y,  JUMP(10)
1796          $ = :HOBTEXT, Z
1797          SUBC(MS)
1798          SE39
1799          F = - F
1800          $ = :HOBTEXT, Z
1801          SUBC(MS)
1802          $ = A
```

```
1803          DO(MD[- 1])
1804          G = - HOUNARRAYLINK[HA3]
1805          HOBT
1806          B + 2
1807          S = 9
1808          SE73
1809          HABLOCKINT[238]
1810          G = HOBTOP
1811          F * 4                          " KOSTEN LENGTE OBJECTTEXT
1812          S = G
1813          GBILL + S, P
1814          SE115
1815          S = 0
1816          HKOST
1817          S = MT[-3]                     " S=0
1818          HGEN
1819          S = HRESP
1820          S - 3, P
1821      N,  S = 2
1822      N,  HRESP = S
1823          S = MT[47]                     " SE33
1824          HGEN
1825          S = MT[46]                     " UNORMALEXIT

1826                                                                 " 12.30
1827                                                                 " HAEINPA$S2 - 1
1828          HGEN
1829          F = 511
1830          G + HBASE[HA3]
1831          HOBTOP = G
1832          F = - 1
1833          G - HREGELNR
1834          S = :HRL, Z
1835          SUBC(MS)
1836          SE38
1837          G = HOBTOP
1838          DO(MC[- 1])
1839          F = - 2
1840          G - HREGELNR
1841          S = :HRL, Z
1842          SUBC(MS)
1843          SE38
1844          F = - 1
1845          DO(MC[- 1])
1846          S = ULIST, P
1847      N,  JUMP(6)
1848          B + 2
1849          S = 9
1850          SE73
1851          CNEWPAGE
1852          JUMP(1)                        " I,P,V, CHEEN
1853          HADRUK[1]
1854          S = HMAXITH
1855      U,  S - 57, P
1856      N,  JUMP(6)
1857          S = - 100
1858          HFOUT = S
1859          B + 2

1860                                                                 " 12.30
```

```
1861                                                                    " HAFINPASS2 - 2
1862          $ = 9
1863          SE73
1864          HBOODSCHAR
1865          $ + 3
1866          HAFLOOP = $
1867          $ = HMAXSPAN[HA3]
1868          HWIJZER = $
1869          CHEEN
1870          UCALCULATION
1871          UTRANSTIME = G
1872          $ = HERRORFOUND[HA3], R
1873      N,  JUMP(3)
1874          $ = 2
1875          SE33
1876          UNORMALEXIT
1877          SE6
1878          SE6
1879          G = --HOBTOP
1880          $ = :HOBTEXT[HA1]
1881          CHEEN
1882          UINVSE117
1883          $ = :HTEXTPASS2[HA1]
1884          CHEEN
1885          UOUTARRAY
1886          B + 2
1887          $ = 9
1888          SE73
1889          UINVEXECUTION
1890                                                                    " 12.31
1891                                                                    " UINVEXECUTION
1892  UINVEXECUTION(12)
1893          $ = HAFLOOP
1894          A = 2
1895          SE18
1896          $ = HWIJZER
1897          SE1
1898          F = - 1
1899          $ = :HOBTEXT, Z
1900          SUBC(MS)
1901          GL0 = A
1902          DO(MD[- 1])
1903          GL1 = A
1904          SE34
```

} if error found, then enter final writes

} two block exits

" NU TERUG IN ALGOLBLOCK

} call of the "procedure" execution

} makes invariant address of first word of "object text", fills GL0 with it

→ and SE34 is the general goto, performing a jump to the inv_adr. in GL0

```
                                                                                          " 17.0
                                                                                          " HACREATEOB - 0
HACREATEOB(424)
        A = 4
        S = 8                                   " 7 + EEN VOOR IEDER BLOK OF 15
        SE18
        S = HREVTOP, Z                          " REVPOL LEEG?
        SE71['200000']                          " Y,    SE71
        S = HONDERGRENS
        MA[- 8] = S                             " RED HONDERGRENS
        S = HBOVENGRENS
        MA[- 9] = S                             " RED HBOVENGRENS
        S = 11[HSTACKLENGTE + 28]
        SE0
        B - 28
        HBOVENGRENS = B
        B - HSTACKLENGTE[- HSTACKDIEPTE]
        HONDERGRENS = B
        F = 0
        HFBEZET[HA5] = G
        HCBEZET = - B
        HCONCOR[HA5] = F                        " CONCOR EN SIGCOR BEIDEN TRUE (+0)
        S = M4[ - 10]                           " TOP
    U,  S - '1220', Z                           " FOR?
    Y,  MC[1] = -S
    Y,  S = M4[-14]
    Y,  MC[-1] = S
    Y,  F = M4[ - 12]                           " IS
    Y,  MC = F                                  " STOR
    N,  MC = S                                  " NEEM DE OUDE TOP OVER( ≠ FOR)
    N,  S = 1                                   " STOR
    Y,  S = 2                                   " IS
        MC = - S
        JUMP(362)
        S = HREVTOP
        S - 1
        MC = S
        LUS(3)
        GBILL + S, P

                                                                                          " 17.0
                                                                                          " HACREATEOB - 1
        SE115
        G = - M[B - 1]                          " NEXT
        S = :HREVPOL, Z
        SUBC(MS)
        SE39
        S = G
    U,  S - '32010', Z                          " FUNEDES?
    N,  JUMP(2)
        SE33
        HESPECEUDES
    U,  S '*' 6, Z                              " ¬ (IDENTIFIER OR CONSTANT)?
    N,  JUMP(33)
        MC = S
        F = 1
        G - M[B - 2]
        S = :HREVPOL, Z
        SUBC(MS)
```

creates object code for statements that are found in reversed polish form in the array "revpol"

```
58          SE39
59          $ = MC[ - 1]
60      U,  $ - '60310', Z                  " NEG?
61      N,  $ - '71110', Z                  " NON?
62      N,  $ + '53100', Z                  " GOTO?
63      N,  JUMP(11)
64          $ = G
65          $ '+' '100'                     " OPERANDS DEALT WOTH
66          F = 1
67          G - M[B - 1]
68          SUBC(:MT[226])                  " REVPOL[ - G] := $
69          G = M[B - 1]
70          F - 3
71          MC = G
72          MBOV1
73          MBOV2
74          JUMP( - 33)

75                                                                  " 17.0
76                                                                  "MACREATEOB - 2
77          $ = G, F
78      N,  JUMP( - 8)
79          F = 2
80          G - M[B - 1]
81          $ = :MREVPOL, Z
82          SUBC(MS)
83          SE39
84          JUMP( - 12)
85          B - 1                           " MCYCLE3
86          MOND1
87          MOND2
88          $ = M[B - 2]
89      U,  $ + 2, Z                        " IS?
90      N,  JUMP(2)
91          SE33
92          MEEUDES[96]                     " END OF IS
93          $ = $, F
94      N,  JUMP(301)
95          G = - M[B - 2]
96          $ = :MREVPOL, Z
97          SUBC(MS)
98          SE39
99          MC = G                          " REVPOL[UNDERTOP]
100         F = 1
101         G - M[B - 3]
102         $ = :MREVPOL, Z
103         SUBC(MS)
104         SE39
105         $ = G, F
106     Y,  $ = - $
107         $ '*' '100', Z                  " OPERANDS DEALT WOTH
108         $ = - MC[ - 1]

109                                                                 " 17.0
110                                                                 " MACREATEOB - 3
111         MOP[MA5] = - $
112     N,  JUMP(83)
113     U,  $ + '16010', Z                  " GOTO?
114     Y,  JUMP(28)
115         $ '*' '110', Z                  " OPERATOR?
```

```
116     N,  JUMP(6)
117         G = - M[B - 1]
118         $ = :HREVPOL, Z
119         $UBC(MS)
120         SE39
121         F = '204', Z
122     N,  JUMP(20)
123         $ = MT[18]                      " GEMEENSCHAPPELIJK TERUGKEER ADRES
124         GL0 = $                         " LET OP VANAF 258 EN 305
125         F = 1                           " EEN ANDER TERUGKEERADRES
126         G - M[B - 1]
127         $ = :HREVPOL, Z
128         SUBC(MS)
129         SE39
130         $ = G, F
131     N,  $ = - $
132     U,  S '*' '20', Z                   " LABEL?
133     Y,  JUMP(2)
134         SE33
135         HELABVAL                        " S WORDT GEBRUIKT
136         $ '*' 8, Z                      " BOOLEAN?
137     Y,  JUMP(2)
138         SE33
139         HEBOVAL
140         SE33
141         HEARVAL
142         HACREATEOB[134]

143                                                 " 17.0
144                                                 " HACREATEOB - 4
145         $ = - HOP[HA5]
146     U,  S '*' '210', Z                  " ARITHM. OPERATOR?
147     Y,  F = :MT[14]                     " BASISADRES = 151
148     Y,  JUMP(7)
149     U,  S '*' '410', Z                  " RELATIONAL OPERATOR?
150     Y,  F = :MT[23]                     " BASISADRES = 163
151     Y,  JUMP(4)
152     U,  S '*' '1010', Z                 " BOOLEAN OPERATOR?
153     Y,  F = :MT[26]                     " BASISADRES = 169
154     Y,  RUS(1)
155     N,  F = :MT[31]                     " BASISADRES = 176
156         RUS(11)
157         G - S
158         S = MG
159         GL0 = S
160         GL1 = A
161         MA = B
162         SE34
163         HEAROP                          " +
164         HECOMPLUS                       " COMPLUS
165         HEAROP                          " -
166         HECOMPLUS                       " COMMIN
167         HEAROP                          " *
168         HECOMTIM                        " COMTIM
169         HEAROP                          " /
170         HECOMDIV                        " CONDIV
171         HEINTDIV                        " :
172         HEKVAD                          " KWADRAAT
173         HEPOWER                         " ↑
174         HENEG                           " NEG
```

```
175          HEREL                          " =
176          HEREL                          " ≠

177                                                                  " 17.0
178                                                                  " HACREATEOB - 5
179          HECOMREL[1]                    " COMPLEX =
180          HECOMREL[0]                    " COMPLEX ≠
181          HEREL                          " <
182          HEREL                          " ≤
183          HEREL                          " >
184          HEREL                          " ≥
185          HEEQUIV
186          HEIMP
187          HEOR
188          HEAND
189          HENON
190          HEETHEN
191          HEELSE
192          HEGOTO
193          HEBECOMES
194          HEBECOMES[84]                  " MULTIPLE BECOMES
195          HEEUDES
196          HACREATEOB[306]                " KOMT HIER NIET VOOR; WORDT GEBRUIKT OP 304
197          HESUBSCR                       " SUBSCRIPTCOMMA
198          HESUBSCR                       " SUBSCRIPTION
199          HESWITCH
200     U,   S + '22010', Z                 " BECOMES
201     N,   S + '26010', Z                 " MULTIPLEBECOMES
202     N,   JUMP(17)
203          S = MT[3]
204          GL0 = S
205          SE33
206          HELEFTVAL
207          HACREATEOB[382]
208          S = :HREVPOL, Z
209          SUBC(MS)
210          SE39

211                                                                  " 17.0
212                                                                  " HACREATEOB - 6
213          E - '26010', Z             " MULTIPLE BECOMES
214     Y,   S = HOP[HA5]
215     Y,   S - '22010', Z                     " BECOMES
216     N,   JUMP(68)
217          S = MT[3]
218          GL0 = S
219          SE33
220          HECHECK
221          HACREATEOB[270]                 " NAAR 'T ZELFDE PUNT ALS JUMP OP 201
222     U,   S - '20000', Z                  " ETHEN?
223     N,   JUMP(45)
224          S = MT[3]
225          GL0 = S
226          SE33                            " WORDT GEBRUIKT OP 241
227          HEBOVAL
228          HACREATEOB[214]
229          S = HCONCOR[HA5], E
230     Y,   S = '5023'                      " N,    JUMP(:STAT)
231     N,   S = '5022'                      " Y,    JUMP(:STAT)
232          RCS(12)
```

```
233           G = $
234           $ = HRESP
235       U,  $ - 4, R
236       N,  $ = 2
237       N,  HRESP = $
238       Y,  $ + G
239       Y,  $ - 3
240       N,  $ = G
241       N,  $ + 508
242           HGEN
243           HCBEZET[HA5] = - B
244           HCONCOR[HA5] = B

245                                                                  " 17.0
246                                                                  " HACREATEOB - 7
247           $ = HOBTOP
248           $ + HRESP
249           $ - 1
250           MC = $
251           F = 2
252           G - M[B - 3]
253           SUBC(:MT[53])                  " REVPOL[ - G] := $
254           $ = HOBTOP
255           $ - 1
256           G = - M[B - 1]
257           HOBT
258           $ = MT[ - 31]                  " SE33
259           F = 1
260           G - MC[ - 1]
261           HOBT
262           $ = 2
263           HRESP - $
264           $ = M[B - 1]
265           MC = $
266           F = M[B - 4]
267           M[B - 3] = F
268           $ = HGASMETER
269           M[B - 4] = $
270           JUMP(16)
271       U,  $ + '20000', Z             " SUBSCRIPTION?
272       N,  $ + '24000', Z             " SWITCHDESIGNATOR?
273       Y,  JUMP(13)
274           $ = MT[1]
275           JUMP( - 144)
276           HACREATEOB[260]
277           G = - M[B - 2]
278           $ = :HREVPOL, Z

279                                                                  " 17.0
280                                                                  " HACREATEOB - 8
281           SUBC(MS)
282           SE39
283           F - '42010', Z               " SUBSCRIPTKOMMA
284       N,  JUMP(4)
285           $ = MT[ - 61]
286           GLO = $
287           SE33
288           HECRESUB
289           B - 1                        " OOK COMMIT CRESUB EN CHECK
290           HOND1
```

```
291          WOND2
292          F = 1
293          G - M[B - 1]
294          S = :HREVPOL, Z
295          SUBC(MS)
296          SE39
297          S = G, P
298      Y,  JUMP( - 220)
299          S '+' '100'
300          F = 1
301          G - M[B - 1]
302          SUBC(:MT[6])                    " REVPOL[ - G] := S
303          F = 2
304          G - M[B - 1]
305          S = :HREVPOL, Z
306          SUBC(MS)
307          SE39
308          JUMP( - 224)
309          MC = S                          " SUBROUTINE REVPOL[ - G] := S
310          S = :HREVPOL, Z
311          SUBC(MS)
312          SE38

313                                                                  " 17.0
314                                                                  " HACREATEOB - 9
315          G = M[B - 3]
316          DO(MC[ - 1])
317          B - 1
318          GOTOR(MC[ - 1])                 " EINDE SUBROUTINE
319          G = - M[B - 1]
320          S = :HREVPOL, Z
321          SUBC(MS)
322          SE39
323          S = G
324          S '*' 6, Z                      " ¬ (IDENTIFIER OR CONSTANT)?
325      N,  S = MT[ - 122]
326      N,  JUMP(- 191)
327          F = 1
328          G - M[B - 1]
329          S = :HREVPOL, Z
330          SUBC(MS)
331          SE39
332          S = G, P
333      N,  S = - S
334          G = M[B - 3]
335          F - '220', Z                    " STATEMENT IF?
336      N,  F - '500', Z                    " WHILE?
337      N,  JUMP(13)
338          S '*' '1067', Z                 " BOOLEAN EN ¬ ARRAY ?
339      N,  JUMP(3)
340          S = - HCONCOR[HA5], P
341      Y,  S = MT[64]                      " S = - T, P
342          JUMP(38)
343          S = M[B - 3]
344          S - '220', Z                    " STATEMENT IF?
345      Y,  S = 114
346      N,  S = 132

347                                                                  " 17.0
348                                                                  " HACREATEOB - 10
```

```
349          JUMP(45)
350      U,  A = M[57], Z
351      N,  SUBCD(:RSE88)
352          JUMP(0)
353          E + '300', Z                    " ARRAY OPEN?
354      N,  JUMP(19)
355      U,  S '*' '1074', Z                 " REAL OR INTEGER AND ¬ ARRAY?
356      N,  JUMP(11)
357          S '*' 2, Z                      " ¬ REAL?
358      N,  S = MT[ - 9]                    " U,    A = M[57], Z
359      N,  SUBC(:HGENERATE)
360      N,  S = MT[ - 10]                   " N,    SUBCD(:RSE88)
361      N,  SUBC(:HGENERATE)
362          S = HSIGCOR[HA5], R
363      Y,  S = MT[47]                      " MC = G
364      N,  S = MT[45]                      " MC = - G
365          E = 1
366          HANOGEN
367          JUMP(23)
368          S = HNEXTDEL
369          S + 602, Z                      " COLON?
370      Y,  S = 133
371      N,  S = 134
372          JUMP(22)
373          JUMP(0)
374          E - '400', Z                    " UNTIL?
375      N,  E + '200', Z                    " FORBECOMES?
376      N,  E - '500', Z                    " FORS?
377      N,  JUMP(8)
378          S '*' '1074', Z                 " REAL OR INTEGER AND ¬ ARRAY
379      N,  S = 135
380      N,  JUMP(14)

381                                                                  " 17.0
382                                                                  " HACREATEOB - 11
383          S = - HSIGCOR[HA5], R
384      Y,  S = MT[26]                      " E = - E
385      Y,  SUBC(:HGENERATE)
386          JUMP(6)
387          JUMP(0)
388          E + '600', Z                    " SWITCH ?
389      N,  JUMP(54)
390          S '*' '2057', Z                 " LABEL AND ¬ PROCEDURE?
391      N,  S = 136
392      N,  JUMP(4)
393          S = 1
394          HGASMETER + S
395          S = 0                           " INSPRINGPUNT KOMENDE VAN HEFUDES[215]
396          HREVTOP = S
397          HFOUT = S
398          SE6
399          E = MA[- 9]
400          HBOVENGRENS = E                 " HERSTELT OOK HONDERGRENS
401          S = HREVTOP, Z
402          SE71['200 000']                 " Y, SE71
403          B + 2
404          S = 9
405          SE73
406          HBOOOSCHAR
407          G = - M[B - 3], R
```

```
408     N,  JUMP( - 189)
409         JUMP(- 115)
410         S = - T, P
411         F = - F
412         MC = - G
413         MC = G
414         S + 1, Z                        " STOP ?
415     Y,  JUMP(- 93)
416         SE33
417         HESPECFUDES[134]                " END OF SPECIALE IS

418                                                                 " 17.0
419                                                                 " HACREATEOB - 12
420         G = - HREGELDEL
421         SUBC(:MT[19])
422     N,  JUMP(- 365)
423         S = HRANGDEL
424         S - 1, P
425     N,  S = HNEXTDEL
426     N,  S + 603, Z                      " SEMICOLON ?
427     Y,  F = 0
428     Y,  JUMP(3)
429         SUBC(:MT[9])
430     N,  JUMP(- 373)
431         F = 1
432         G - HREGELDEL
433         S = :HRL, Z
434         SUBC(MS)
435         SE38
436         G = HOBTOP
437         DO(MC[- 1])
438         JUMP(- 381)
439         F = 1
440         G - HREGELDEL
441         S = :HRL, Z
442         SUBC(MS)
443         SE39
444         F + 2, Z
445         GOTO(MC[- 1])
446         S = HREVTOP                     " NU STATEMENT START ADMISSIBLE OP TOP
447         S - 3, Z                        " ALS REVTOP = 3, DAN ENKELE IDENTIFIER ALS STATEMENT
448     N,  JUMP( - 54)                     " MAAR
449         S = 107                         " IDENTIFIER IS GEEN PROCEDURE IDENTIFIER
450         JUMP( - 52)                     " ANDERS WAS REVTOP = 6

451                                                                 " 17.1
452                                                                 " HEBECOMES - 0
453 HEBECOMES(196)
454         SUBC(:MT[39])                   " S := G := REVPOL[UNDERTOP]
455         M[B - 1] = S
456         LCS(1), P                       " ¬ LEFTHAND?
457     N,  S - '*' 8, Z                    " ¬ COMPLEX?
458     Y,  JUMP(21)
459         S = 3
460     U,  S - HFBEZET[HA5], Z
461     N,  HFBEZET[HA5] = S
462     N,  JUMP(77)                        " NAAR MULTIPLEBECOMES
463         S = HSIGCOR[HA5], P
464     Y,  S = MT[36]                      " MC = F
465     N,  S = MT[36]                      " MC = - F
```

```
466         F = 2
467         HANOGEN
468     Y,  S = MT[34]                      " F = MC[- 4]
469     N,  S = MT[34]                      " F = - MC[- 4]
470         SUBC(:MT[168])
471         S = MT[33]                      " GIR = F
472         HGEN
473         S = MT[32]                      " F = MC
474         F = - 4
475         HANOGEN
476         S = 14
477         HGASMETER + S
478     N,  HSIGCOR[HA5] = B
479         JUMP(60)                        " NAAR MULTIPLEBECOMES
480         S = HFBEZET[HA5]
481         S - 2, Z
482     Y,  S = G
483     Y,  SUBC(:MT[162])                  " TO TEST FOR NON FORMAL INTEGER
484     N,  JUMP(45)
485         S = MT[21]                      " U,  A = M[57], Z

486                                                                 " 17.1
487                                                                 " HEBECOMES - 1
488         HGEN
489         S = MT[20]                      " N,  SUBCD(:RSE88)
490         HGEN
491         S = 1
492         HFBEZET[HA5] = S
493         S = 3
494         HGASMETER + S
495         JUMP(46)                        " NAAR MULTIPLEBECOMES
496         F = 1                           " SUBROUTINE S := G := REVPOL[UT - 1]
497         G - M[B - 3]
498         S = :HREVPOL, Z
499         SUBC(MS)
500         $E39
501         S = G, R                        " GEBRUIKT OP 170
502         GOTOR(MC[- 1])
503         MC = F                          " RIJTJE OPDRACHTEN
504         MC = - F
505         F = MC[- 4]
506         F = - MC[- 4]
507         GIR = F
508         F = MC
509     U,  A = M[57], Z
510     N,  SUBCD(:RSE88)
511         G = T
512         G = - T, R
513         SUBCD(:RSE105)
514         DO(MC[- 1])
515         F = 0
516         F = - F
517         M0[- 256] = G, R
518         M0[- 256] = F
519         M0[- 256] = - F

520                                                                 " 17.1
521                                                                 " HEBECOMES - 2
522         F = MC[- 2]
523         M0[- 256] = G
```

```
524           '10000000'
525           M[B + 2] = F
526           F = GIR
527           F = M[B]
528           JUMP(- 1)
529           S = MT[- 13]                        " F = 0, SUBROUTINE GIR := 0
530           HGEN
531           S = MT[- 23]                        " GIR = F
532           HGEN
533           GOTOR(MC[- 1])
534           S = HCBEZET[HA5], R
535       N,  JUMP(8)
536           S = HCONCOR[HA5], R
537       N,  HCONCOR[HA5] = B
538       Y,  S = MT[- 26]                        " G = T
539       N,  S = MT[- 26]                        " G = - T, R
540           HGEN
541           JUMP(2)
542           SUBC(:MT[- 45])                     " MULTIPLEBECOMES
543           M[B - 1] = S
544           S = M[B - 1]
545           LCS(1), R                           " GEEN LEFTHAND?
546       Y,  JUMP(13)
547       U,  S '*' 16, Z                         " ¬ BOOLEAN?
548       N,  S = MT[- 34]                        " SUBCD(:RSE105)
549       N,  JUMP(5)
550           S = - HS:GCOR[HA5], R
551       Y,  S = MT[- 34]                        " F = - F
552       Y,  SUBC(:HGENERATE)
553       Y,  HS:GCOR[HA5] = B

554                                                                   " 17.1
555                                                                   " HEBECOMES - 3
556           S = MT[- 39]                        " DO(MC[- 1])
557           F = - 2
558           HANOGEN
559           S = 1
560           HGASMETER + S
561           JUMP(35)
562           F = 2
563           SUBC(:MT[- 631])                    " PAK REVPOL[UT - 2]
564           S - 2
565           G = - S
566           SUBC(:MT[- 65])                     " PAK REVPOL[- G]
567           MC = S
568           S = - M[B - 2]
569       U,  S '*' 8, Z                          " BOOLEAN?
570       Y,  HCBEZET[HA5] = B
571       Y,  S = MT[- 51]                        " M0[- 256] = G, R
572       Y,  JUMP(22)
573       U,  S '*'4, Z                           " COMPLEX?
574       N,  JUMP(15)
575           S = HS:GCOR[HA5], R
576       Y,  S = MT[- 55]                        " M0[- 256] = F
577       N,  S = MT[- 55]                        " M0[- 256] = - F
578           S + M[B - 1]
579           S + 2
580           HGEN
581           S = HFBEZET[HA5]
582           S - 3, Z
```

```
583     N,  S = MT[- 65]                    " E = 0
584     N,  SUBC(:HGENERATE)
585     N,  JUMP(6)
586         S = MT[- 63]                    " E = MC[- 2]
587         E = - 2, Z                      " EN ZET CONDITIE NO

588                                                                 " 17.1
589                                                                 " HEBECOMES - 4
590         HANOGEN
591         JUMP(2)
592         S '*' 1, Z                      "INTEGER?
593     Y,  S = MT[- 67]                    "M0[- 256] = G
594     N,  S = MT[- 71]                    "M0[- 256] = E
595     U,  S = HSIGCOR[HA5], P
596     N,  S + MT[- 69]                    "TEL ER '10000000' BY
597         S + MC[- 1]
598         HGEN
599         S = M[B - 1]
600         LCS(2), P                       "NOT INTERMEDIATE?
601     Y,  JUMP(34)
602         G = - M[B - 3], P
603     N, SUBC(:MT[- 100])
604         S = - M[B - 1]
605     U,  S '*' 4, Z                      "COMPLEX?
606     N,  JUMP(19)
607         E - '22010', Z                  "BECOMES?
608     N,  JUMP(5)
609         E = 1
610         G - M[B - 3]
611         SUBC(:MT[- 108])
612         LCS(1), P                       "NO LEFT HAND?
613     N,  JUMP(27)
614         S = MT[- 86]                    "M[B + 2] = E
615         SUBC(:MT[29])
616         S = MT[- 87]                    "E = GIR
617         HGEN
618         S = MT[- 110]                   "MC = E
619         E = 4
620         HANOGEN
621         SUBC(:MT[- 89])                 "GIR := 0

622                                                                 " 17.1
623                                                                 " HEBECOMES - 5
624         S = MT[- 92]                    " E = M[B]
625         E = - 2, Z                      "EN MAAK COND NO
626         HANOGEN
627         JUMP(13)
628         S '*' 8, Z                      "BOOLEAN?
629     Y,  S = - HCBEZET[HA5], P
630     N,  JUMP(12)
631         E - '22010', Z          "BECOMES
632     N,  S = M[B - 3]
633     N,  S + 2, Z                        "IS?
634     N,  S = MT[- 126]                   "S = G, P
635     N,  SUBC(:HGENERATE)
636     N,  HCBEZET[HA5] = B
637         JUMP(5)
638         S '*' 16, Z                     "- COMPLEX?
639     N,  S = M[B - 3], P                 "NIET STOR?
640     N,  SUBC(:MT[- 106])                "GIR := 0
```

```
641      N,  S = 20
642      N,  HGASMETER + S
643          S = 5
644          HGASMETER + S
645          SE33
646          HACREATEOB(78)
647          F = - 7                          " SUBROUTINE RUIMTE OM BOVEN B TE WERKEN, GEN(S)
648          JUMP(1)
649          F = - 4
650          G + HRESP, B
651      Y,  JUMP(2)
652          F = 2
653          HRESP = G
654          HGEN
655          GOTOR(MC[- 1])
656          S '*' '30076', Z
657      N,  S '+' '30000'
658      N,  S '*' '30076', Z
659          GOTO(MC[ - 1])

660                                                                  " 17.2
661                                                                  " HEGOTO - 0
662  HEGOTO(92)
663          G = - M[B - 1]
664          S = :HREVPOL, Z
665          SUBC(MS)
666          SE39
667          S = - G
668          S '*' 4, Z                       " IDENTIFIER
669      N,  JUMP(78)
670          F = 1
671          G - M[B - 1]
672          S = :HREVPOL, Z
673          SUBC(MS)
674          SE39
675          S = G
676      U,  S '*' '10000', Z                 " NON FORMAL?
677      Y,  RUS(15)
678      Y,  S - HCBH, Z                      " SPRONG BINNEN HETZELFDE BLOK?
679      N,  JUMP(63)
680          MC = G                           " RED REVPOL[TOP - 1]
681          S = 62
682          HKOST
683          F = 2
684          G - M[B - 2]
685          S = :HREVPOL, Z
686          SUBC(MS)
687          SE39
688          F + F
689          F + 1                            " G = 2 * REVPOL[TOP - 2] + 1
690          MC = G
691          F = - F
692          S = :HDL, Z
693          SUBC(MS)
694          SE39

695                                                                  " 17.2
696                                                                  " HEGOTO - 1
697          S = M[B - 2]
698          M[B - 2] = G
```

```
699         $ '*' '100', Z                  " DESTINATION DEFINED?
700     N,  JUMP(25)
701         $ = MC[- 2]                     " PAK UNDERTOP EN GOOI TOP WEG
702         $ '*' - 511
703         G = $
704         $ = HOBTOP
705         $ '*' - 511
706         $ - G, Z                        " SAME PAGE?
707     N,  JUMP(26)
708         G = - HOBTOP
709         $ = MT[15]                      " JUMP(- 1)
710         $ - G
711         $ - MC[- 1]
712         HOBT
713         $ = 1
714         HOBTOP + $
715         MINS(HRESP)
716         $ - 1, P
717     N,  SUBC(:HGENERATE)                " EMPTY
718     N,  $ = 1
719     N,  HOBTOP - $
720     N,  HRESP + $
721         $ = 0
722         HGASMETER = $
723         SE33
724         HACREATEOB[78]                  " HCYCLE3
725         JUMP(- 1)                       " GEBRUIKT OP 44
726         G = - MC[- 1]
727         $ = :HDL, Z
728         SUBC(MS)
729                                         " 17.2
730                                         " HEGOTO - 2
731     SE38
732     F = 1
733     G + HOBTOP
734     DO(MC[- 1])
735     JUMP(5)
736     G = - MC[- 1]
737     $ = :HOBTEXT, Z
738     SUBC(MS)
739     MC = A
740     DO(MD[- 1])
741     $ = MT[8]                       " SE33
742     SUBC(:HGENERATE[31])            " OBTEXT[OBTOP] := $; OBTOP := OBTOP + 1
743     $ = MC[- 1]
744     SUBC(:HGENERATE[31])            " IDEM
745     $ = 2
746     JUMP(- 30)
747     $ = MT[10]
748     GL0 = $
749     $ = G                           " REVPOL[TOP - 1] IN $
750     SE33                            " GEBRUIKT OP 74
751     HELABVAL
752     $ = 66
753     HKOST                           " PRIJS SE34
754     $ = MT[2]                       " SE34
755     HGEN
756     JUMP(- 34)
757     SE34
```

```
758          WEGOTO(85)

759                                                                          " 17.3
760                                                                          " WEETWEN = 0
761 WEETWEN(125)
762          B = 1
763          WOND1
764          WOND2
765          F = 1
766          G = M[B - 2]
767          S = :WREVPOL, Z
768          SUBC(MS)
769          SE39
770          S = G
771          MC = S                          " WORDT GEBRUIKT OP 19 EN 21
772     U,   S '*' 2, Z                      " ¬ REAL?
773     N,   S = 2
774     N,   JUMP(12)
775          S '*' 4, Z                      " ¬ COMPLEX?
776     N,   S = WFBEZET[WA5]
777     N,   S - 3, Z
778     Y,   JUMP(9)
779          S = MT[22]                      " S = 0
780          WGEN
781          S = MT[- 11]                    " MC = S
782          WGEN
783          S = MT[- 13]                    " MC = S
784          F = 2
785          WANOGEN
786          S = 3
787          WFBEZET[WA5] = S
788          F = 1
789          G - M[B - 3]
790          S = :WREVPOL, Z
791          SUBC(MS)
792          SE38
793          G = M[B - 3]

794                                                                          " 17.3
795                                                                          " WEETWEN = 1
796     U,   A = WSIGCOR[WA5], P             " IBUE DAN D[13] = 0
797     N,   F + '20000'
798     U,   A = WCONCOR[WA5], P             " IBUE DAN D[14] = 0
799     N,   F + '40000'
800          DO(MC[- 1])
801          WCBEZET[WA5] = - B
802          WSIGCOR[WA5] = B
803          WCONCOR[WA5] = B
804          S = 0                           " WORDT GEBRUIKT OP 17
805          WFBEZET[WA5] = S
806          F = 2
807          G - MC[- 2]
808          S = :WREVPOL, Z
809          SUBC(MS)
810          SE39
811          MC = G
812          S = WRESP
813          S - 2, P
814     N,   JUMP(23)
815          S = G
```

```
816         $ '*' - 511
817         G = $
818         $ = HOBTOP
819         $ '*' - 511
820         $ - G, Z
821     N,  JUMP(16)
822         G = - M[B - 1]
823         $ = :HOBTEXT, Z
824         SUBC(MS)
825         $E39
826         F = - F
827         MC = G

828                                                                  " 17.3
829                                                                  " HEETHEN - 2
830         $ = :HOBTEXT, Z
831         SUBC(MS)
832         $E39
833         $ = 2
834         HRESP + $
835         $ + G
836         G = MC[- 1]
837         $ + HOBTOP                  " $ + (OBTOP + 1) - (REVPOL[TOP - 2] - 1)
838         $ - MC[- 1]
839         JUMP(14)
840         $ = HRESP
841         $ - 4, F
842     N,  $ = 2
843     N,  HRESP = $
844         HGEN                        " GENERATE(EMPTY)
845         $ = 1
846         G = - HOBTOP
847         HOBTOP - $
848         HRESP+ $
849         $ = :HOBTEXT, Z
850         SUBC(MS)
851         $ = A
852         DO(MD[- 1])
853         G = - MC[- 1]
854         HOBT
855         F = 2
856         G - M[B - 2]
857         $ = :HREVPOL, Z
858         SUBC(MS)
859         $E38
860         F = - 1
861         G + HRESP

862                                                                  " 17.3
863                                                                  " HEETHEN - 3
864         G + HOBTOP
865         DO(MC[- 1])
866         $ = '241'                   " JUMP(:STAT)
867         RCS(8)
868         $ + HRESP
869         $ - 3
870         HGEN
871         F = 2
872         G - M[B - 2]
873         $ = :HREVPOL, Z
```

```
874           SUBC(MS)
875           SE39
876           MC = G
877           S = HOBTOP
878           S - 1
879           F = - F
880           HOBT
881           F = 1
882           G - M[B - 1]
883           S = MT[7]                          " SE33
884           HOBT
885           S = 2
886           HRESP - S
887           S = M[B - 4]                       " HAAL OUDE STAND GASMETER
888           G = HGASMETER
889           M[B - 4] = G
890           HGASMETER = S
891           SE33
892           HACREATEOB[78]                     " HCYCLE3

893                                                                          " 17.4
894                                                                          " HEEELSE - 0
895 HEEELSE(120)
896           F = 1
897           G - M[B - 2]
898           S = :HREVPOL, Z
899           SUBC(MS)
900           SE39
901           S = G
902           MC = S                             " GEBRUIKT OP 52 EN 54
903      U,   S '*' '20000', Z
904      U,   S = T, F
905      U,   S = - HSIGCOR[HA5], E              " - SIGNCOR E GEREDDE WAARDE
906      N,   JUMP(22)
907           S = HSIGCOR[HA5]
908           HSIGCOR[HA5] = - S
909           S = HFBEZET[HA5]
910           S - 3, Z
911      N,   S = MT[14]                         " F = - F
912      N,   JUMP(11)
913           S = MT[13]                         " MC = F
914           F = 2
915           HANOGEN
916           S = MT[11]                         " F = - M[B - 4]
917           HGEN
918           S = MT[93]                         " M[B - 4] = F
919           F = - 2                            " IS VOOR VOLGENDE OPDRACHT
920           HANOGEN
921           S = 9
922           HGASMETER + S
923           S = MT[89]                         " F = - MC[- 2]
924           HGEN
925           JUMP(12)
926           F = - F
927           MC = F

928                                                                          " 17.4
929                                                                          " HEEELSE - 1
930           F = - M[B - 4]
931      U,   S '*' '10', Z                      " - BOOLEAN ?
```

```
932     Y,  JUMP(7)
933         $ '*' '40000', Z
934         $ = - T, P
935         $ = HCONCOR[HA5], E
936     Y,  HCONCOR[HA5] = - $
937     Y,  $ = MT[78]                          " G = - T
938     N,  $ = MT[78]                          " G = T
939         HGEN
940         $ = M[B - 1]
941     U,  $ '*' 2, Z                          " NIET REAL?
942     N,  $ = 2
943     N,  JUMP(12)
944         $ '*' 4, Z                          " NIET COMPLEX?
945     N,  $ = HFBEZET[HA5]
946     N,  $ - 3, Z
947     Y,  JUMP(9)
948         $ = MT[11]                          " S = 0
949         HGEN
950         $ = MT[- 47]                        " MC = S
951         HGEN
952         $ = MT[- 49]                        " MC = S
953         E = 2
954         HANOGEN
955         $ = 3
956         HFBEZET[HA5] = $
957         $ = M[B - 4]
958         MINS(HGASMETER), P
959         BUS(HEENHEID), Z
960         $ = 0                               " GEBRUIKT OP 50
961                                             " 17.4
962                                             " HEEELSE - 2
963     N,  SUBC(:HRESTIT[2])
964     N,  $ = M[B - 4]
965     N,  HGASMETER = $
966         $ = - MC[- 1]
967         $ '*' '10', Z                       " BOOLEAN ?
968     Y,  $ = MT[7]                           " S = G, P
969     Y,  SUBC(:HGENERATE)
970         E = 2
971         G - M[B - 2]
972         $ = :HREVPOL, Z
973         SUBC(MS)
974         SE39
975         MC = G
976         $ = G, P                            " GEBRUIKTOP 68
977         $ '*' - 511
978         G = $
979         $ = HOBTOP
980         $ '*' - 511
981         $ - G, Z                            " SAME PAGE?
982     N,  JUMP(14)
983         G = - MC[- 1]
984         $ = :HOBTEXT, Z
985         SUBC(MS)
986         SE39
987         E = - E
988         $ = '241'                           " JUMP(:STAT)
989         RCS(8)
990         $ + HOBTOP
```

```
 991          $ + G
 992          $ - 1
 993          MOBT
 994          $ = 2
 995          MRESP + $
 996          JUMR(13)
 997          $ = MRESP
 998          $ - 2, R

 999                                                                  " 17.4
1000                                                                  " MEEELSE - 3
1001      N,  SUBC(:MGENERATE)
1002      N,  $ = 1
1003      N,  MRESP + $
1004      N,  MOBTOP - $
1005          G = - MOBTOP
1006          $ = :MOBTEXT, Z
1007          SUBC(MS)
1008          $ = A
1009          DO(MD[- 1])
1010          G = - MC[- 1]
1011          MOBT
1012          $ = MC[- 2]
1013          M[B - 2] = $
1014          MOND1
1015          MOND2
1016          SE33
1017          MACREATEOB[78]                  " MCYCLE3
1018          M[B - 4] = E
1019          E = - MC[- 2]
1020          G = - T
1021          G = T

1022                                                                  " 17.5
1023                                                                  " MEAROR - 0
1024 MEAROR(187)
1025          G = - M[B - 1]                  " REVPOL[TOP]
1026          SUBC(:MT[153])                  " RECHTERKANT REVPOL[ - G]
1027          E = 1
1028          G - M[B - 2]
1029          SUBC(:MT[150])                  " REVPOL[TOP - 1]
1030          E = 2
1031          G - M[B - 3]
1032          SUBC(:MT[147])                  " REVPOL[TOP - 2]
1033          $ = MOP[MA5]
1034          MC = $                          " REVPOL[UNDERTOP]
1035          E = 1
1036          G - M[B - 6]
1037          SUBC(:MT[142])                  " REVPOL[UNDERTOP - 1]
1038          $ = M[B - 1], R
1039          G = - M[B - 7]
1040      N,  E + 4
1041      N,  JUMR(4)
1042          E + 2
1043          SUBC(:MT[136])                  " [REVPOL[UNDERTOP - 2]]
1044          E = 1                           " 21 LEVERT OP ALS NIET GEWISSELD DAN
1045          G - MC[ - 1]                    " REVPOL[REVPOL[UNDERTOP - 2] - 1] ANDERS
1046          SUBC(:MT[133])                  " REVPOL[UNDERTOP - 4]
1047          $ = - M[B - 6]                  " REVPOL[TOP]
1048      U,  $ + '104', Z                    " KLAAR
```

```
1049     N,  $ '*' 2, Z                      " CONSTANT
1050         $ = M[B - 3]
1051     N,  JUMP(60)
1052         $ - '34310', Z                  " DIV?
1053     Y,  $ = - M[B - 2], R               " GEWISSELD?
1054     N,  JUMP(28)
1055         SUBC(:HBERGE)
1056         $ = - M[B - 6]                  " REVPOL[TOP]

1057                                                                  " 17.5
1058                                                                  " HEAROP - 1
1059         $ '*' 2, Z                      " CONSTANT
1060     N,  JUMP(9)
1061         $ = MT[7]                       " TERUGKEER ADRES VOOR TREAT CONSTANT
1062         R = 32                          " OPERATOR IS =
1063         GL0 = $
1064         $ = M[B - 7]
1065         MC = $                          " TOP VOOR TREAT CONSTANT
1066         MC = G                          " =
1067         SE33
1068         HETRCON
1069         HEAROP[50]
1070         $ = - M[B - 5]
1071         $ '*' 1, Z                      " INTEGER?
1072     Y,  $ = '6261'                      " G = DYN
1073     N,  $ = '6260'                      " R = DYN
1074         RCS(12)
1075         $ + M[B - 4]
1076         HGEN
1077         $ = - M[B - 1], R               " REVPOL[UNDERTOP - 4]  (WELWISSELEN)
1078     Y,  $ = - $
1079         $ '*' 1, Z                      " INTEGER?
1080     Y,  $ = MT[115]                     " G/MC[ - 1]
1081     N,  $ = MT[115]                     " R/MC[ - 2]
1082     Y,  R = - 1
1083     N,  R = - 2
1084         JUMP(57)
1085         $ = - HSIGCOR[HA5], R
1086     Y,  SUBC(:MT[101])                  " INVERT OP
1087         $ = HOP[HA5]
1088     U,  $ '*' '4000', Z                 " COMPLUS OF COMMIN ?
1089     Y,  $ = '4000'
1090         RUS(12)

1091                                                                  " 17.5
1092                                                                  " HEAROP - 2
1093         G = $
1094         $ = - M[B - 6]
1095         $ '*' 2, Z                      " CONSTANT ?
1096     Y,  $ = :MT[115]
1097     N,  $ = :MT[102]
1098         G + $
1099         G = MG
1100     Y,  $ = MT[46]                      " HEAROP[80]
1101     Y,  JUMP(- 37)
1102         $ = - M[B - 5]
1103         $ '*' 1, Z                      " INTEGER?
1104     Y,  $ = :MG[1]
1105     N,  $ = G
1106         RCS(12)
```

```
1107          $ + M[B - 4]
1108          HGEN
1109          $ = M[B - 3]
1110      U,  $ = '14310', Z                    " MINUS
1111      N,  $ = '20310', Z                    " COMMINUS
1112      Y,  $ = - M[B - 2], R                 " GEWISSELD?
1113      Y,  $ = - HSIGCOR[HA5]
1114      Y,  HSIGCOR[HA5] = $
1115          JUMP(56)
1116          $ = '34310', Z                    " DIV?
1117      Y,  $ = M[B - 2], R                   " NIET GEWISSELD?
1118      N,  JUMP(29)
1119          SUBC(:HBERGE)
1120          $ = HRESP
1121          $ - 3, R
1122      N,  $ = 2
1123      N,  HRESP = $
1124          $ = - M[B - 1], R

1125                                                          " 17.5
1126                                                          " HEAROP = 3
1127      Y,  $ = - $
1128          $ '*' 1, Z                        " INTEGER?
1129      Y,  F = :MT[76]
1130      N,  F = :MT[79]
1131          $ = - M[B - 5], R
1132      Y,  $ = - $
1133          $ '*' 1, Z                        " INTEGER?
1134      Y,  F = MG[0]
1135      N,  F = MG[2]
1136          MC = G
1137          $ = M[57]
1138          HGEN
1139      Y,  F = - 3
1140      N,  F = - 4
1141          $ = - M[B - 1], R
1142      Y,  $ = - $
1143          $ '*' 1, Z                        " INTEGER ?
1144      Y,  F + 1
1145          $ = MC[- 1]
1146          HANOGEN
1147          $ = 33
1148          JUMP(29)
1149          HEAROP[80]                        " GEBRUIKT OP 71
1150          $ = - HSIGCOR[HA5], R
1151      Y,  SUBC(:MT[40])                     " INVERT OP
1152          $ = HOP[HA5]
1153      U,  $ '*' '4000', Z                   " COMPLUS OF COMMIN
1154      Y,  $ - '4000'
1155          RUS(12)
1156          $ + :MT[45]
1157          G = MS
1158          $ = - M[B - 1], R

1159                                                          " 17.5
1160                                                          " HEAROP = 4
1161      Y,  $ = - $
1162          $ '*' 1, Z                        " INTEGER?
1163      Y,  $ = :MG[1]
1164      N,  $ = :MG[0]
```

```
1165          RCS(12)
1166      Y,  S + '75377'
1167      N,  S + '75376'
1168      Y,  F = - 1
1169      N,  F = - 2
1170          HANOGEN
1171          S = M[B - 2], F
1172      Y,  S = M[B - 3]
1173      Y,  S - '14310' ,Z                    " MINUS?
1174      Y,  S = HSIGCOR[HA5]
1175      Y,  HSIGCOR[HA5] = - S
1176          S = - HOP[HA5]
1177          S '*' '24000', Z                  " TIMES OR DIVISION?
1178      Y,  S = 17
1179      N,  S = 6
1180          HGASMETER + S
1181          S = HFBEZET[HA5]
1182          S - 3, Z
1183      N,  S = 2
1184      N,  HFBEZET[HA5] = S
1185          B - 6
1186          SE33
1187          HACREATEOB[78]                    " HCYCLE3
1188          S = :HREVPOL, Z                   " SUBROUTINE
1189          SUBC(MS)
1190          SE39
1191          S = MC[ - 1]
1192          MC = G

1193                                                          " 17.5
1194                                                          " HEAROR - 5
1195          GOTOR(S)
1196          S = - HOP[HA5]                    " SUBROUTINE INVERTOP
1197      U,  S '*' '24000', Z                  " TIMES OR DIV?
1198      Y,  GOTOR(MC[ - 1])
1199      U,  S '*' '4000', Z                   " - (COMPLUS OF COMMIN)
1200      Y,  S '+' '10000'
1201      N,  S '+' '30000'
1202          HOP[HA5] = - S
1203          GOTOR(MC[ - 1])
1204          G/MC[ - 1]
1205          F/MC[ - 2]
1206          '6060'
1207          '6160'
1208          '7060'
1209          '7160'
1210          G = MC[ - 2]
1211          G / MC[0]
1212          G = MC[- 3]
1213          F/MC[ - 1]
1214          F = MC[ - 3]
1215          G / MC[1]
1216          F = MC[- 4]
1217          F/MC[0]
1218          0
1219          16
1220          128
1221          144

1222                                                          " 17.6
```

```
1223                                                                    " HENEG - 0
1224 HENEG(67)
1225          G = - M[B - 1]
1226          S = :HREVPOL, Z
1227          SUBC(MS)
1228          SE39
1229          F - '104', Z                      " IDENTIFIERNE ?
1230      N,  S = HSIGCOR[HA5]
1231      N,  HSIGCOR[HA5] = - S
1232      N,  JUMP(51)
1233          S = HFBEZET[HA5], Z
1234      N,  SUBC(:HBERGE)
1235      Y,  S = HCBEZET[HA5], P
1236      N,  JUMP(11)
1237          S = HCONCOR[HA5], P
1238      Y,  S = MT[47]                        " S = T
1239      N,  S = MT[47]                        " S = - T
1240          HGEN
1241          S = MT[46]                        " MC = S
1242          F = 1
1243          HANOGEN
1244          HCBEZET[HA5] = - B
1245          HCONCOR[HA5] = B
1246          S = 3
1247          HGASMETER + S
1248          F = 2
1249          G - M[B - 1]
1250          S = :HREVPOL, Z
1251          SUBC(MS)
1252          SE39
1253          MC = G
1254          F = 1
1255          G - M[B - 2]
1256          S = :HREVPOL, Z

1257                                                                    " 17,6
1258                                                                    " HENEG - 1
1259          SUBC(MS)
1260          SE39
1261          S = - G
1262      U,  S '*' 4, Z                        " COMPLEX?
1263      N,  JUMP(11)
1264          S = MT[27]                        " F = - M0[- 256]
1265          S + M[B - 1]
1266          HGEN
1267          S = MT[23]                        " MC = F
1268          F = 2
1269          HANOGEN
1270          S = 2
1271          M[B - 1] + S
1272          F = 3, Z                          " EN ZET CONDITIE NO
1273          S = 13
1274          JUMP(5)
1275          S '*' 1, Z                        " INTEGER
1276      Y,  F = 1
1277      N,  F = 2
1278      Y,  S = 4
1279      N,  S = 5
1280          HGASMETER + S
1281          HFBEZET[HA5] = G
```

```
1282      N,  S = MT[9]                          " E = - DYN
1283      Y,  S = MT[9]                          " G = - DYN
1284          S + MC[- 1]
1285          HGEN
1286          SE33
1287          HACREATEOB[78]
1288          S = T
1289          S = - T
1290          MC = S
1291          MC = E
1292          E = - M0[- 256]
1293          G = - M0[- 256]
1294                                                          " 17.7
1295                                                          " HESUBSCR - 0
1296 HE$UBSCR(211)
1297          $ = HFBEZET[HA5]
1298          S - 2, Z
1299      Y,  S = MT[206]                        " U, A = M[57], Z
1300      Y,  SUBC(:HGENERATE)
1301      Y,  S = MT[205]                        " N, SUBCD(:RSE88)
1302      Y,  SUBC(:HGENERATE)
1303          S = HSIGCOR[HA5], R
1304      Y,  S = MT[17]                         " E = - E
1305      Y,  SUBC(:HGENERATE)
1306      N,  HSIGCOR[HA5] = 8
1307          S = 0
1308          HNOS = S                           " EEN TE LAAG
1309          G = - M[8 - 2]
1310          SUBC(:MT[167])
1311          R - '42010', Z                     " SUBSCRIPTCOMMA?
1312      N,  JUMP(6)
1313          S = 1
1314          HNOS + S
1315          8 - 1
1316          HOND1
1317          HOND2
1318          JUMP(- 10)
1319          E = 2                              " NU REVPOL[UNDERTOP] = SUBSCRIPTION
1320          G - M[8 - 2]
1321          SUBC(:MT[156])
1322          E = - E                            " GEBRUIKT OP 7
1323          E + 2
1324          SUBC(:MT[153])
1325          MC = G                             " GEBRUIKT OP 43
1326          E = 1
1327          G - M[8 - 3]
1328          SUBC(:MT[149])
1329                                                          " 17.7
1330                                                          " HESUBSCR - 1
1331          MC = G
1332          S = - G
1333          S '+' '20000'
1334      U,  S '*' '30000' ,Z                   "FORMAL NOT BY VALUE?
1335      Y,  E = MT[170]                        " S = M0[-256] ,R  | ,Z
1336      N,  E = MT[147]                        " S = :MT0[-256] ,R  | ,Z
1337          MC = E
1338          G = HNOS
1339          E - 1, Z                           " 2DIMENSIONAAL ?
1340      Y,  S '*' 8, Z                         " BOOLEAN ?
```

} list of instructions that may have to be generated (this you will find everywhere)

subscription

```
1341      N,  F + 0, F                          " MEER DAN 2DIMENSIONAAL ?
1342      Y,  S = MT[- 16]                      " MC = G
1343      Y,  F = 1
1344      Y,  SUBC(:HGENERATE[44])
1345          S = MC[-1]                        " S = :M0[- 256], Z
1346          S + M[B -3]
1347          HGEN
1348      Y,  S = HNOS
1349      Y,  S + MT[137]                       " A = 1
1350      Y,  SUBC(:HGENERATE)
1351      Y,  S = MT[134]                       " SUBCD(:RSE92)
1352      Y,  JUMP(6)
1353          G = HNOS, Z                       " ZO NEE, DAN F = 1
1354          G - HOBTOP
1355      N,  S = M[B -1]                       " S = :M0[- 256], F
1356      N,  S + M[B -3]
1357      N,  SUBC(:HGENERATE[35])
1358          S = MT[122], Z                    " SUBC(MS), EN ZET CONDITIE NO
1359          G = - HNOS
1360      Y,  F - 1
1361          HANOGEN
1362          S = MC[-6]

1363                                                                  " 17.7
1364                                                                  " HESUBSCR - 2
1365      U,  S + 2, Z                          " IS?
1366      N,  JUMP(22)
1367          S = M[B - 1]
1368      U,  S '*' 8, Z                        " ¬ BOOLEAN?
1369      N,  S = MT[120]                       " TRANSMIT SUBSCR, BOOLEAN
1370      N,  JUMP(15)
1371          S '*' '30000'
1372          S - '10000', Z                    " FORMAL NOT BY VALUE?
1373      N,  JUMP(5)
1374          S = MT[116]                       " G = M0[- 255]
1375          S + M[B - 2]
1376          HGEN
1377          S = MT[114]                       " TRANSMIT SUBSCRIPTED FORMAL
1378          JUMP(7)
1379          S = - M[B - 1]
1380      U,  S '*' 2, Z                        " REAL?
1381      Y,  S = MT[111]                       " TRANSMIT SUBSCRIP REAL
1382      Y,  JUMP(3)
1383          S '*' 1, Z                        " INTEGER?
1384      Y,  S = MT[109]                       " TRANSMIT INTEGER
1385      N,  S = MT[109]                       " TRANSMIT COMPLEX
1386          HGEN
1387          S = 84
1388          JUMP(89)                          " NAAR 'B - 2' EN AFREKENEN
1389          G = - S, F                        " STOP OF SPECIALIS ?
1390      N,  SUBC(:MT[91])
1391          MC = G
1392          F - '22010', Z                    " BECOMES?
1393      N,  F - '4000', Z                     " MULTIPLE BECOMES?
1394          F = 1
1395          G - M[B - 6]
1396      Y,  SUBC(:MT[85])

1397                                                                  " 17.7
1398                                                                  " HESUBSCR - 3
```

```
1399      Y,  $ = G
1400      Y,  $ '*' '100'. Z                    " ¬ OPERANDS DEALT WITH?
1401      N,  JUMP(31)
1402          G + MT[95]                        " INDICATIE LEFTHAND
1403          MC = G
1404          F = 1
1405          G - M[B - 7]
1406          $ = :HREVPOL, Z
1407          SUBC(MS)
1408          SE38                              " GEBRUIKT OP 122
1409          G = M[B - 3]
1410          DO(MC[- 1])
1411          $ = MC[- 3]
1412      U,  $ '*' 8, Z                        " ¬ BOOLEAN ?
1413      N,  $ = MT[85]                        " LEFT SUBSCRIPTED BOOLEAN
1414      N,  JUMP(12)
1415          $ '*' '30000'
1416          $ - '10000', Z                    " FORMAL NOT BY VALUE?
1417      Y,  $ = MT[82]                        " DO(M0[- 254])
1418      Y,  $ + M[B - 3]
1419      Y,  JUMP(7)
1420          $ = - M[B - 2]
1421      U,  $ '*' 2, Z                        " REAL?
1422      Y,  $ = MT[78]                        " LEFT SUBSCR, REAL
1423      Y,  JUMP(3)
1424          $ '*' 1, Z                        " INTEGER?
1425      Y,  $ = MT[- 18]                      " LEFT INTEGER
1426      N,  $ = MT[75]                        " LEFT COMPLEX
1427          F = 2
1428          HANOGEN
1429          $ = 72
1430          F = 0                             " GEBRUIKT OP 149

1431                                                                  " 17.7
1432                                                                  " HESUBSCR - 4
1433          HFBEZET[HA5] = G
1434          JUMP(46)                          " NAAR 'B - 3' EN AFREKENEN
1435          $ = M[B - 2]
1436      U,  $ '*' 8, Z                        " ¬ BOOLEAN?
1437      Y,  JUMP(9)
1438          $ = MT[66]                        " RIGHT BOOLEAN
1439          HGEN
1440          $ = M[B - 1]
1441          $ - '22010', Z                    " BECOMES?
1442      N,  $ = MT[63]                        " $ = G, F
1443      N,  SUBC(:HGENERATE)
1444      N,  HCBEZET[HA5] = B
1445          $ = 39
1446          JUMP(- 15)
1447          $ '*' '30000'
1448          $ - '10000', Z                    " FORMAL NOT BY VALUE?
1449          $ = - M[B - 2]
1450      N,  JUMP(15)
1451      U,  $ '*' 4, Z                        " COMPLEX?
1452      N,  $ = 2
1453      N,  JUMP(6)
1454          $ = MT[- 23]                      " F = 0
1455          HGEN
1456          $ = MT[50]                        " MC = F
1457          F = 2
```

```
1458          HANOGEN
1459          S = 3
1460          HFBEZET[HA5] = S
1461          S = MT[46]                          " DO(M0[- 253])
1462          S + M[B - 3]
1463          HGEN
1464          S = 52

1465                                                                  " 17.7
1466                                                                  " HESUBSCR - 5
1467          JUMP(15)
1468      U,  S '*' 2, Z                          " REAL?
1469      Y,  S = MT[41]                          " RIGHT SUBSCR, REAL
1470      Y,  F = 2
1471      Y,  JUMP(8)
1472          S '*' 1, Z                          " INTEGER?
1473      Y,  S = MT[16]                          " RIGHT INTEGER
1474      Y,  F = 1
1475      N,  S = MT[36]                          " B + 2
1476      N,  F = 2
1477      N,  SUBC(:HGENERATE[44])
1478      N,  S = MT[34]                          " RIGHT SUBSCRIPTED COMPLEX
1479      N,  F = 3
1480          HFBEZET[HA5] = G
1481          HGEN
1482          S = 45
1483          B - 1
1484          B - 2
1485          HGASMETER + S
1486          SE33
1487          HACREATEOB[78]
1488          S = :HREVPOL, Z                 " SUBROUTINE
1489          SUBC(MS)
1490          SE39
1491          GOTOR(MC[- 1])
1492          S = :M0[- 256],B
1493          S = :M0[-256] ,Z
1494          SUBCD(:RSE92)
1495          A = 1
1496          SUBCD(:RSE108)
1497          G = M0[- 255]
1498          SUBCD(:RSE68)

1499                                                                  " 17.7
1500                                                                  " HESUBSCR - 6
1501          SUBCD(:RSE66)
1502          SUBCD(:RSE65)
1503          SUBCD(:RSE67)
1504          '200 000 000'
1505          SUBCD(:RSE106)
1506          DO(M0[- 254])
1507          SUBCD(:RSE40)
1508          SUBCD(:RSE42)
1509          SUBCD(:RSE107)
1510          S = G, B
1511          MC = B
1512          DO(M0[- 253])
1513          SUBCD(:RSE41)
1514          B + 2
1515          SUBCD(:RSE43)
```

```
1516          $ = M0[-256] ,R
1517          $ = M0[-256] ,Z
1518      U,  A = M[57], Z
1519      N,  SUBCD(:RSE88)

1520                                                                    "17.8
1521                                                                    "HENON -0
1522 HENON(37)
1523          G = -M[B - 1]
1524          $ = :HREVPOL ,Z
1525          SUBC(MS)
1526          SE39
1527          F = '104' ,Z                          "IDENTIFIERNE?
1528      N,  $ = HCONCOR[HA5]
1529      N,  HCONCOR[HA5] = - $
1530      N,  JUMP(23)
1531          $ = HCBEZET[HA5] ,R
1532      N,  JUMP(10)
1533          $ = HCONCOR[HA5] ,R
1534      Y,  $ = MT[21]                            "$ = T
1535      N,  $ = MT[21]                            " $ = -T
1536          HGEN
1537          $ = MT[20]                            "MC = $
1538          F = 1
1539          HANOGEN
1540      N,  HCONCOR[HA5] = B
1541          $ = 3
1542          HGASMETER + $
1543          F = 2
1544          G = M[B - 1]
1545          $ = :HREVPOL ,Z
1546          SUBC(MS)
1547          SE39
1548          $ = MT[10]                                    "$ = M0[-256] ,R
1549          $ + G
1550          HGEN
1551          HCBEZET[HA5] = B
1552          $ = 4
1553          HGASMETER + $
1554          SE33
1555          HACREATEOB[78]
1556          $ = T
1557          $ = -T
1558          MC = $
1559          $ = -M0[-256] ,R

1560                                                                    " 17.9
1561                                                                    " HEAND - 0
1562 HEAND(41)
1563          F = 2
1564          G = M[B - 1]
1565          $ = :HREVPOL, Z
1566          SUBC(MS)
1567          SE39
1568          MC = G
1569          G = - M[B - 2]
1570          $ = :HREVPOL, Z
1571          SUBC(MS)
1572          SE39
1573          F = '104', Z                  " IDENTNE?
```

```
1574      N,  JUMP(10)
1575          $ = HCONCOR[HA5], P
1576      Y,  $ = '1266'                          " Y,    $ = DYN, P
1577      N,  $ = '1367'                          " N,    $ = - DYN, P
1578          LUS(15)
1579          $ + MC[ - 1]
1580          HGEN
1581          $ = 3
1582          HGASMETER + $
1583          $E33
1584          HACREATEOB[78]                      " HCYCLE3
1585          F + 2, Z                            " CONSTANT?     (NULL KOMT NIET VOOR)
1586      N,  JUMP(6)
1587          $ = - MC[ - 1], P
1588      N,  JUMP( - 6)
1589          $ = MT[13]                          " $ = - 1, P
1590          HGEN
1591          HCONCOR[HA5] = B
1592          JUMP( - 12)
1593          $ = HCONCOR[HA5], P
1594      Y,  $ = MT[6]                           " Y,    $ = M[B - 1], P

1595                                                                          " 17.9
1596                                                                          " HEAND - 1
1597      N,  $ = MT[6]                           " N,    $ = - M[B - 1], P
1598          F = - 1
1599          HANDGEN
1600          $ = MT[0]                           " B - 1
1601          B - 1
1602          JUMP( - 21)
1603      Y,  $ = M[B - 1], P
1604      N,  $ = - M[B - 1], P
1605          $ = - 1, P

1606                                                                          " 17.10
1607                                                                          " HEOR - 0
1608  HEOR(41)
1609          F = 2
1610          G - M[B - 1]
1611          $ = :HREVPOL, Z
1612          SUBC(MS)
1613          SE39
1614          MC = G
1615          G = - M[B - 2]
1616          $ = :HREVPOL, Z
1617          SUBC(MS)
1618          SE39
1619          F - '104', Z                        " IDENTNE?
1620      N,  JUMP(10)
1621          $ = HCONCOR[HA5], P
1622      Y,  $ = '1267'                          " N,    $ = DYN, P
1623      N,  $ = '1366'                          " Y,    $ = - DYN, P
1624          LUS(15)
1625          $ + MC[ - 1]
1626          HGEN
1627          $ = 3
1628          HGASMETER + $
1629          SE33
1630          HACREATEOB[78]                      " HCYCLE3
1631          F + 2, Z                            " CONSTANT?
```

```
1632      N,  JUMP(6)
1633          S = MC[ - 1], P
1634      N,  JUMP( - 6)
1635          S = MT[13]                          " S = 1, P
1636          HGEN
1637          HCONCOR[HA5] = B
1638          JUMP( - 12)
1639          S = HCONCOR[HA5], P
1640      Y,  S = MT[6]                           " N,    S = M[B - 1], P

1641                                                                        " 17.10
1642                                                                        " HEOR - 1
1643      N,  S = MT[6]                           " Y,    S = - M[B - 1], P
1644          E = - 1
1645          HANOGEN
1646          S = MT[0]                           " B - 1
1647          B - 1
1648          JUMP(- 21)
1649      N,  S = M[B - 1], P
1650      Y,  S = - M[B - 1], P
1651          S = 1, P

1652                                                                        " 17.11
1653                                                                        " HEIMP - 0
1654 HEIMP(69)
1655          E = 2
1656          G - M[B - 1]
1657          S = :HREVPOL, Z
1658          SUBC(MS)
1659          SE39
1660          MC = G
1661          G = - M[B - 2]
1662          S = :HREVPOL, Z
1663          SUBC(MS)
1664          SE39
1665          MC = G
1666          E = 1
1667          G - M[B - 4]
1668          S = :HREVPOL, Z
1669          SUBC(MS)
1670          SE39
1671          E = E, P
1672          S = MC[ - 1]
1673      N,  JUMP(28)
1674      U,  S - '104', Z                        " IDENTNE?
1675      N,  JUMP(11)
1676          S = HCONCOR[HA5], P
1677          HCONCOR[HA5] = - S
1678      Y,  S = '1366'                          " Y,    S = - DYN, P
1679      N,  S = '1267'                          " N,    S = DYN, P
1680          LUS(15)
1681          S + MC[ - 1]
1682          HGEN
1683          S = 3
1684          HGASMETER + S
1685          SE33
1686          HACREATEOB[78]                      " HCYCLE3

1687                                                                        " 17.11
1688                                                                        " HEIMP - 1
```

```
1689          $ = '102', Z                        " CONSTANT?
1690      N,  JUMP(6)
1691          $ = MC[ - 1], P
1692      N,  $ = - HCONCOR[HA5]
1693      Y,  $ = MT[7]                           " $ = 1, P       (IS POS)
1694          HCONCOR[HA5] = $
1695      Y,  SUBC(:HGENERATE)
1696          JUMP( - 12)
1697          $ = HCONCOR[HA5], P
1698      Y,  $ = MT[3]                           " N,     $ = - M[B - 1], P
1699      N,  $ = MT[3]                           " Y,     $ = M[B - 1], P
1700          JUMP(18)
1701          $ = 1, P
1702      N,  $ = - M[B - 1], P
1703      Y,  $ = M[B - 1], P
1704      U,  $ = '104', Z                        " IDENTNF?
1705      N,  JUMP(4)
1706          $ = HCONCOR[HA5], P
1707      Y,  $ = '1367'                          " N,     $ = - DYN, P
1708      N,  $ = '1266'                          " Y,     $ = DYN, P
1709          JUMP( - 28)
1710          $ = '102', Z                        " CONSTANT?
1711      N,  JUMP(3)
1712          $ = - M[B- 1], P
1713      Y,  JUMP( - 21)
1714          JUMP( - 28)
1715          $ = HCONCOR[HA5], P
1716          HCONCOR[HA5] = - $
1717      Y,  $ = MT[6]                           " Y,     $ = - M[B - 1], P
1718      N,  $ = MT[6]                           " Y,     $ = M[B - 1], P
1719          F = - 1
1720          HANOGEN
1721          $ = MT[0]
1722          B - 1
1723          JUMP( - 40)
1724      Y,  $ = - M[B - 1], P
1725      N,  $ = M[B - 1], P

1726                                                                  " 17.12
1727                                                                  " HEEQUIV - 0
1728 HEEQUIV(37)
1729          F = 2
1730          G - M[B - 1]
1731          $ = :HREVPOL, Z
1732          SUBC(MS)
1733          SE39
1734          MC = G
1735          G = - M[B - 2]
1736          $ = :HREVPOL, Z
1737          SUBC(MS)
1738          SE39
1739          F - '102', Z                        " CONSTANT?
1740      N,  JUMP(5)
1741          $ = - MC[ - 1], P
1742      Y,  $ = HCONCOR[HA5]
1743      Y,  HCONCOR[HA5] = - $
1744          SE33
1745          HACREATEOB[78]                      " HCYCLE3
1746          MC = G
1747          $ = MT[16]                          " S = T, P
```

```
1748          HGEN
1749          G = MC[ - 1]
1750          F - 2, Z                          " IDENTNE?
1751      N,  JUMP(5)
1752          S = '1274'                        " S = DYN, E
1753          LUS(15)
1754          S + M[B - 1]
1755          HGEN
1756          JUMP(3)
1757          S = MT[7]                         " S = MC[ - 1], E
1758          F = - 1
1759          HANOGEN
1760          B - 1
1761          S = 4
1762          HGASMETER + S
1763          JUMP( - 20)
1764          S = T, R
1765          S = MC[ - 1], E
```

```
 0                                                                          " 17.13
 1                                                                          " HEEUDES - 0
 2 HEEUDES(489)      function designator
 3          F = 2
 4          G - M[B- 1]
 5          SUBC(:MT[241])                  " S := G := REVPOL[- G]
 6          F + 3
 7          G - M[B - 1], Z                 " GEEN PARAMETERS?
 8      Y,  JUMP(193)                       " GOTO RESERVE SPACE FOR RESULT
 9          S = HRESP
10          S - 4, P
11      N,  S = 2
12      N,  HRESP = S
13          S = MT[84]                      " JUMP(1)
14      N,  S + 507
15      Y,  S + HRESP
16      Y,  S - 4
17          HGEN
18          S = HGASMETER
19          MC = S
20          S = HSPAN
21          MC = S
22          S = HMAXSPAN
23          MC = S
24          G = - HOBTOP
25          F + 1
26          S = - G
27          G - HRESP
28          MC = - G
29          HOBT
30          F = 1
31          G - M[B - 1]
32          S = MT[55]                      " SE33
33          HOBT
34          S = 2
35                                                                          " 17.13
36                                                                          " HEEUDES - 1
37          HRESP - S
38          G = M[B - 5]
39          MC = G                          " STACK(FUDES)
40          S = M[B - 1]
41          S - 3
42          MC = S
43          SUBC(:MT[204])                  " S := G := REVPOL[TOP]; BB:
44          F - '36010', Z                  " PARAMETERCOMMA
45      N,  JUMP(5)
46          F = 2
47          G - M[B - 1]
48          SUBC(:MT[200])                  " S := G := REVPOL[- G]
49          MC = G
50          SUBC(:MT[197])                  " S := G := REVPOL[TOP]
51      U,  S '*' 6, Z                      " ¬ (IDENT, OR CONSTANT)
52      N,  JUMP(104)
53          S - '32010', Z                  " FUDES?
54          F = 2
55          G - M[B - 1]
56      Y,  SUBC(:MT[192])                  " S := G := REVPOL[- G]
57      Y,  S + 3
```

```
58      Y,  $ - M[B - 1], Z                     " PARAMETERLOOS?
59      Y,  JUMP(97)
60          $ = HRESP
61          $ - 3, R
62      N,  $ = 2
63      N,  HRESP = $
64          HGEN                                " EMPTY
65          $ = 0
66          HGASMETER = $
67          HSPAN = $
68          HMAXSPAN = $
69                                                                  " 17.13
70                                                                  " HEEUDES - 2
71          $ = - 2
72          MC = $                              " STACK(|$)
73          $ = M[B - 2]
74          MC = $                              " STACK(INDEXPARAMETER)
75          F = 1
76          G - M[B - 4]                        " INDEX TYPE VAN PARCOMMA OF FUDES
77          $ = :HREVPOL, Z
78          SUBC(M$)
79          SE38
80          F = - 1
81          G + HOBTOP
82          M[B - 5] = G                        " ADRES VAN $ = HMAXSPAN
83          DO(MC[- 1])                         " RED INDEX BEGIN VAN |$
84          $ = MT[9]                           " SE1
85          HGEN
86          $ = 1
87          PLUS$(HCBH)
88      U,  $ - HMAXITH, R
89      Y,  HMAXITH = $
90          HBOV1
91          HBOV2
92          SE33                                " GEBRUIKT OP 29
93          HACREATEOB[37]                      " NEXT
94          SE1                                 " GEBRUIKT OP 77
95          MC = F                              " GEBRUIKT OP 108, 211, 219
96          F = MC[- 4]                         " GEBRUIKT OP 112
97          '010 000 000'                       " GEBRUIKT OP 109, 113, 128
98          MA[- 9] = F                         " GEBRUIKT OP 117
99          MA[- 5] = F                         " GEBRUIKT OP 116
100         F = MC                              " GEBRUIKT OP 119
101         G = T                               " GEBRUIKT OP 127
102         JUMP(1)                             " GEBRUIKT OP 10, 139, 175, 303, 312
103                                                                 " 17.13
104                                                                 " HEEUDES - 3
105         F = 1                               " END OF |$
106         G - M[B - 1]
107         SUBC(:MT[145])                      " $ := G := REVPOL[- G]
108         $ = $, R
109     Y,  $ = - $
110         $ '*' '204', Z                      " COMPLEX EXPRESSION?
111     N,  JUMP(21)
112         $ = HRESP
113         $ - 6, R
114     N,  $ = 2
115     N,  HRESP = $
```

```
116          $ = HSIGCOR[HA5], R
117          $ = MT[- 21]                    " MC = F
118      N,  $ + MT[- 20]                    " MC = - F
119          F = 2
120          HANOGEN
121          $ = MT[- 24]                    " F = MC[- 4]
122      N,  $ + MT[- 24]                    " F = - MC[- 4]
123          HGEN
124          SUBC(:MT[133])                  " SIS?
125      Y,  $ = MT[- 25]                    " MA[- 5] = F
126      N,  $ = MT[- 27]                    " MA[- 9] = F
127          HGEN
128          $ = MT[- 27]                    " F = MC
129          F = - 4
130          HANOGEN
131          $ = 131                         " KOSTEN SJOUWEN MET COMPLEX
132          JUMP(11)
133          $ = HCBEZET[HA5], R
134      N,  JUMP(5)
135          $ = HCONCOR[HA5], R
136          $ = MT[- 34]                    " G = T

137                                                                  " 17.13
138                                                                  " HEEUDES - 4
139      N,  $ + MT[- 39]                    " G = - T
140          HGEN
141          JUMP(3)
142          $ = - HSIGCOR[HA5], R
143      Y,  $ = MT[39]                      " F = - F
144      Y,  SUBC(:HGENERATE)
145          $ = 119                         " KOSTEN
146          HKOST
147          $ = 1
148          HCBH - $
149          SUBC(:MT[112])                  " SIS?
150      Y,  $ = MT[- 45]                    " JUMP(1)
151      N,  $ = MT[6]                       " S = 0
152      N,  $ + HMAXSPAN
153          G = - M[B - 3]
154          HOBT
155          $ = MT[119]                     " SUBCD(:RSE72)
156          HGEN
157          B - 2
158          $ = 0                           " GEBRUIKT OP 140
159          HFBEZET[HA5] = $
160          HCBEZET[HA5] = - B
161          HCONCOP[HA5] = B
162          HSIGCOR[HA5] = B                " IMPLICIATE SUBROUTINE KLAAR
163          B - 1
164          HOND1
165          HOND2
166          SUBC(:MT[87])                   " S := G := REVPOL[TOP]
167      U,  $ - '36010', Z                  " PARAMETERCOMMA
168      Y,  $ = 3
169      Y,  M[B - 1] - S
170      Y,  JUMP(- 122)

171                                                                  " 17,13
172                                                                  " HEEUDES - 5
173          $ - '46010', Z                  " SUBSCRIPTION?
```

```
174     N,  JUMP(3)
175         B - 1
176         HOND1
177         HOND2
178         S = M[B - 2]
179         SUBC(:MT[91])                   " SAME PAGE (OBTOP, S)?
180     N,  JUMP(11)
181         G = - M[B - 2]
182         S = :HOBTEXT, Z
183         SUBC(MS)
184         SE39
185         F = - F                         " GEBRUIKT OP 132
186         S = - 2
187         HRESP - S
188         S + MT[- 81]                    " JUMP(1)
189         S + HOBTOP
190         S + G
191         JUMP(6)
192         G = - HOBTOP
193         S = :HOBTEXT, Z
194         SUBC(MS)
195         S = A
196         DO(MD[- 1])
197         G = - M[B - 2]
198         HOBT
199         S = MC[- 1]
200         S + '1220', Z                   " - FOR?
201     N,  JUMP(2)
202         SE33
203         HACREATEOB[370]
204         F = MC[- 5]                     " LAAG B AF MET 2; G := GEREDDE GASMETER

205                                                                 " 17.13
206                                                                 " HEFUDES - 6
207         HGASMETER = G
208         S = MC[0]
209         HMAXSPAN = S
210         S = MC[0]
211         HSPAN = S
212         HOND1
213         HOND2
214         F = 2                           " RESERVE SPACE FOR RESULT:
215         G - M[B - 1]
216         SUBC(:MT[42])                   " S := G := REVPOL[- G]
217         F = - F
218         F + 1
219         SUBC(:MT[39])                   " S := G := REVPOL[- G]
220         MC = S
221         S = - S
222         S '*' '10004', Z                " FORMAL COMPLEX?
223     Y,  S = MT[13]                      " F = 0
224     N,  S = MT[55]                      " F = UCLEAR
225         HGEN
226         S = MT[- 124]                   " MC = F
227         F = 2
228         HANOGEN
229     Y,  S = MT[50]                      " F = UCLEAR
230     Y,  SUBC(:HGENERATE)
231         S = - MC[- 1]
232     U,  S '*' 4, Z                      " COMPLEX?
```

```
233     N,  S '*' '10040', Z                    " FORMAL NON - TYPE?
234     Y,  S = MT[- 132]
235     Y,  F = 2
236     Y,  SUBC(:MGENERATE[44])
237         F = 0                               " GEBRUIKT OP 208
238         HNOA = G

239                                                                   " 17.13
240                                                                   " MEEVDES - 7
241         F = 2
242         G - M[B - 1]
243         SUBC(:MT[17])                       " S := G := REVPOL[- G]
244         F + 3
245         G - M[B - 1], Z                     " PARAMETERLOZE PROCEDURE?
246     Y,  JUMP(257)
247         S = M[B - 1]
248         S - 3
249         MC = S
250         SUBC(:MT[9])                        " S := G := REVPOL[TOP]
251         F - '36010', Z                      " PARAMETERCOMMA?
252     N,  JUMP(4)
253         F = 2
254         G - M[B - 1]
255         SUBC(:MT[5])                        " S := G := REVPOL[- G]
256         MC = G
257         MBOV1
258         MBOV2
259         JUMP(23)                            " OVER SUBROUTINES HEEN
260         G = - M[B - 2]                      " S := G := REVPOL[TOP]
261         S = :MREVPOL, Z                     " S := G := REVPOL[- G]
262         SUBC(MS)
263         SE39
264         S = G
265         GOTOR(MC[- 1])
266         S = - 7                             " S!S?
267         JUMP(1)                             " GEBRUIKT OP 449
268         S = - 5
269         S + MRESP, R
270     N,  GOTO(MC[- 1])
271         S = MASIS[- 2]
272         S - MMAXSPAN, R

273                                                                   " 17.13
274                                                                   " MEEVDES - 8
275     N,  GOTO(MC[- 1])
276         S = M[B - 4]
277         S '*' - 511                         " SUBROUTINE SAMEPAGE(OBTOP, S)
278         G = S
279         S = MOBTOP
280         S '*' - 511
281         S - G, Z
282         GOTO(MC[- 1])
283         SUBCD(:RSE72)                       " GEBRUIKT OP 144
284         F = UCLEAR                          " GEBRUIKT OP 209, 214
285         S = 4
286         MNOA + S
287         S = MRESP
288         S - 4, R
289     N,  S = 2
290     N,  MRESP = S
```

```
291          F = 2
292          G - M[B - 1]
293          SUBC(:MT[- 31])                  " S := G := REVPOL[- G]
294          MC = G
295          F = 1
296          G - M[B - 2]
297          SUBC(:MT[- 35])                  " S := G := REVPOL[- G]
298          MC = G
299          G = - M[B - 3]
300          SUBC(:MT[- 38])                  " S := G := REVPOL[- G]
301     U,   S '*' 6, Z                       " ¬ (IDENTIFIER OR CONSTANT)
302     N,   JUMP(87)
303          S - '32010', Z                   " FUDES?
304     Y,   S = M[B - 2]
305     Y,   S + 3
306     Y,   S - M[B - 3], Z                  " PARAMETERLOZE PROCEDURES

307                                                                          " 17.13
308                                                                          " WEEUDES - 9
309     Y,   JUMP(46)
310          MC = G
311          F = 1
312          G - M[B - 5]
313          SUBC(:MT[- 49])                  " S := G := REVPOL[- G]
314          F = - F
315          S = :HOBTEXT, Z
316          SUBC(MS)
317          SE39
318          S = MC[- 1]
319          S - '46010', Z                   " SUBSCRIPTION?
320     Y,   S = M[B - 1]                     " DAN IS TYPE POSITIEF
321     Y,   S '*' '30000'
322     Y,   S - '10000', Z                   " FORMAL NOT BY VALUE
323     N,   JUMP(9)
324          G - MT[- 209], Z                 " JUMP(1)? DAN SIS
325          F = 2
326          G - M[B - 2]
327          SUBC(:MT[- 63])                  " S := G := REVPOL[- G]
328     Y,   S + MT[17]                       " S = MO[- 255], P
329     N,   S + MT[17]                       " S = MO[- 255], Z
330          WGEN
331          S = MT[16]                       " SUBC(:PSE86)
332          JUMP(7)
333          G - MT[- 218], Z                 " JUMP(1)? DAN SIS
334     Y,   S = MT[14]                       " DOS(P82E3)
335     N,   S = MT[14]                       " DOS(P82E2)
336          WGEN
337          S = M[B - 1], P
338     N,   S = - S
339          S '*' '677'
340          WGEN

341                                                                          " 17.13
342                                                                          " WEEUDES - 10
343          F = 1
344          G - M[B - 4]
345          SUBC(:MT[- 79])                  " S := G := REVPOL[- G]
346          F = - F
347          JUMP(94)
348          S = MO[- 255], P                 " GEBRUIKT OP 307
```

```
349          S = M0[- 255], Z                    " GEBRUIKT OP 308
350          SUBC(:RSE86)                        " GEBRUIKT OP 310
351          DOS(R82E3)                          " GEBRUIKT OP 313
352          DOS(R82E2)                          " GEBRUIKT OP 314
353          DOS(R82E1)                          " GEBRUIKT OP 343
354          SE75                                " GEBRUIKT OP 375
355          SE76                                " GEBRUIKT OP 379
356          DOS(RSE89)                          " GEBRUIKT OP 378
357          SUBC(:RSE85)                        " GEBRUIKT OP 395
358          F = 2
359          G = M[B - 2]
360          SUBC(:MT[- 94])                     " S := G := REVPOL[- G]
361          S = M[B - 1]
362          S '*' '10000', Z                    " NON FORMAL?
363     Y,   F + F
364          M[B - 2] = G
365     N,   JUMP(48)
366          S = MT[- 14]                        " DOS(R82E1)
367          MGEN
368          S = M[B - 1]
369          S '*' '2077'
370          MGEN
371          G = - M[B - 2]
372          SUBC(:MT[7])                        " S := G := DL[- G + 1]
373          MC = S
374          G = - M[B - 3]

375                                              " 17.13
376                                              " MERUDES - 11
377          SUBC(:MT[5])                        " S := G := DL[- G]
378          S '*' '100', Z                      " DEST. DEFINED
379     N,   SUBC(:MT[8])                        " DL[M[B - 3] + 1] := OBTOP
380          S = MC[- 1]
381          JUMP(120)
382          F - 1                               " S := G := DL[ - G + 1]
383          S = :MDL, Z
384          SUBC(MS)
385          SE39
386          S = G
387          GOTOR(MC[- 1])
388          F = - 1                             " DL[M[B - 2] + 1] := OBTOP
389          G - M[B - 4]
390          S = :MDL, Z
391          SUBC(MS)
392          SE38
393          G = MOBTOP
394          DO(MC[- 1])
395          GOTOR(MC[- 1])
396     U,   S '*' 2, Z                          " ¬ CONSTANT, DAN IDENTIFIER
397     Y,   JUMP(16)
398          S = - M[B - 1]
399     U,   S '*' 2, Z                          " REAL?
400     Y,   S = MT[- 45]                        " SE75
401     Y,   JUMP(3)
402          S '*' 1, Z                          " INTEGER?
403     N,   S = MT[- 46]                        " DOS(RSE89)
404     Y,   S = MT[- 48], Z                     " SE76 EN ZET CONDITIE NO
405          MGEN
406          F = 3
407          G = M[B - 3]
```

```
408     Y,  SUBC(:MT[- 140])                " S := G := REVPOL[- G]

409                                                                     " 17.13
410                                                                     " WEEVDES - 12
411         G = M[B - 2]
412     N,  S = M[57]                       " SIGNCONSISTENT ZERO
413         WGEN
414         S = M[B - 2]
415         JUMP(88)
416         S - '204', Z                    " IDENT E?
417     N,  JUMP(6)
418         S = '1620'                      " S= :DYN
419         LUS(15)
420         S + M[B - 2]
421         WGEN
422         S = MT[- 62]                    " SUBC(:PSE85)
423         JUMP(80)
424         S = - M[B - 1]
425     U,  S '*' 16, Z                     " LABEL?
426     N,  JUMP(24)
427         S '*' '2000', Z                 " PROCEDURE? (SWITCH)
428         G = - M[B - 2]
429         E + E
430         M[B - 2] = - G
431     Y,  JUMP(- 62)
432         SUBC(:MT[- 48])                 " S := G := DL[- G]
433         RUS(15)
434         S + MT[33]                      " S = MD[0]
435         WGEN
436         S = MT[32]                      " SUBC(:PSE83)
437         WGEN
438         G = - M[B - 2]
439         SUBC(:MT[- 56])                 " S := G := DL[- G + 1]
440         MC = S
441         G = - M[B - 3]
442         SUBC(:MT[- 58])                 " S := G := DL[- G + 1]

443                                                                     " 17.13
444                                                                     " WEEVDES - 13
445         S '*' '100', Z                  " DESTINATION DEFINED?
446     N,  JUMP(- 64)
447         G = - MC[- 1]
448         S = :WOBTEXT, Z
449         SUBC(MS)
450         S = A
451         DO(MD[- 1])
452         JUMP(53)
453     U,  S '*' '1000', Z                 " ARRAY?
454     N,  JUMP(21)
455         S = '620'                       " A = :DYN
456         LUS(15)
457         S + M[B - 2]
458         WGEN
459         S = - M[B - 1]
460     U,  S '*' 1, Z                      " INTEGER?
461     Y,  S = MT[10]                      " DOS(PSE79)
462     Y,  JUMP(43)
463     U,  S '*' 2, Z                      " REAL?
464     Y,  S = MT[8]                       " DOS(PSE80)
465     Y,  JUMP(40)
```

```
466         $ '*' 4, Z                          " COMPLEX?
467     Y,  $ = MT[6]                           " DO$(PSE81)
468     N,  $ = MT[6]                           " DO$(PSE95), BOOLEAN
469         JUMP(36)
470         $ = MD[0]                           " GEBRUIKT OP 407
471         SUBC(:PSE83)                        " GEBRUIKT OP 409
472         DO$(PSE79)                          " GEBRUIKT OP 432
473         DO$(PSE80)                          " GEBRUIKT OP 435
474         DO$(PSE81)                          " GEBRUIKT OP 438
475         DO$(PSE95)                          " GEBRUIKT OP 439
476         $ '*' '4000', Z                     " STRING?

477                                                                  " 17.13
478                                                                  " MEEUDE$ - 14
479     N,  JUMP(14)
480         $ = MT[- 200]                       " JUMP(1)
481         MGEN
482         $ = M[B - 2]                        " INV, STARTINGADRES STRING
483         MGEN
484         $ = MT[3]                           " G = MT[- 2]
485         MGEN
486         $ = MT[2]                           " SUBC(:PSE112)
487         JUMP(20)
488         G = MT[- 2]                         " GEBRUIKT OP 453
489         SUBC(:PSE112)                       " GEBRUIKT OP 455
490         SUBC(:PSE78)                        " GEBRUIKT OP 469
491         SUBC(:PSE77)                        " GEBRUIKT OP 472
492         SUBC(:PSE84)                        " GEBRUIKT OP 475
493         SUBC(:PSE94)                        " GEBRUIKT OP 476
494         $ = '1620'                          " S = :DYN
495         LUS(15)
496         $ + M[B - 2]
497         MGEN
498         $ = - M[B - 1]
499     U,  $ '*' 1, Z                          " INTEGER?
500     Y,  $ = MT[- 11]                        " SUBC(:PSE78)
501     Y,  JUMP(6)
502     U,  $ '*' 2, Z                          " REAL?
503     Y,  $ = MT[- 13]                        " SUBC(:PSE77)
504     Y,  JUMP(3)
505         $ '*' 4, Z                          " COMPLEX?
506     Y,  $ = MT[- 15]                        " SUBC(:PSE84)
507     N,  $ = MT[- 15]                        " SUBC(:PSE94), BOOLEAN
508         F = 4
509         MANOGEN
510         B - 3

511                                                                  " 17.13
512                                                                  " MEEUDES - 15
513         MOND1
514         MOND2
515         G = - M[B - 1]
516         SUBC(:MT[- 240])                    " S := G := REVPOL[- G]
517         F - '36010', Z                      " PARAMETERCOMMA
518     Y,  $ = MC[- 1]
519     Y,  JUMP(- 256)
520         SE33
521         MEDESEU

522                                                                  " 17.14
```

```
                                                                        " HEDESEU - 0
HEDESEU(118)
          F = 5                          " (KOSTEN VAN EEN PARAMETER)/4
          G = HNOA
          S = G, P                       " GEBRUIKT OP 107
          S + 76                         " PRIJS SE73 (SE74)
          HKOST
          S = 15
          PLUSS(HSPAN)
     U,   S - HMAXSPAN, P
     Y,   HMAXSPAN = S
          S = HNOA
          S + 17
          HSPAN - S
          S - 8
          S + MT[61]                     " S = 0
          HGEN
          F = 2
          SUBC(:MT[96])
          MC = G
          F = 1
          SUBC(:MT[93])
          MC = G
          F = 1
          G - M[B - 3]
          S = :HREVPOL, Z
          SUBC(MS)
          SE38
          G = M[B - 3]
          F - '1600'                     " MAAK EXPRESSION VAN PROCEDURE
          DO(MC[- 1])                    " HERSTEL TYPE VAN FUNCTIONDESIGNATOR
          F = 2
          G - M[B - 2]
          SUBC(:MT[82])

                                                                        " 17.14
                                                                        " HEDESEU - 1
          S = M[B - 1]
          S '*' '10000', Z               " NON FORMAL?
     Y,   F + F
          M[B - 2] = G
     N,   JUMP(31)
          S = HRESP
          S - 3, P
     N,   S = 2
     N,   HRESP = S
          S = MT[24]                     " SE73
          HGEN
          F = - 1
          G - M[B - 2]
          S = :HDL, Z
          SUBC(MS)
          SE39
          S = G
          HGEN
          G = - M[B - 2]
          S = :HDL, Z
          SUBC(MS)
          SE39
          S = - G
```

```
582          S '*' '100', Z                    " DEST UNDEF
583      N,  JUMP(18)
584          F = - 1
585          G - M[B - 2]
586          S = :HDL, Z
587          SUBC(MS)
588          SE38
589          F = - 1
590          G + HOBTOP

591                                                                  " 17.14
592                                                                  " HEDESEU - 2
593          DO(MC[- 1])
594          JUMP(9)
595          SE73
596          SUBCD(:RSE74)
597          S = '313'                         " F = DYN
598          RCS(8)
599          S + M[B - 2]
600          S + 2
601          HGEN
602          S = MT[- 7]                       " SUBCD(:RSE74)
603          HGEN
604          S = 0                             " WORDT GEBRUIKT OP 13
605          HGASMETER = S
606          S = M[B - 4]
607          S + 1, Z                          " STOP?
608      Y,  S = - M[B - 5]
609      Y,  S '*' 1, Z                        " STAT START ADRES?
610          S = - M[B - 1]
611      N,  JUMP(5)
612      U,  S '*' 4, Z                        " COMPLEX?
613      N,  S '*' '10040', Z                  " NON TYPE FORMAL?
614      Y,  S = MT[24]                        " B - 2
615      Y,  SUBC(:HGENERATE)
616          JUMP(22)
617      U,  S '*' 1, Z                        " INTEGER?
618      Y,  S = 1
619      Y,  JUMP(5)
620      U,  S '*' 2, Z                        " REAL?
621      Y,  S = 2
622      Y,  JUMP(2)
623          S '*' 4, Z                        " COMPLEX
624      Y,  S = 3

625                                                                  " 17.14
626                                                                  " HEDESEU - 3
627      Y,  HFBEZET[HA5] = S
628      Y,  JUMP(12)
629          G = - M[B - 4], R
630      N,  S = :HREVPOL, Z
631      N,  SUBC(MS)
632      N,  SUBCD(:RSE39)
633          F - '22010', Z                    " BECOMES?
634      N,  S = M[B - 4]
635      N,  S + 2, Z                          " IS
636      N,  S = M[B - 1]
637      N,  S '*' 8, Z                        " - BOOLEAN
638      N,  S = MT[- 106]                     " S = G, R
639      N,  SUBC(:HGENERATE)
```

```
640      N,  HCBEZET[HA5] = B
641          B - 2                          " GEBRUIKT OP 85
642          SE33
643          HACREATEOB[79]                 " IETS VERDER DAN HCYCLE3
644          G - M[B - 2]
645          $ = :HREVPOL, Z
646          SUBC(MS)
647          SE39
648          GOTOR(MC[- 1])

649                                                          " 17.15
650                                                          " HESWITCH - 0
651 HESWITCH(19)
652          $ = HSIGCOR[HA5], F
653      Y,  $ = MT[14]                     " GL0 = F
654      N,  $ = MT[14]                     " GL0 = - F
655          HGEN
656      N,  HSIGCOR[HA5] = B
657          $ = 0
658          HFBEZET[HA5] = $
659          HNOA = $
660          B - 1
661          HOND1
662          HOND2
663          $ = MT[6]                      " B + 2
664          F = 2
665          HANOGEN
666          SE33
667          HEDESEU
668          GL0 = F
669          GL0 = - F
670          B + 2

671                                                          " 17.16
672                                                          " HEKWAD - 0
673 HEKWAD(10)   to the power 2 is given a ~~special~~ optimized code
674          $ = MT[8]
675          HGEN
676          HSIGCOR[HA5] = B
677          $ = 2
678          HFBEZET[HA5] = $
679          $ = 16
680          HGASMETER + $
681          SE33
682          HACREATEOB[78]                 " HCYCLE3
683          F * M[57]   → this is the instruction  F * F

684                                                          " 17.17
685                                                          " HEINTDIV - 0
686 HEINTDIV(26)
687          F = 2
688          G - M[B - 2]
689          $ = :HREVPOL, Z
690          SUBC(MS)
691          SE39
692          F = - F
693          F + 1
694          $ = :HREVPOL, Z
695          SUBC(MS)
696          SE39
```

```
697          $ = G, R
698      Y,  $ = - $
699          $ '*' 1, Z                          " INTEGER?
700      Y,  $ = MT[10]
701      N,  $ = MT[10]
702      Y,  F = - 1
703      N,  F = - 2
704          HANOGEN
705          $ = 49
706          HGASMETER + $
707          $ = 2
708          HFBEZET[HA5] = $
709          SE33
710          HACREATEOB[78]                     " HCYCLE3
711          SEINTEGERDIVISION
712          SEREALINTEGERDIV

713                                                                  " 17.18
714                                                                  " HEREL - 0
715 HEREL(131)        relation
716          F = 1
717          G - M[B - 2]
718          SUBC(:MT[70])                      " G := REVPOL[ - G]
719          $ = G, R
720          G = M[B - 2]
721      Y,  F - 2
722      N,  F - 3
723      Y,  F = - F
724      Y,  SUBC(:MT[64])                      " G := REVPOL[ - G]
725          MC = G
726          G = - M[B - 2]
727          SUBC(:MT[61])                      " G := REVPOL[ - G]
728          F - '202', Z                       " NULL?
729      N,  JUMP(66)
730          SUBC(:MT[57])                      " G := REVPOL[TOP]
731          F - '60310', Z                     " NEG?
732      Y,  $ = 3
733      Y,  M[B - 1] - $
734      Y,  JUMP( - 5)
735          F + '60204', Z                     " IDENTIFIER NR?
736      N,  F - '4204', Z                      " PLUS?
737      N,  F - '10000', Z                     " MINUS?
738      N,  F - '10000', Z                     " TIMES?
739      Y,  JUMP(8)
740          F - '10000', Z                     " DIVISION?
741          F = 1
742          G - M[B - 2]
743      Y,  SUBC(:MT[45])                      " G := REVPOL[ - G]
744      Y,  F = - F, R
745      N,  $ = MT[23]                         " F = F, Z
746      N,  SUBC(:HGENERATE)
747      N,  JUMP(10)

748                                                                  " 17.18
749                                                                  " HEREL - 1
750          F = 1
751          G - HOBTOP
752          $ = :HOBTEXT, Z
753          SUBC(MS)
754          SE39
```

```
755          S = G
756          S + MT[38]                          " '1000000'      (Z - VARIANT)
757          E = 1
758          G - HOBTOP
759          HOBT
760          E = 1
761          G - M[B - 3]
762          SUBC(:MT[28])                       " G := REVPOL[ - G]
763          S = HOP[HA5]
764      U,  S - '34510', Z                      " >?
765      N,  S - '30510', Z                      " ≤?
766      Y,  JUMP(4)
767      U,  S - '10000', Z                      " ≥?
768      N,  S + '4000', Z                       " <?
769      N,  JUMP(6)
770          E = - E
771          E = E, Z                            " ZET LAATSTE TEKEN      (WORDT OOK GEBRUIKT OP 29)
772          S = HSIGCOR[HA5], E
773      Y,  S = MT[22]                          " N,     S = - 1, E
774      N,  S = MT[22]                          " N,     S = 1, E
775          HGEN
776          S = HOP
777      U,  S - '10510', Z                      " ≠?
778      N,  S - '24510', Z                      " <?
779      N,  S - '10000', Z                      " >?
780      Y,  HCONCOR[HA5] = - B
781          B - 1

782                                                                  " 17.18
783                                                                  " HEREL - 2
784          HCBEZET[HA5] = B
785          HSIGCOR[HA5] = B
786          S = 0
787          HFBEZET[HA5] = S
788          S = 6
789          HGASMETER + S
790          SE33
791          HACREATEOB[78]                      " HCYCLE3
792          G = - M[B - 2]                      " SUBROUTINE G := REVPOL[TOP]
793          S = :HREVPOL, Z                     " SUBROUTINE G := REVPOL[ - G]
794          SUBC(MS)
795          SE39
796          GOTOR(MC[ - 1])                     " EINDE SUBR.
797          '1000000'                           " Z - VARIANT
798      N,  S = - 1, E
799      N,  S = 1, E
800          E + '100', Z                        " CONSTANT?
801      N,  JUMP(11)
802          S = M[B - 2]
803          MC = S
804          S = HSIGCOR[HA5], E
805      Y,  S = 18                              " - , Z
806      N,  S = 2                               " + , Z
807          MC = S
808          S = MT[3]
809          GL0 = S
810          SE33
811          METRCON
812          HEREL[42]
813          E - 2, Z                            " IDENTIFIER NE?
```

```
814     N,  JUMP(17)
815         F = 2

816                                                                  " 17.18
817                                                                  " HEREL - 3
818         G - M[B - 2]
819         SUBC(:MT[ - 25])                  " G := REVPOL[ - G]
820         MC = G
821         F = 1
822         G - M[B - 3]
823         SUBC(:MT[ - 29])                  " G := REVPOL[ - G]
824         $ = - G
825         $ '*' 2, Z                        " REAL?
826     Y,  $ = '6170'                        " F - DYN, Z
827     N,  $ = '6171'                        " G - DYN, Z
828     U,  $ = HSIGCOR[HA5], R
829     N,  $ - '100'                         " F/G + DYN, Z
830         RCS(12)
831         $ + MC[ - 1]
832         HGEN
833         JUMP(- 70)
834         F = 1
835         G - M[B - 1]
836         SUBC(:MT[ - 42])                  " G := REVPOL[ - G]
837         $ = - G, R
838     Y,  $ = - $
839         $ '*' 2, Z                        " REAL?
840     N,  $ = '6171'                        " G - DYN, Z
841     Y,  $ = '6170'                        " F - DYN, Z
842     N,  F = - 1
843     Y,  F = - 2
844     U,  $ = HSIGCOR[HA5], R
845     N,  $ - '100                          " F/G + DYN, Z
846         RCS(12)
847         $ + '75400'                       " MC[0]
848         $ + G
849         HANOGEN
850         $ = HSIGCOR[HA5]
851         HSIGCOR[HA5] = - $
852         JUMP(- 89)

853                                                                  " 17.19
854                                                                  " HECOMREL - 0
855 HECOMREL(152)          complex relation
856         HCONCOR[HA5] = - B
857         F = 1
858         G - M[B - 1]
859         SUBC(:MT[57])
860         $ = G, R
861     N,  $ = - $
862     U,  $ '*' 4, Z                        " - COMPLEX
863         G = - M[B - 1]
864     Y,  MC = $
865         SUBC(:MT[51])
866     N,  JUMP(54)
867         F - '202', Z                      " NULL?
868     Y,  $ = MT[43]                        " F = F, Z
869     Y,  SUBC(:HGENERATE)
870     Y,  JUMP(34)
871         F + '100', Z                      " CONSTANT
```

```
872     N,  JUMP(11)
873         $ = M[B - 2]
874         MC = $
875         $ = HSIGCOR[HA5], R
876     Y,  $ = 18                          " -, Z
877     N,  $ = 2                           " +, Z
878         MC = $
879         $ = MT[3]
880         GLO = $
881         $E33
882         HETRCON
883         HECOMREL[49]
884         $ = HFBEZET[HA5]
885         $ - 3, Z
886     N,  JUMP(13)
887         E = 2

888                                                                 " 17.19
889                                                                 " HECOMREL - 1
890         G - M[B - 2]
891         SUBC(:MT[27])
892         $ = - M[B - 1]
893         $ '*' 2, Z                      " REAL?
894     Y,  $ = '6170'                      " E - DYN, Z
895     N,  $ = '6171'                      " G - DYN, Z
896     U,  $ = HSIGCOR[HA5], R
897     N,  $ - '100'                       " E/G + DYN, Z
898         RCS(12)
899         $ + G
900         HGEN
901         JUMP(5)
902         $ = HSIGCOR[HA5], R
903     Y,  $ = MT[11]                      " E - MC[- 2], Z
904     N,  $ = MT[11]                      " E + MC[- 2], Z
905         E = - 2
906         HANOGEN
907         B - 1
908         $ = MT[8]                       " Y, E = M[B - 2], Z
909         HGEN
910         $ = MT[7]                       " B - 2
911         E = - 2
912         JUMP(85)
913         B - 3
914         E = E, Z
915         E - MC[- 2], Z
916         E + MC[- 2], Z
917     Y,  E = M[B - 2], Z
918         B - 2
919         $ = :HREVPOL, Z                 " SUBROUTINE G := REVPOL[- G]
920         SUBC(MS)
921         $E39

922                                                                 " 17.19
923                                                                 " HECOMREL - 2
924         GOTOR(MC[- 1])
925         E - '104', Z                    " IDENTIFIER NE
926     N,  JUMP(28)
927         E = 2
928         G - M[B - 1]
929         SUBC(:MT[- 9])
```

```
930          MC = G
931          $ = HSIGCOR[HA5], P
932      Y,  $ = '617'                          " E - DYN, Z
933      N,  $ = '607'                          " E + DYN, Z
934          RCS(9)
935          $ + M[B - 1]
936          $ + 2
937          HGEN
938          $ = HFBEZET[HA5]
939          $ - 3, Z
940      N,  $ = '6272'                         " Y, E = DYN, Z
941      N,  JUMP(8)
942          $ = MT[11]                         " Y, E = M[B - 2]
943          HGEN
944          $ = MT[- 25]                       " B - 2
945          E = - 2
946          HANOGEN
947          $ = HSIGCOR[HA5], P
948      Y,  $ = '6172'
949      N,  $ = '6072'
950          RCS(12)
951          $ + MC[- 1]
952          HGEN
953          JUMP(47)
954      Y,  E = M[B - 2)
955          E = 2

956                                                 " 17.19
957                                                 " HECOMREL - 3
958          G - M[B - 2]
959          SUBC(:MT[- 37])
960          E = - E
961          E + 1
962          SUBC(:MT[- 40])
963          $ = G, P
964      Y,  $ = - $
965      N,  $ '*' 1, Z                         " INTEGER?
966      N,  JUMP(11)
967          $ = HSIGCOR[HA5], P
968      Y,  $ = MT[7]                          " G - M[B - 3], Z
969      N,  $ = MT[7]                          " G + M[B - 3], Z
970          HGEN
971          $ = MT[- 51]                       " Y, E = M[B - 2],  Z
972          HGEN
973          $ = MT[- 57]                       " B - 3
974          E = - 3
975          JUMP(26)
976          G - M[B - 3], Z
977          G + M[B - 3], Z
978          MC = $
979          $ = HSIGCOR[HA5], P
980      Y,  $ = MT[14]                         " E - M[B - 4], Z
981      N,  $ = MT[14]                         " E + M[B - 4], Z
982          HGEN
983          $ = MC[- 1]
984          $ '*' 4, Z                         " COMPLEX?
985      N,  JUMP(12)
986          $ = HSIGCOR[HA5], P
987      Y,  $ = MT[- 32]                       " Y, E = M[B - 2]
988      N,  $ = MT[8]                          " Y, E = - M[B - 2]
```

```
          HGEN

                                                                   " 17.19
                                                                   " HECOMREL - 4
          S = MT[20]                " Y, F - M[B - 6], Z
          HGEN
          S = MT[19]                " B - 6
          F = - 6
          JUMP(7)
          F - M[B - 4], Z
          F + M[B - 4], Z
      Y,  F = - M[B - 2]
          S = MT[- 78]              " Y, F = M[B - 2], Z
          HGEN
          S = MT[12]                " B - 4
          F = - 4
          HANOGEN
          S = 14
          HGASMETER + S
          S = 0
          HFBEZET[HA5] = S
          HCBEZET[HA5] = B
          HSIGCOR[HA5] = B
          SE33
          HACREATEOB[78]            " HCYCLE3
      Y,  F - M[B - 6], Z
          B - 6
          B - 4

                                                                   " 17.20
                                                                   " HEPOWER - 0
  HEPOWER(38)
          S = HSIGCOR[HA5], P
      N,  S = MT[7]                 " F = - F
      N,  SUBC(:HGENERATE)
      N,  HSIGCOR[HA5] = B
          F = 2
          G - M[B - 2]
          S = :HREVPOL, Z
          SUBC(MS)
          SE39
          F = - F                   " GEBRUIKT OP 1
          F + 1
          S = :HREVPOL, Z
          SUBC(MS)
          SE39
          S = G, P
      Y,  S = - S
      U,  S '*' 1, Z                " INTEGER
      N,  JUMP(5)
          S = MT[16]                " SE INTEGER TO THE POWER
          F = 2
          HFBEZET[HA5] = G
          F = - 1
          JUMP(7)
      U,  S '*' 2, Z
      Y,  S = 2
      N,  S = 3
          HFBEZET[HA5] = S
      Y,  S = MT[8]
```

```
1047     N,  S = MT[8]
1048         F = - 2
1049         HANOGEN
1050         S = 1072
1051         HGASMETER + S
1052         SE33
1053         HACREATEOB[78]                    " HCYCLE3
1054         SE INTEGER TO THE POWER
1055         SE REAL TO THE POWER
1056         SE COMPLEX TO THE POWER

1057                                                                  " 17.21
1058                                                                  " HECOMPLUS - 0
1059 HECOMPLUS(215)
1060         F = 1
1061         G - M[B - 1]
1062         SUBC(:MT[79])                     " ( - S) := G := REVPOL[ - G]
1063         S = S, R
1064     Y,  S = - S
1065         S '*' 4, Z                        " COMPLEX?
1066     Y,  JUMP(25)
1067         S = HFBEZET[HA5]
1068         S - 3, Z
1069     Y,  JUMP(198)
1070         SUBC(:MT[192])                    " INVERT OP
1071         S - '10310', Z                    " COMPLUS ?
1072     Y,  S = MT[17]                        " F + MC[ - 2]
1073     N,  S = MT[17]                        " F - MC[ - 2]
1074         F = - 2
1075         HANOGEN
1076     N,  S = MT[104]                       " F = - F
1077     N,  SUBC(:HGENERATE)
1078         F = 1
1079         G - M[B - 2]
1080         SUBC(:MT[61])                     " S := - (G := REVPOL[ - G])
1081     Y,  JUMP(4)
1082         S = - HSIGCOR[HA5], R
1083     N,  F = - F, R
1084     Y,  HSIGCOR[HA5] = S
1085         JUMP(2)
1086         S = - S, R
1087     Y,  HSIGCOR[HA5] = B
1088         S = 4
1089         JUMP(166)

1090                                                                  " 17.21
1091                                                                  " HECOMPLUS - 1
1092         F + MC[ - 2]
1093         F - MC[ - 2]
1094         G = - M[B - 1]
1095         SUBC(:MT[48])                     " S := - (G := REVPOL[ - G])
1096         S + '104', Z                      " IDENTIFIER NE
1097     N,  JUMP(81)
1098         F = 2
1099         G - M[B - 1]
1100         SUBC(:MT[43])                     " S := - (G := REVPOL[ - G])
1101         MC = - S
1102         S = HFBEZET[HA5]
1103         S - 3, Z
1104     N,  JUMP(167)
```

complex addition

```
1105          SUBC(:MT[159])                  " INVERT OP
1106          $ - '10310', Z                  " COMPLUS ?
1107      Y,  $ = '303'                       " F + DYN
1108      N,  $ = '307'                       " F - DYN
1109          RCS(8)
1110          $ + M[B - 1]
1111          $ + 2
1112          HGEN
1113          $ = MT[26]                      " MC = F
1114          F = 2
1115          HANOGEN
1116          JUMP(0)
1117      Y,  $ = '627'                       " F = DYN, Z
1118      N,  $ = '637'                       " F = - DYN, Z
1119          RCS(9)
1120          $ + MC[ - 1]
1121          HGEN

1122                                                                  " 17.21
1123                                                                  " HECOMPLUS - 2
1124          $ = MT[18]                      " N,    F + M[B - 4]
1125          HGEN
1126          $ = MT[17]                      " N,    M[B - 4] = F
1127          HGEN
1128          $ = MT[16]                      " F = MC[ - 2]
1129          F = - 2
1130          HANOGEN
1131          F = 1
1132          G - M[B - 2]
1133          SUBC(:MT[12])                   " S := - (G := REVPOL[ - G]
1134          $ = $, R
1135      N,  JUMP(4)
1136          $ = HOP[HA5]
1137          $ - '14310', R
1138          $ = HSIGCOR[HA5], E
1139      Y,  HSIGCOR[HA5] = - $
1140          $ = 22
1141          JUMP(118)
1142          MC = F
1143      N,  F + M[B - 4]
1144      N,  M[B - 4] = F
1145          F = MC[ - 2]
1146          $ = :HREVPOL, Z                 " SUBROUTINE $ := - (G := REVPOL[ - G])
1147          SUBC(MS)
1148          $E39
1149          $ = - G
1150          GOTOR(MC[ - 1])
1151          $ = HSIGCOR[HA5], R
1152      Y,  $ = MT[26]                      " MC[2] = F
1153      N,  $ = MT[26]                      " MC[2] = - F
1154          F = 4
1155          HANOGEN

1156                                                                  " 17.21
1157                                                                  " HECOMPLUS - 3
1158          $ = HOP[HA5]
1159          $ - '10310', Z                  " COMPLUS ?
1160      Y,  $ = '313'                       " F = DYN
1161      N,  $ = '317'                       " F = - DYN
1162          RCS(8)
```

```
1163          S + M[B - 1]
1164          HGEN
1165          S = MT[101]                          " M[B - 2] = E
1166          HGEN
1167          S = MT[100]                          " E = M[B]
1168          E = - 2
1169          HANOGEN
1170          S = HOP[HA5]
1171          S - '10310', Z                       " COMPLUS?
1172      Y,  S = '303'                            " E + DYN
1173      N,  S = '307'                            " E - DYN
1174          RCS(8)
1175          S + MC[ - 1]
1176          S + 2
1177          HGEN
1178          HSIGCOR[HA5] = B
1179          S = 19
1180          JUMP(81)
1181          MC[2] = E
1182          MC[2] = - E
1183          SUBC(:MT[85])                        " INVERT OP
1184          E = 2
1185          G - M[B - 2]
1186          SUBC(:MT[ - 39])
1187          E = - E                              " GEBRUIKT OP 16

1188                                                                  " 17.21
1189                                                                  " HECOMPLUS - 4
1190          E + 1
1191          SUBC(:MT[ - 42])                     " S := - (G := REVPOL[ - G])
1192          S = S, E
1193      Y,  S = - S
1194      U,  S '*' 4, Z                           " COMPLEX?
1195      N,  JUMP(31)
1196          S = HOP[HA5]
1197          S - '10310', Z                       " COMPLUS?
1198      Y,  S = MT[19]                           " E + M[B - 4]
1199      N,  S = MT[19]                           " E - M[B - 4]
1200          HGEN
1201          S = MT[18]                           " M[B - 4] = E
1202          HGEN
1203          S = MT[17]                           " E = MC[ - 2], Z
1204          E = - 2
1205          HANOGEN
1206      Y,  S = MT[15]                           " N,    E + M[B - 4]
1207      N,  S = MT[15]                           " N,    E - M[B - 4]
1208          HGEN
1209      Y,  S = MT[14]                           " N,    M[B - 4] = E
1210      N,  S = MT[14]                           " N,    M[B - 4] = - E
1211          HGEN
1212      Y,  S = MT[ - 64]                        " E = MC[ - 2]
1213      N,  S = MT[12]                           " E = - MC[ - 2]
1214          E = - 2
1215          HANOGEN
1216          HSIGCOR[HA5] = B
1217          JUMP( - 74)
1218          E + M[B - 4]
1219          E - M[B - 4]
1220          M[B - 4] = E
1221          E = MC[ - 2], Z
```

```
1222                                                                    " 17.21
1223                                                                    " HECOMPLU$ - 5
1224      N,  F + M[B - 4]
1225      N,  F - M[B - 4]
1226      N,  M[B - 4] = F
1227      N,  M[B - 4] = - F
1228          F = - MC[ - 2]
1229          $ '*' 1, Z                        " INTEGER
1230          $ = HOP[HA5]
1231      N,  JUMP(13)
1232          $ - '10310', Z                    " COMPLU$
1233      Y,  $ = MT[25]                        " G + M[B - 3]
1234      N,  $ = MT[25]                        " G - M[B - 3]
1235          HGEN
1236          $ = MT[24]                        " S = M[B - 2]
1237          HGEN
1238          $ = MT[23]                        " M[B - 3] = $
1239          HGEN
1240          $ = MT[22]                        " S = MC[ - 1]
1241          F = - 1
1242          HANOGEN
1243          $ = MT[20]                        " M[B - 1] = $
1244          JUMP(12)
1245          $ - '10310', Z
1246      Y,  $ = MT[ - 27]                     " F + M[B - 4]
1247      N,  $ = MT[ - 27]                     " F - M[B - 4]
1248          HGEN
1249          $ = MT[13]                        " S = MC[ - 1]
1250          F = - 2
1251          HANOGEN
1252          $ = MT[12]                        " M[B - 2] = $
1253          HGEN
1254          $ = MT[8]                         " S = MC[ - 1]
1255          HGEN
1256                                                                    " 17.21
1257                                                                    " HECOMPLU$ - 6
1258          $ = MT[8]                         " M[B - 2] = $
1259          HGEN
1260          JUMP( - 117)
1261          G + M[B - 3]
1262          G - M[B - 3]
1263          $ = M[B - 2]
1264          M[B - 3] = $
1265          $ = MC[ - 1]
1266          M[B - 1] = $
1267          M[B - 2] = $
1268          HGASMETER + $
1269          $ = 3
1270          HFBEZET[HA5] = $
1271          SE33
1272          HACREATEOB[78]
1273          M[B - 2] = F
1274          F = M[B]
1275          $ = HOP[HA5]                      " SUBROUTINE INVERT OP
1276      U,  $ = HSIGCOR[HA5], R
1277      N,  $ '+' '30 000'
1278      N,  HOP[HA5] = $
1279          GOTOR(MC[- 1])
```

```
1280          SE33
1281          HEAROP
1282          S = HRESP                       " RUIMTE OM BOVEN B TE WERKEN
1283          S - 5, P
1284      N,  S = 2
1285      N,  HRESP = S
1286          JUMP(- 128)

1287                                                                  " 17.22
1288                                                                  " HECOMTIM - 0
1289 HECOMTIM(272)
1290          G = - M[B - 1]
1291          SUBC(:MT[183])                  " S := - (G := REVPOL[ - G]), P
1292      U,  S '*' 2, Z                      " CONSTANT ?
1293      N,  JUMP(72)
1294          F = 1
1295          G - M[B - 1]
1296          SUBC(:MT[178])                  " REVPOL
1297          S '*' 2, Z                      " REAL?
1298      N,  JUMP(20)
1299          S = MT[8]
1300          GLO = S
1301          SUBC(:MT[178])                  " RUIMTE
1302          S = M[B - 1]
1303          MC = S
1304          S = 128                         " MAAL
1305          MC = S
1306          SE33
1307          HETRCON
1308          HECOMTIM[19]
1309          S = MT[6]                       " MC = F
1310          F = 2
1311          HANOGEN
1312          S = MT[4]                       " F = M[B - 4], Z
1313          HGEN
1314          S = MT[3]                       " N,    F * MT[ - 6]
1315          JUMP(38)
1316          MC = F
1317          F = M[B - 4], Z
1318      N,  F * MT[ - 6]
1319          F = 2
1320          G - M[B - 1]
1321          SUBC(:MT[153])                  " REVPOL

1322                                                                  " 17.22
1323                                                                  " HECOMTIM - 1
1324      N,  S = - S
1325      U,  S - '77 777', P
1326      Y,  JUMP(17)
1327          MC = S
1328          S = - G, P
1329      Y,  S = HSIGCOR[HA5]
1330      Y,  HSIGCOR[HA5] = - S
1331          S = '341'                       " F * :STAT
1332          RCS(8)
1333          S + M[B - 1]
1334          HGEN
1335          S = MT[ - 18]                   " MC = F
1336          F = 2
1337          HANOGEN
```

complex multiplication

```
1338          S = MT[ - 20]                    " F = M[B - 4], Z
1339          HGEN
1340          S = '7023'                       " N,    F * :STAT
1341          RCS(12)
1342          S + MC[ - 1]
1343          JUMP(12)
1344          SUBC(:MT[137])                   " RUIMTE
1345          S = MT[1]
1346          JUMP( - 45)
1347          HECOMTIM[56]
1348          S = MT[ - 31]                    " MC = F
1349          F = 2
1350          HANOGEN
1351          S = MT[ - 33]                    " F = M[B - 4], Z
1352          HGEN
1353          S = MT[10]                       " Y,    JUMP(2)
1354          HGEN
1355          S = MT[9]                        " G * MT[- 6]

1356                                                                  " 17.22
1357                                                                  " HECOMTIM - 2
1358          HGEN
1359          S = MT[8]                        " N,    M[B - 4] = F
1360          HGEN
1361          S = MT[7]                        " F = MC[ - 2]
1362          F = - 2
1363          HANOGEN
1364          S = 65
1365          JUMP(185)
1366     Y,   JUMP(2)
1367          G * MT[ - 6]
1368     N,   M[B - 4] = F
1369          F = MC[ - 2]
1370          S + '104', Z                     " IDENT NF
1371     N,   JUMP(122)
1372          F = 2
1373          G - M[B - 1]
1374          SUBC(:MT[1041])                  " REVPOL
1375          G + MT[18]                       " G + '706300000'
1376          MC = G
1377          S = HFBE?ET[HA5]
1378     U,   S - 1, Z
1379     N,   JUMP(17)
1380          S = MT[14]                       " S = G, Z
1381          HGEN
1382          S = M[B - 1]
1383          HGEN
1384          S = MT[ - 65]                    " MC = F
1385          F = 2
1386          HANOGEN
1387          S = MT[8]                        " G = S
1388          HGEN
1389          S = 2

1390                                                                  " 17.22
1391                                                                  " HECOMTIM - 3
1392          S + MC[ - 1]
1393          HGEN
1394          S = 140
1395          JUMP(157)
```

```
1396          '706300000'
1397          $ = G, Z
1398          G = $
1399          $ - 2, Z
1400      N,  JUMP(11)
1401          SUBC(:MT[84])                  " RUIMTE OM BOVEN B TE WERKEN
1402          $ = MT[24]                     " MC[2] = F, Z
1403          F = 4
1404          HANOGEN
1405          $ = M[B - 1]
1406          HGEN
1407          $ = MT[20]                     " M[B - 2] = F
1408          F = - 2
1409          HANOGEN
1410          $ = MT[155]                    " F = M[B]
1411          JUMP(- 22)
1412          F = 1
1413          G - M[B - 2]
1414          SUBC(:MT[66])                  " REVPOL
1415      U,  $ '*' 2, Z                     " REAL?
1416      N,  JUMP(14)
1417          $ = MT[12]                     " - 3 * 2 + 15
1418          $ + M[B - 1]
1419          HGEN
1420          $ = MT[ - 99]                  " MC = F
1421          F = 2
1422          HANOGEN
1423          $ = MT[ - 101]                 " F = M[B - 4], Z
1424                                         " 17.22
1425                                         " HECOMTIM - 4
1426          HGEN
1427          $ = MC[ - 1]
1428          JUMP( - 67)
1429          MC[2] = F, Z
1430          M[B - 2] = F
1431          F = MC[0]
1432          - '300000'
1433          $ '*' 1, Z                     " INTEGER
1434          $ = M[B - 1]
1435          $ - MT[- 38]                   " NU WEER REVPOL[TOP - 2] OP STACK ZETTEN
1436          M[B - 1] = $
1437      N,  JUMP(18)
1438          $ = '1260'
1439          LUS(15)
1440          $ + MC[ - 1]
1441          HGEN
1442          $ = MT[12]                     " G * $
1443          HGEN
1444          $ = MT[ - 121]                 " MC = F
1445          F = 2
1446          HANOGEN
1447          $ = MT[ - 123]                 " F = M[B - 4], Z
1448          HGEN
1449          $ = - 4
1450          SUBC(:MT[38])                  " RUIMTE
1451          $ = MT[ - 82]                  " Y,    JUMP(2)
1452          HGEN
1453          $ = MT[1]                      " G * $
1454          JUMP( - 93)
```

```
1455          G * S
1456          S = MT[ - 133]                    " MC = F
1457          F = 4

1458                                                                  " 17.22
1459                                                                  " HECOMTIM - 5
1460          HANOGEN
1461          S = '627'
1462          RCS(9)
1463          S + M[B - 1]
1464          HGEN
1465          S = MT[ - 140]                    " MC = F
1466          HGEN
1467          S = MT[13]                        " Y,    F = M[B - 6], Z
1468          HGEN
1469          S = '313'
1470          RCS(8)
1471          S + MC[ - 1]
1472          S + 2
1473          HGEN
1474          S = MT[7]                         " Y,    F * M[B - 4]
1475          HGEN
1476          S = MT[6]                         " Y,    B - 4
1477          F = - 4
1478          HANOGEN
1479          S = MT[4]                         " N,    SUBC(:RSECOMTIM)
1480          JUMP( - 84)
1481      Y,  F = M[B - 6], Z
1482      Y,  F * M[B - 4]
1483      Y,  B - 4
1484      N,  SUBC(:RSE111)
1485          S=:HREVPOL, Z             " SUBROUTINE S = - (G = REVPOL[ - G])
1486          SUBC(MS)
1487          SE39
1488          S = - G, R                        " CONDITIE GEZET
1489          GOTO(MC[ - 1])
1490          S = - 10
1491          S + HRESP, R

1492                                                                  " 17.22
1493                                                                  " HECOMTIM - 6
1494      Y,  GOTOR(MC[ - 1])
1495          S = 2
1496          HRESP = S
1497          HGEN
1498          S = 1
1499          HORTOP - S
1500          HRESP + S
1501          GOTOR(MC[ - 1])
1502          S = HFBEZET(#A5)
1503          S - 3, Z
1504      Y,  JUMP(22)
1505          S = MT[ - 178]
1506          F = 2
1507          HANOGEN
1508          S = MT[12]                        " F = M[B - 6], Z
1509          HGEN
1510          S = MT[11]                        " N,    F * M[B - 2]
1511          HGEN
1512          S = MT[10]                        " N,    M[B - 6] = F
```

```
1513          HGEN
1514          $ = MT[9]                       " F = MC[ - 2], Z
1515          F = - 3
1516          HANOGEN
1517          $ = MT[7]                       " N,    F * M[B - 2]
1518          HGEN
1519          $ = MT[6]                       " B - 2
1520          JUMP(34)                        " CONDITIE IS NO
1521          F = M[B - 6], Z
1522      N,  F * M[B - 2]
1523      N,  M[B - 6] = F
1524          F = MC[ - 2], Z
1525      N,  F * M[B - 2]

1526                                                                  " 17.22
1527                                                                  " HECOMTIM - 7
1528          B - 2
1529          F = 2
1530          G - M[B - 2]
1531          SUBC(:MT[ - 43])                " S := REVPOL[ - G]
1532          F = - F
1533          F + 1
1534          SUBC(:MT[ - 46])                " S := - (G := REVPOL[ - G]), F
1535      Y,  $ = - $
1536      U,  $ '*' 4, Z                      " COMPLEX?
1537      Y,  $ = MT[37]                      " SUBC(:RSE111)
1538      Y,  JUMP(19)
1539          $ '*' 2, Z                      " REAL?
1540      Y,  $ = MT[25]                      " F * M[B - 4]
1541      N,  $ = MT[25]                      " G * M[B - 3]
1542          HGEN
1543          SUBC(:MT[- 50])                 " RUIMTE OM BOVEN B TE WERKEN
1544          $ = MT[23]                      " M[B] = F
1545          F = 2
1546          HANOGEN
1547          $ = MT[21]                      " F = M[B - 2], Z
1548          HGEN
1549      Y,  $ = MT[20]                      " N,    F * M[B - 4]
1550      N,  $ = MT[20]                      " G * MC[ - 3]
1551          HGEN
1552      Y,  $ = MT[19]                      " M[B - 4] = F
1553      N,  $ = MT[- 118]                   " M[B - 2] = F
1554          HGEN
1555      Y,  $ = MT[- 119]                   " F = MC
1556      N,  $ = MT[16]                      " F = M[B  + 1]
1557      N,  F = - 3
1558      Y,  F = - 4
1559          HANOGEN
1560          $ = 144

1561                                                                  " 17.22
1562                                                                  " HECOMTIM - 8
1563          HGASMETER + $
1564          $ = 3
1565          HFBEZET[HA5] = $
1566          SE33
1567          HACREATEOB[78]                  " HCYCLE3
1568          F * M[B - 4]
1569          G * M[B - 3]
1570          M[B] = F
```

```
1571          E = M[B - 2], Z
1572      N,  E * M[B - 4]
1573          G * MC[ - 3]
1574          M[B - 4] = E
1575          E = M[B + 1]
1576          E = M[B]
1577          SUBC(:PSE111)

1578                                                                  " 17.23
1579                                                                  " HECOMDIV - 0
1580  HECOMDIV(437)          complex division
1581          E = 1
1582          G - M[B - 2]
1583          SUBC(:MT[201])                  " - S := G := REVPOL[- G]
1584          MC = G, P                       " NIET WISSELEN?
1585          G = - M[B - 3]
1586      Y,  E + 2
1587      Y,  SUBC(:MT[197])                  " - S := G := REVPOL[- G]
1588      Y,  E = - E
1589      Y,  E + 1
1590      N,  E + 4
1591          SUBC(:MT[193])
1592          MC = G, P
1593      Y,  M[B - 1] = S                    " NU TYPE FO NEGATIEF OP STACK
1594          E = 1
1595          G - M[B - 3]
1596          SUBC(:MT[188])
1597          MC = S, P
1598      Y,  S = G                           " TYPE S,0, NEGATIEF IN S
1599      U,  S '*' 4, Z                      " COMPLEX?
1600      Y,  JUMP(143)
1601          S = HFBEZET[HA5]
1602      U,  S - 3, Z                        " FBEZET = 3?
1603      N,  JUMP(124)
1604          S = M[B - 3], P                 " NIET GEWISSELD?
1605      Y,  JUMP(62)
1606          S = MT[191]                     " MC = E
1607          E = 4
1608          HANOGEN
1609          S = MT[189]                     " E = M[B - 4], Z
1610          HGEN
1611          S = - 8                         " AANTAL PLAATSEN NODIG
1612          E = 6                           " GROOTTE VAN JUMP

1613                                                                  " 17.23
1614                                                                  " HECOMDIV - 1
1615          SUBC(:MT[176])                  " RUIMTE EN Y, JUMP(G)
1616          S = MT[185]                     " E * E
1617          HGEN
1618          S = MT[181]                     " MC = E
1619          HGEN
1620          S = MT[182]                     " E = M[B - 4]
1621          HGEN
1622          S = MT[179]                     " E * E
1623          HGEN
1624          S = MT[179]                     " E + M[B - 2]
1625          HGEN
1626          S = MT[178]                     " M[B - 2] = E
1627          HGEN
1628          G = - M[B - 4]
```

```
1629          SUBC(:MT[157])                  " REVPOL[- G]
1630          S '*' 2, Z                      " CONSTANT?
1631      N,  JUMP(9)
1632          F = 32                          " REPR. =
1633          S = MT[6]                       " TERUGKEER ADRES
1634          GL0 = S
1635          S = M[B - 4]
1636          MC = S
1637          MC = G
1638          SE33
1639          METRCON
1640          MECOMDIV[68]
1641          F = 2
1642          G - M[B - 4]
1643          SUBC(:MT[143])                  " REVPOL[- G]
1644          MC = G
1645          S = M[B - 2]
1646          S '*' 1, Z                      " INTEGER?

1647                                                                  " 17.23
1648                                                                  " MECOMDIV - 2
1649      Y,  S = MT[158]                     " G = M0[- 256]
1650      N,  S = MT[158]                     " F = M0[- 256]
1651          S + MC[- 1]
1652          MGEN
1653          S = MT[156]                     " F/MC[- 2]
1654          F = - 2
1655          MANOGEN
1656          S = - 7
1657          F = 5
1658          SUBC(:MT[135])                  " RUIMTE EN Y, JUMP(5)
1659          S = MT[142]                     " MC = F
1660          MGEN
1661          S = MT[149]                     " F * M[B - 6]
1662          MGEN
1663          S = MT[148]                     " M[B - 6] = - F
1664          MGEN
1665          S = MT[147]                     " F = MC[- 2]
1666          MGEN
1667          S = MT[146]                     " F * MC[- 2]
1668          F = - 2
1669          MANOGEN
1670          S = 220
1671          JUMP(300)
1672          G = - M[B - 4]
1673          SUBC(:MT[115])                  " REVPOL[- G]
1674          S '*' 2, Z                      " CONSTANT?
1675      N,  JUMP(37)
1676          S = M[B - 1]
1677          S '*' 1, Z                      " INTEGER?
1678      N,  JUMP(19)
1679          F = 2
1680          G - M[B - 4]

1681                                                                  " 17.23
1682                                                                  " MECOMDIV - 3
1683          SUBC(:MT[107])                  " REVPOL[- G]
1684          RUS(15), Z                      " ABS < 2 ↑ 15?
1685      N,  JUMP(14)
1686          S = G, R
```

```
1687      N,  $ = - $
1688          $ + MT[128]                          " E/0
1689          MC = $
1690          MGEN
1691      N,  $ = MSIGCOR[MA5]
1692      N,  MSIGCOR[MA5] = - $
1693          $ = MT[110]                          " MC = E
1694          E = 2
1695          MANOGEN
1696          $ = MT[110]                          " E = M[B - 4]
1697          MGEN
1698          $ = MC[- 1]
1699          JUMP(26)
1700          $ = - 8
1701          SUBC(:MT[94])                        " RUIMTE EN Y, JUMP
1702          $ = 1
1703          MOBTOP - $
1704          MRESP + $                            " VERWIJDER Y, JUMP WEER
1705          $ = MT[2]
1706          E = 144
1707          JUMP(- 70)                           " NAAR TREAT CONSTANT
1708          MECOMDIV[122]
1709          $ = M[B - 1]
1710          $ '*' 1, Z                           " INTEGER?
1711      Y,  $ = MT[106]                          " G/MT[- 5]
1712      N,  $ = MT[106]                          " E/MT[- 6]
1713          MC = $
1714          JUMP(- 22)

1715                                                                  " 17.23
1716                                                                  " MECOMDIV - 4
1717          E = 2
1718          G - M[B - 4]
1719          SUBC(:MT[73])                        " REVPOL[- G]
1720          $ = M[B - 1]
1721          $ '*' 1, Z                           " INTEGER?
1722      Y,  $ = MT[99]                           " G/M0[- 256]
1723      N,  $ = MT[99]                           " E/M0[- 256]
1724          $ + G
1725          MC = $
1726          MGEN
1727          JUMP(- 33)
1728          MGEN
1729          $ = MT[94]                           " M[B - 4] = E
1730          MGEN
1731          $ = MT[85]                           " E = MC[- 2]
1732          E = - 2
1733          MANOGEN
1734          $ = 68
1735          JUMP(240)
1736          E = 7
1737          SUBC(:MT[250])                       " RUIMTE OM BOVEN B TE WERKEN EN GEN(M[B] = E)
1738          $ = MT[70]                           " E = M[B - 4]
1739          E = 2
1740          MANOGEN
1741          $ = MT[84]                           " E/M[B]
1742          MGEN
1743          $ = MT[80]                           " M[B - 4] = E
1744          MGEN
1745          $ = MT[81]                           " E = M[B - 2]
```

```
1746          WGEN
1747          $ = MT[80]                        " E/MC
1748          E = - 4

1749                                                                  " 17.23
1750                                                                  " WECOMDIV - 5
1751          WANOGEN
1752          $ = 59
1753          JUMP(224)
1754          G = - M[B - 4]
1755          SUBC(:MT[39])                     " REVPOL[- G]
1756          $ + '104', Z                      " IDENTIFIER NE
1757      N,  JUMP(130)
1758          E = 2
1759          G - M[B - 4]
1760          SUBC(:MT[34])                     " REVPOL[- G]
1761          MC = G
1762          $ = WFBEZET[WA5]
1763          $ - 3, Z
1764      N,  JUMP(69)
1765          $ = MT[42]                        " MC = E
1766          E = 4
1767          WANOGEN
1768          $ = MT[62]                        " E = M0[- 256), Z
1769          $ + M[B - 1]
1770          WGEN
1771          $ = - 11
1772          E = 4
1773          SUBC(:MT[26])                     " RUIMTE EN Y, JUMP(G)
1774          $ = MT[33]                        " MC = E
1775          WGEN
1776          $ = MT[55]                        " E = M0[- 254]
1777          $ + M[B - 1]
1778          WGEN
1779          $ = MT[53]                        " SUBC(:RSE10)
1780          WGEN
1781          $ = MT[236]                       " JUMP(5)
1782          WGEN

1783                                                                  " 17.23
1784                                                                  " WECOMDIV - 6
1785          $ = MT[27]                        " E = M[B - 4]
1786          WGEN
1787          $ = MT[233]                       " E / M0[- 254]
1788          $ + M[B - 1]
1789          WGEN
1790          $ = MT[37]                        " M[B - 4] = E
1791          WGEN
1792          $ = MT[28]                        " E = MC[- 2]
1793          E = - 4
1794          WANOGEN
1795          $ = MT[225]                       " E / M0[- 254]
1796          JUMP(89)
1797          $ = :HREVPOL, Z                   " SUBROUTINE REVPOL[- G]
1798          SUBC(MS)
1799          SE39
1800          $ = - G
1801          GOTOR(MC[- 1])
1802          $ + HRESP, R
1803      N,  $ = 2
```

```
1804      N,  HRESP = S
1805          S = MT[3]
1806          S + G
1807          HGEN
1808          GOTOR(MC[- 1])
1809      Y,  JUMP(0)                          " 212
1810          MC = F                           " 25, 35, 74, 106, 174, 183, 283, 305, 315, 330,
1811          F = M[B - 4], Z                  " 28, 308, 317, 339
1812          F * F                            " 33, 39, 263, 313
1813          F = M[B - 4]                     " 37, 109, 150, 192
1814          F + M[B - 2]                     " 41, 265
1815          M[B - 2] = F                     " 43, 255, 267, 379
1816          G = M0[- 256]                    " 64

1817                                                                  " 17.23
1818                                                                  " HECOMDIV - 7
1819          F = M0[- 256]                    " 65
1820          F/MC[- 2]                        " 68, 328
1821          F * M[B - 6]                     " 76
1822          M[B - 6] = - F                   " 78
1823          F = MC[- 2]                      " 80, 142, 199
1824          F * MC[- 2]                      " 82
1825          F/0                              " 101
1826          G/MT[- 5]                        " 124
1827          F/MT[- 6]                        " 125
1828          G/M0[- 256]                      " 133
1829          F/M0[- 256]                      " 134
1830          M[B - 4] = F                     " 140, 154, 197, 378
1831          M[B] = F                         " 399
1832          F / M[B]                         " 152,269
1833          F = M[B - 2]                     " 156
1834          F/MC                             " 158, 351
1835          F = M0[- 256], Z                 " 177, 248
1836          F = M0[- 254]                    " 185, 260
1837          SUBC(:RSE10)                     " 188, 302
1838          S = - M[B - 4], P                " GEWISSELD ?
1839      N,  F = 11
1840      Y,  F = 7
1841          S = MT[146]                      " MC[2] = F
1842          SUBC(:MT[152])                   " RUIMTE(G) EN GEN(S)
1843          S = MT[- 9]                      " F = M0[- 256], Z
1844          S + M[B - 1]
1845          F = 4
1846          HANOGEN
1847      Y,  S = MT[173]                      " N, F / M[B]
1848      N,  S = MT[140]                      " N, F * F
1849          HGEN
1850          S = MT[- 34]                     " M[B - 2] = F

1851                                                                  " 17.23
1852                                                                  " HECOMDIV - 8
1853          HGEN
1854      N,  S = - 6
1855      N,  F = 4
1856      N,  SUBC(:MT[- 51])                  " RUIMTE EN Y, JUMP(4)
1857          S = MT[- 20]                     " F = M0[- 254]
1858          S + M[B - 1]
1859          HGEN
1860      N,  S = MT[- 45]                     " F * F
1861      N,  SUBC(:HGENERATE)
```

```
1862      N,  S = MT[- 45]                    " F + M[B + 2]
1863      N,  SUBC(:HGENERATE)
1864      N,  S = MT[- 46]                    " M[B - 2] = F
1865      N,  SUBC(:HGENERATE)
1866      Y,  S = MT[- 33]                    " F/M[B]
1867      N,  S = MT[124]                     " F = M[B]
1868          F = - 2
1869          HANOGEN
1870      Y,  B - 1
1871      Y,  JUMP(20)
1872          S = MT[120]                     " Y, F/MQ[- 254]
1873          S + M[B - 1]
1874          HGEN
1875          S = - 8
1876          F = 6
1877          SUBC(:MT[- 72])                 " RUIMTE EN Y, JUMP(6)
1878          S = MT[115]                     " F/M[B - 2]
1879          HGEN
1880          S = MT[- 67]                    " MC = F
1881          HGEN
1882          S = MT[112]                     " F * MQ[- 256]
1883          S + M[B - 1]
1884          HGEN

1885                                                                  " 17.23
1886                                                                  " HECOMDIV - 9
1887          S = MT[140]                     " M[B - 4] = - F
1888          HGEN
1889          S = MT[139]                     " F = MC[- 2], Z
1890          HGEN
1891          S = MT[138]                     " N, F * MQ[- 254]
1892          S + MC[- 1]
1893          HGEN
1894          S = 200
1895          JUMP(90)
1896          S = M[B - 2], P
1897      Y,  S = - S
1898      U,  S = M[B - 3], P                 " NIET WISSELEN?
1899      N,  JUMP(65)
1900      U,  S '*' 4, Z                      " COMPLEX?
1901      Y,  S = MT[- 61]                    " SUBC(:PSE10)
1902      Y,  JUMP(58)
1903          S '*' 2, Z                      " REAL?
1904          S = MT[- 89]                    " MC = F
1905          F = 4
1906          HANOGEN
1907          S = MT[- 91]                    " F = M[B - 4], Z
1908          HGEN
1909          S = - 23
1910          F = 16
1911          SUBC(:MT[- 104])                " RUIMTE EN Y, JUMP(16)
1912          S = MT[- 95]
1913          HGEN
1914          S = MT[- 99]                    " MC = F
1915          HGEN
1916          S = MT[- 100]                   " F = M[B - 4], Z
1917          HGEN
1918          S = MT[74]                      " N, F * F

1919                                                                  " 17.23
```

```
1920                                                                    " WECOMDIV - 10
1921          WGEN
1922          S = MT[110]                       " N, F + M[B - 2]
1923          WGEN
1924          S = MT[109]                       " N, M[B - 2] = F
1925          WGEN
1926     Y,   S = MT[108]                       " F = M[B - 8]
1927     N,   S = MT[108]                       " G = M[B - 7]
1928          WGEN
1929          S = MT[- 104]                     " F/MC[- 2]
1930          WGEN
1931          S = MT[- 114]                     " MC = F
1932          WGEN
1933          S = MT[103]                       " F = M[B - 6]
1934          WGEN
1935          S = MT[72]                        " F * M[B - 2]
1936          WGEN
1937     Y,   S = MT[71]                        " M[B - 8] = - F
1938     N,   S = MT[71]                        " M[B - 7] = - F
1939          WGEN
1940          S = MT[- 122]                     " F = M[B - 4], Z
1941          WGEN
1942          S = MT[68]                        " N, F * M[B - 2]
1943          WGEN
1944     Y,   S = MT[67]                        " B - 6
1945     N,   S = MT[67]                        " B - 5
1946          WGEN
1947          S = MT[80]                        " JUMP(5)
1948          WGEN
1949     Y,   S = MT[64]                        " F = MC[- 6]
1950     N,   S = MT[64]                        " G = MC[- 5]
1951          WGEN
1952     Y,   S = MT[- 113]                     " F/MC

1953                                                                    " 17.23
1954                                                                    " WECOMDIV - 11
1955     N,   S = MT[62]                        " F/MC[- 1]
1956          WGEN
1957          S = MT[61]                        " S = 0
1958          WGEN
1959          S = MT[60]                        " M[B - 1] = S
1960          JUMP(0)
1961          F = - 2
1962          WANOGEN
1963          S = MT[57]                        " M[B - 2] = S
1964     N,   F = - 3
1965     Y,   F = - 4
1966          WANOGEN
1967          S = 220
1968          JUMP(21)
1969          S '*' 2, Z                        " REAL?
1970     Y,   S = MT[51]                        " F/M[B - 4]
1971     N,   S = MT[51]                        " G/M[B - 3]
1972          WGEN
1973          F = 6
1974          SUBC(:MT[27])                     " RUIMTE(G) EN GEN(M[B] = F)
1975          S = MT[48]                        " F = M[B - 2], Z
1976          F = 2
1977          WANOGEN
1978     Y,   S = MT[46]                        " N, F/M[B - 4]
```

```
1979      N,  S = MT[46]                          " G/MC[- 3]
1980          HGEN
1981      Y,  S = MT[- 144]                       " M[B - 4] = E
1982      N,  S = MT[- 158]                       " M[B - 2] = E
1983          HGEN
1984      Y,  S = MT[42]                          " E = MC
1985      N,  S = MT[42]                          " E = M[B + 1]
1986      Y,  E = - 4

1987                                                                    "17.23
1988                                                                    "HECOMDIV - 12
1989      N,  E = - 3
1990          HANOGEN
1991          S = 54
1992          HGASMETER + S
1993          S = 3
1994          HFBEZET[HA5] = S
1995          B - 3
1996          SE33
1997          HACREATEOB[78]
1998          MC[2] = E                           " 246
1999      N,  E * E                               "253,319
2000          E = M[B]                            "270
2001      Y,  E/MO[ - 254]                        "275
2002          E/M[B - 2]                          "281
2003          E * MO[ - 256]                      "285
2004          S = MT[- 164]                       " SUBROUTINE RUIMTE(G) EN GEN(M[B] = E)
2005          MC = S
2006          G - HRESP, R
2007      Y,  S = 2
2008      Y,  HRESP = S
2009          S = MC[- 1]
2010          HGEN
2011          GOTOR(MC[- 1])
2012          E * M[B - 2]                        "334
2013          M[B - 8] = - E                      "336
2014          M[B - 7] = - E                      "337
2015      N,  E * M[B - 2]                        "341
2016          B - 6                               "343
2017          B - 5                               "344
2018          E = MC[ - 6]                        "348
2019          G = MC[ - 5]                        "349
2020          E/MC[ - 1]                          "352

2021                                                                    "17.23
2022                                                                    "HECOMDIV - 13
2023          S = 0                               "354
2024          M[B - 1] = S                        "356
2025          M[B - 2] = S                        "360
2026          E/M[B - 4]                          "367
2027          G/M[B - 3]                          "368
2028          E = M[B - 2], Z                     "373
2029      N,  E/M[B - 4]                          "375
2030          G/MC[ - 3]                          "376
2031          E = MC                              "381
2032          E = M[B + 1]                        "382
2033      N,  E/M[B]                              " 252
2034          JUMP(5)                             " 190,346
2035          E/MO[- 254]                         " 194,202
2036          M[B - 4] = - E                      " 288
```

```
2037          E = MC[- 2], Z                    " 290
2038      N,  E * M0[- 254]                     " 292
2039      N,  E + M[B - 2]                      " 321
2040      N,  M[B - 2] = E                      " 323
2041          E = M[B - 8]                      " 325
2042          G = M[B - 7]                      " 326
2043          E = M[B - 6]                      " 332

2044                                                          " 17.24
2045                                                          " HESPECEUDES - 0
2046 HESPECEUDES(329)   special function designator
2047          JUMP(324)                          → they use these
2048      N,  SUBC(:HBERG E)                       procedures for which special object code
2049      Y,  S = HCBEZET[HA5], R                  is made without the hullaballoo
2050      N,  JUMP(9)                              of procedure entry & exit.
2051          S = HCONCOR[HA5], R
2052      Y,  S = MT[48]                    " S = T
2053      N,  S = MT[48]                    " S = - T
2054          HGEN
2055          S = MT[59]                    " MC = S
2056          E = 1                         " GEBRUIKT OP 42
2057          HANOGEN
2058          HCBEZET[HA5] = - B
2059      N,  HCONCOR[HA5] = B
2060          E = 2
2061          G = M[B - 1]
2062          SUBC(:MT[226])                " S := G := REVPOL[ - G]
2063          E = 2
2064          E = - E
2065          SUBC(:MT[223])
2066      U,  S = 27, R
2067      N,  JUMP(2)
2068          SE33
2069          HEEUDES
2070          HSPECIN[HA5] = S
2071          LUS(1)
2072          G = - S
2073          S = :HDL, Z
2074          SUBC(:MT[215])
2075          JUMP(1)
2076          '7700000'
2077          S '*' MT[- 2], Z              " GEDECLAREERD OP BLOKHOOGTE NUL ?
2078      N,  JUMP( - 11)

2079                                                          " 17.24
2080                                                          " HESPECEUDES - 1
2081          S = HSPECIN[HA5]
2082      U,  S = 1, R
2083      Y,  JUMP(22)
2084          E = 2                         " GEBRUIKT OP 43
2085          G = M[B - 1]
2086          SUBC(:MT[204])
2087          E = 3
2088          G = M[B - 1], Z
2089      N,  JUMP( - 20)
2090          S = HSPECIN[HA5], Z
2091      Y,  S = MT[ - 34]                 " E = 1
2092      N,  S = MT[ - 9]                  " E = 2
2093          HGEN
2094          S = MT[10]                    " SUBCD(:CCOCT)
```

```
2095          HGEN
2096          $ = 1
2097          HFBEZET[HA5] = $
2098          HSIGCOR[HA5] = B
2099          $ = 64
2100          HGASMETER + $
2101          SE33
2102          HACREATEOB[79]
2103          $ = T
2104          $ = - T
2105          SUBCD(:CCOCT)
2106          $ = 1
2107          HANPAR[HA5] = $
2108          G = - M[B - 1]
2109          F + 3
2110          MC = - G
2111          SUBC(:MT[179])
2112          F - '36010', Z                          " PARAMETERCOMMA?

2113                                                                  " 17.24
2114                                                                  " HESPECEUDES - 2
2115      N,  JUMP(4)
2116          F = 2
2117          G - M[B - 1]
2118          SUBC(:MT[174])
2119          MC = $                                  " GEBRUIKT OP 8
2120          F = 1
2121          G - M[B - 1]
2122          SUBC(:MT[170])
2123          $ = HSPECIN[HA5]
2124          $ - 5, B
2125      Y,  $ = '7074'                              " EIS (REAL OR INT.) AND (VAR OR EXPR)
2126      N,  $ = '7073'                              " EIS (COMPLEX) AND (VAR OR EXPR)
2127          $ '*' G, Z
2128          G = - MC[ - 2]
2129          SUBC(:MT[163])
2130      Y,  JUMP(3)
2131          F - '32010', Z                          " FUDES
2132      N,  B - 1
2133          JUMP( - 62)
2134          F - '36010', Z                          " PARAMETERCOMMA
2135      N,  JUMP(4)
2136          $ = 1
2137          HANPAR[HA5] + $
2138          G = - MC[ - 1]
2139          JUMP( - 29)
2140          $ = HSPECIN[HA5]
2141      U,  $ - 20, Z                           " SHIFT
2142      Y,  $ = 3
2143      Y,  JUMP(8)
2144      U,  $ - 13, Z                           " COMPOSE
2145      N,  $ - 17, Z                           " WRITETAPE
2146      N,  $ - 2, Z                            " BIT

2147                                                                  " 17.24
2148                                                                  " HESPECEUDES - 3
2149      N,  $ - 2, Z                            " AND
2150      N,  $ - 1, Z                            " OR
2151      N,  $ - 5, Z                            " COM
2152      Y,  $ = 2
```

```
2153      N,  S = 1
2154          MINS(HANPAR[HA5]), Z              " TEST AANTAL PARAMETERS EN ZET HANPAR TERUG OP NUL
2155      N,  JUMP( - 82)
2156          G = - M[B - 1]
2157          F + 3
2158          MC = - G
2159          SUBC(:MT[135])
2160          F - '36010', Z                    " PARAMETERCOMMA?
2161      N,  JUMP(6)
2162          F = 2
2163          G - M[B - 1]
2164          SUBC(:MT[130])
2165          MC = G
2166          F = - F
2167          SUBC(:MT[127])
2168          S '*' 6, Z                        " - (IDOR CON)?
2169      Y,  JUMP(5)
2170          S = MT[3]
2171          GLO = S
2172          SE33
2173          HEARVAL
2174          HESPECEUDES[141]
2175          S = HANPAR[HA5]
2176          MC = S
2177          S = HSPECIN[HA5]
2178          MC = S
2179          S = - 3
2180          MC = S
2181          S = M[B - 4]
2182          MC = S
2183          HBOV1

2184                                            " 17.24
2185                                            " HESPECEUDES - 4
2186          HBOV2
2187          SE33
2188          HACREATEOB[37]                    " NEXT
2189          B - 2                             " END OF 2DE IS
2190          S = MC[ - 1]
2191          HSPECIN[HA5] = S
2192          S = MC[ - 1]
2193          HANPAR[HA5] = S
2194          HOND1
2195          HOND2
2196          S = HSPECIN[HA5]
2197      U,  S - 17, Z                         " WRITETAPE ?
2198      Y,  S = HANPAR[HA5], Z                " EERSTE PARAMETER ?
2199      Y,  JUMP(3)
2200      U,  S - 12, R
2201      Y,  S = - S
2202      Y,  S + 23, R
2203      Y,  S = HFBEZET[HA5]
2204      Y,  S - 2, Z
2205      N,  JUMP(6)
2206          S = MT[172]                       " U,  A = E, Z
2207          HGEN
2208          S = MT[94]                        " N,  SUBCD(:RSE88)
2209          HGEN
2210          S = 1
2211          HFBEZET[HA5] = S
```

```
2212          G = - MC[ - 2]
2213          SUBC(:MT[83])
2214          F - '36010', Z                    " PARAMETERCOMMA ?
2215      N,  JUMP(21)
2216          $ = HSPECIN[HA5]
2217          $ - 27, Z                         " COM ?
2218      Y,  $ = MT[85]
2219      Y,  F = 2
2220      Y,  SUBC(:HGENERATE[44])
2221      N,  $ = HFBEZET[HA5]
2222      N,  $ - 2, Z

2223                                                                  " 17.24
2224                                                                  " HESPECFUDES - 5
2225      Y,  $ = MT[81]                        " MC = F
2226      N,  $ = MT[27]                        " MC = G
2227      Y,  F = 2
2228      N,  F = 1
2229      U,  $ = HSIGCOR[HA5], R
2230      N,  $ '+' MT[77]                      " '010 000 000'
2231          HANOGEN
2232          $ = 0
2233          HFBEZET[HA5] = $
2234      N,  HSIGCOR[HA5] = 8
2235          G = - MC[ - 1]
2236          $ = 1
2237          HANPAR[HA5] + $
2238          JUMP( - 78)
2239          $ = HSPECIN[HA5]
2240      U,  $ - 20, R                         " AND T/M COM
2241      Y,  JUMP(9)
2242          $ - 4, R                          " - (GEC, RE, IM)
2243      Y,  $ = - HSIGCOR[HA5], R
2244      Y,  $ = MT[ - 171]                    " F = - F
2245      Y,  SUBC(:HGENERATE)
2246          $ = HSPECIN[HA5]
2247          $ + :MT[59]                       " LIJSTJE 1
2248          $ = MS
2249          HGEN
2250          JUMP(120)
2251          LUS(1)
2252          $ + :MT[33]                               " LIJSTJE 2
2253          F = MS
2254          MC = G                            " GEBRUIKT OP 169
2255          $ = F
2256      U,  $ = HSIGCOR[HA5], R
2257      N,  $ '+' MT[50]                      " '010 000 000'
2258          HGEN

2259                                                                  " 17.24
2260                                                                  " HESPECFUDES - 6
2261          $ = - HSPECIN[HA5]
2262      U,  $ + 27, Z                         " COM ?
2263      Y,  F = - 1
2264      N,  F = 0
2265      N,  $ + 23, R                         " AND, OR?
2266      Y,  F - 1
2267          $ = MC[ - 1]
2268          HANOGEN
2269          $ = HSPECIN[HA5]
```

```
2270      U,  $ - 23, R                       " - (AND, OR, SIGN) ?
2271      N,  $ + : MT[51]
2272      N,  $ = MS
2273      N,  SUBC(:HGENERATE)
2274          $ = HSPECIN[HA5]
2275          $ + :MT[69]                     " LIJSTJE 4
2276          $ = MS
2277          HGASMETER + $
2278          $ = HSPECIN[HA5]
2279      U,  $ - 2, Z
2280      Y,  $ = HSIGCOR[HA5]
2281      Y,  HSIGCOR[HA5] = - $
2282      Y,  JUMP( - 172)
2283      U,  $ - 15, R                       " INSRTAPE T / M COM
2284      N,  $ = 2                           " DAN RE T/M READBACK
2285      N,  JUMP(10)
2286          $ - 16, R                       " - INSRTAPE ?
2287      N,  HCBEZET[HA5] = B
2288      N,  HCONCOR[HA5] = B
2289      N,  JUMP(6)                         " TO HFBEZET := $
2290          $ - 9, R                        " - (WRITETAPE T/M TAIL)
2291      N,  $ = 1
2292      N,  JUMP(3)
2293      U,  $ - 2, R
2294      N,  $ + 0, E                        " - (ABS ^ COM) ?
2295      N,  $ + 1
2296      N,  HFBEZET[HA5] = $

2297                                                                  " 17.24
2298                                                                  " HESPECEUDES - 7
2299          $ = HSPECIN[HA5]
2300      U,  $ - 4, R
2301      Y,  HSIGCOR[HA5] = B
2302          JUMP( - 190)
2303          $ = :HREVPOL, Z                 " SUBROUTINE $ := G := REVPOL[ - G]
2304          SUBC(MS)
2305          SE39
2306          $ = G, R
2307      N,  E = - E
2308          GOTOR(MC[- 1])
2309      N,  SUBCD(:RSE88)
2310          B + 2
2311          MC = E
2312          '010 000 000'
2313          E = - E                         " LIJSTJE 1
2314          B - 2
2315          E = MC[ - 2]
2316          SUBC(:UMOD)
2317          SUBC(:UENTIER)
2318          SUBC(:UCOS)
2319          SUBC(:USIN)
2320          SUBC(:UARCTAN)
2321          SUBC(:UEXP)
2322          SUBC(:USQRT)
2323          SUBC(:ULN)
2324          SUBC(:UCOMPOSE)
2325          SUBC(:CREADTAPE)
2326          SUBC(:CREADBACK)
2327          SUBC(:CINSRTAPE)
2328          SUBC(:CWRITETAPE)
```

```
2329          SUBCD(:CCOCT)
2330          SUBC(:UBIT)
2331          SUBC(:USHIFT)
2332          S = G                                   " LIJSTJE 2
2333          S '*' MC[ - 1]
2334          S = - G

2335                                                                  " 17.24
2336                                                                  " HESPECEUDES - 8
2337          S '*' - MC[ - 1]
2338          F = F, Z
2339      N,  F = 1, F
2340          S = F
2341          G = S
2342          S = G
2343          G = S
2344          F = F, R
2345      N,  F = - F
2346          M[B - 4] = F
2347          F = MC[ - 2]
2348          G = S                                   " LIJSTJE 3
2349          G = - S
2350      N,  F = - 1
2351          3                                       " LIJSTJE 4, PRIJZEN; GEC
2352          1                                       " RE
2353          3                                       " IM
2354          320                                     " MOD
2355          32                                      " ENTIER
2356          256                                     " COS
2357          256                                     " SIN
2358          448                                     " ARCTAN
2359          544                                     " EXP
2360          208                                     " SQRT
2361          304                                     " LN
2362          32                                      " COMPOSE
2363          80                                  " READTAPE
2364          80                                  " REEADBACK
2365          16                                  " INSRTAPE
2366          80                                  " WRITETAPE
2367          64                                      " OCT
2368          48                                      " BIT
2369          48                                      " SHIFT
2370          5                                       " AND
2371          5                                       " OR
2372          5                                       " SIGN

2373                                                                  " 17.24
2374                                                                  " HESPECEUDES - 9
2375          3                                       " HEAD
2376          3                                       " TAIL
2377          5                                       " ABS
2378          7                                       " COM
2379          S = HSPECIN[HA5]
2380      U,  S - 13, Z
2381      Y,  S = 15
2382      U,  S - 2, Z
2383      Y,  JUMP( - 104)
2384      U,  S - 5, R
2385      N,  S = 16
2386          S - 14, R
```

this is the special set !!

```
2387      Y,  HSPAN - $
2388          JUMP( - 109)
2389      U,  A = M[57], Z
2390          $ = '32 010'                    " THESE FOR INSTRUCTIONS REPLACE THE FIRST ONE OF MESRECEUDES
2391          HOP[HA5] = $
2392          $ = HFBEZET[HA5], Z
2393          JUMP( - 328)
```

```
                                                                                          " 18.0
                                                                                          " HABLOCKINT - 0
HABLOCKINT(301)
          S = HNEXTBLOCK[HA3]
          HCURRENTBLOCK[HA3] = S
          S + 3
          HNEXTBLOCK[HA3] = S
          S = - 2                               " SPACE FOR STANDARD LOCALS
          HSPLOC[HA3] = - S
          SUBC(:MT[220])                        " REVPOL := S/REVTOP + 1 ; DEZE CALL KOMT TERUG METE = - 2, WORDT GEBRUIKT OP 40
          S = M[B - 1]
          S - '301', Z                          " BEGIN BLOCK
     Y,   S = HCBH[HA3]
     Y,   S - 3, Z                              " EERSTE PROGRAMMABLOK ?
     N,   JUMP(28)
          S = HOWNCOUNTER
          PLUSS(HSPLOC[HA3])
          S - 253, P                            " L: (SPLOCMAX = 255)
     N,   JUMP(20)
          S = MT[128]                           " S = 260
          HGEN
          S = MT[127]                           " SE0
          HGEN
          S = HSPAN[HA3]
          MC = S
          S = HMAXSPAN[HA3]
          MC = S
          B + 1                                 " RUIMTE VOOR GASMETER
          S = 1
          MC = - S                              " NO ADDRESS
          MC = - S                              " NO ANON RES
          PLUSS(HCBH[HA3])                      " INTERSECTIONAL BLOK
          HMAXITH[HA3] = S
          S = '401'                             " INTERSECTIONAL BLOK
          MC = S

                                                                                          " 18.0
                                                                                          " HABLOCKINT - 1
          HBOV1
          HBOV2
          S = - 248
          JUMP(- 23)                            " NAAR L
          S = 3
          HPOWN[HA3] = S                        " HPOWN OP "NULDE" BLOCK ZETTEN
          F = -2
          HOWNCOUNTER = -G
          G - HCURRENTBLOCK[HA3]                " KOMEND VAN 11 STAAT IN F REEDS -2
          S = :HBL, Z
          SUBC(MS)
          SE39
          F * 3
          MC = G
          F = - 1
          G - HCURRENTBLOCK[HA3]
          S = :HBL, Z
          SUBC(MS)
          SE39
          S = G
          MC = G                                " K
```

```
 58          M[B - 2] + S                    " EINDWAARDE VAN K
 59      U,  S - M[B - 2], Z                 " FORSTATEMENT KLAAR?
 60      Y,  JUMP(149)
 61          G = - S
 62          S = :HNL, Z
 63          SUBC(MS)
 64          SE39
 65          F + F
 66          MC = G                          " !
 67          F = - 1
 68          G - M[B - 2]

 69                                                                  " 18.0
 70                                                                  " HABLOCKINT - 2
 71          S = :HNL, Z
 72          SUBC(MS)
 73          SE39
 74          MC = G
 75          SUBC(:MT[42])                   " K + 1; NL[K] := DL[I]; I + 1
 76          S = M[B - 1]
 77          SUBC(:MT[54])                   " DL[I + 1] := S
 78          SUBC(:MT[39])                   " K + 1; ENZ.
 79          S = M[B - 1]
 80      U,  S '*' 64, Z                     " ¬ OWN?
 81      Y,  JUMP(23)
 82          S = - 64
 83          SUBC(:MT[58])                   " DL[I] := DL[I] + S
 84          S = M[B - 1]
 85          S '*' 514, Z                    " ¬ (ARRAY OR REAL)?
 86      N,  S = 2
 87      Y,  S '*' 4, Z                      " ¬ COMPLEX?
 88      Y,  S = 1
 89          M[B - 1] = S                    " INCREMENT VOOR HOWNCOUNTER
 90          S + HOWNCOUNTER
 91      Y,  S + 1
 92          S - 257, R
 93      Y,  S = 1
 94      Y,  HPOWN[HA3] + S
 95      Y,  S = 2
 96      Y,  HOWNCOUNTER = S
 97          S = HPOWN[HA3]
 98          LUS(9)
 99          S + '400'
100          S + HOWNCOUNTER
101          SUBC(:MT[30])                   " DL[I + 1] := S
102          S = M[B - 1]

103                                                                 " 18.0
104                                                                 " HABLOCKINT - 3
105          HOWNCOUNTER + S
106          JUMP(103)
107      U,  S '*' '2000', Z                 " ¬ PROCEDURE?
108      N,  S = M[B - 2]
109      N,  SUBC(:MT[126])                  " REVPOL := S/REVTOP + 1
110      N,  JUMP(99)
111      U,  S '*' '20', Z                   " ¬ LABEL?
112      Y,  JUMP(43)
113          S = HCBH[HA3]
114          LUS(15)
115          S + 64                          " DEST UNDEFINED
```

```
        SUBC(:MT[27])                     " DL[I] + S
        S = - 1                           " NO ADDRESS
        SUBC(:MT[15])                     " DL[I + 1] := S
        JUMP(90)
        S = 1                             " K + 1; NL[K] := DL[I]; I + 1
        PLUSS(M[B - 4])
        G = - S
        S = :HNL, Z
        SUBC(MS)
        SE38
        G = - M[B - 5]
        S = :HDL, Z
        SUBC(MS)
        SE39
        DO(MC[- 1])
        S = 1
        M[B - 3] + S                      " HOOG I OP
        GOTOR(MC[- 1])
        MC = S                            " DL[M[B - 4] - 1] := S
        F = 1
        G - M[B - 4]
                                                                            " 18.0
                                                                            " HABLOCKINT - 4
        S = :HDL, Z
        SUBC(MS)
        SE38
        G = M[B - 3]
        DO(MC[- 1])
        B - 1
        GOTOR(MC[- 1])
        MC = S                            " DL[M[B - 4] - 2] + S
        F = 2
        G - M[B - 4]
        S = :HDL, Z
        SUBC(MS)
        SE39
        S = G
        M[B - 1] + S
        F = 2
        JUMP(- 18)
        S = 260
        SE0
    U,  S '*' '1400', Z               " ¬ (VAR OR ARRAY)?
    Y,  JUMP(53)
    U,  S '*' '1000', Z               " ¬ ARRAY?
    N,  JUMP(5)
    U,  S '*' 2, Z                    " ¬ REAL?
    N,  S = 2
    Y,  S '*' 4, Z                    " ¬ COMPLEX?
    Y,  S = 1
        JUMP(3)
    U,  S - '77777', P                " FIRST OF SEGMENT?
    N,  S = 2
    Y,  RUS(14), Z                    " EN ZET CONDITIE NO
        MC = S                        " STACK INCREMENT
                                                                            " 18.0
                                                                            " HABLOCKINT - 5
        S + HSPLOC[HA3]
```

```
174     Y,  $ + 1
175         $ - 257, P
176     N,  JUMP(26)
177         $ = MT[- 20]                    " $ = 20
178         HGEN
179         $ = MT[- 21]                    " SEO
180         HGEN
181         E = M[B - 5]
182         MC[1] = E
183         E = M[B - 5]
184         MC[1] = E
185         $ = M[B - 5]
186         MC[1] = $
187         $ = HSPAN[HA3]
188         M[B - 10] = $
189         $ = HMAXSPAN[HA3]
190         M[B - 9] = $
191         $ = 1
192         M[B - 7] = - $
193         M[B - 6] = - $
194         PLUS$(HCBH[HA3])
195     U,  $ - HMAXITH[HA3], P
196     Y,  HMAXITH[HA3] = $
197         $ = '401'                       " INTERSECTIONAL BLOCKBEGIN
198         MC[- 5] = $
199         HBOV1
200         HBOV2
201         $ = 2
202         HSPLOC[HA3] = $
203         $ = - MC[- 2]
204         $ '*' '1000', Z                 " ARRAY?

205                                                                 " 18.0
206                                                                 " HABLOCKINT - 6
207         G = M[B]
208     Y,  E = 2
209         $ = HCBH[HA3]
210         LUS(9)
211         $ + '400'
212         $ + HSPLOC[HA3]
213         G + HSPLOC[HA3]
214         HSPLOC[HA3] = G
215         SUBC(:MT[- 76])                 " DL[I + 1] := $
216         B - 2
217         $ = 1
218         PLUS$(M[B - 1])
219         JUMP(- 15)
220         $ = 1
221         MIN$(HREVTOP[HA3])
222         G = - $
223         $ = :HREVPOL, Z
224         SUBC(MS)
225         SE39
226         M[B - 2] = G, P
227     N,  JUMP(7)
228         $ = HCBH[HA3]
229         LUS(15)
230         $ + 64
231         SUBC(:MT[- 82])                 " DL[K] + $
232         $ = - 1
```

```
233         SUBC(:MT[- 94])                 " DL[K + 1] := S
234         JUMP(- 15)
235         B - 2
236         MA = B
237         GL1 = A
238         S = 142

239                                                                 " 18.0
240                                                                 " HABLOCKINT - 7
241         GBILL + S, F
242         SE115
243         SE34
244         G = - HREVTOP[HA3]              " REVPOL[REVTOP] := S; REVTOP + 1
245         MC = S
246         S = :HREVPOL, Z
247         SUBC(MS)
248         SE38
249         G = M[B - 3]
250         DO(MC[- 1])
251         B - 1
252         S = 1
253         HREVTOP[HA3] + S
254         GOTOR(MC[- 1])
255         A = 4                           " BLOCK EXIT
256         S = 7
257         SE18
258         S = 30                          " ANONIEME RUIMTE
259         SE1
260         F = -2
261         SUBC(:MT[51])                   " G := HBL[HCURRENTBLOCK - G]
262         HNOF = G
263         F + 3
264         MC = G
265         F = - 1
266         SUBC(:MT[46])                   " G := HBL[HCURRENTBLOCK - G]
267         S = G

268                                                                 " 18,0
269                                                                 " HABLOCKINT - 8
270         MC = G
271         M[B - 2] + S
272     U,  S - M[B - 2], Z
273     Y,  JUMP(24)
274         G = - S
275         S = :HNL, Z
276         SUBC(MS)
277         SE39
278         F + F
279         MC = G                          " STACK !
280         HREVTOP = G                     " OM TEKST 2 MAAL TE KUNNEN UITVOEREN
281         F = - 1
282         G - M[B - 2]
283         S = :HNL, Z
284         SUBC(MS)
285         SE39
286         MC = G
287         SUBC(:MT[- 158])                " K + 1; NL[K] := DL[I]; I + 1
288         S = M[B - 1]
289         SUBC(:MT[- 146])                " DL[I + 1] := S
290         S = HREVTOP, Z
```

```
291     N,  F = 0
292         B - 1
293     N,  JUMP(- 14)
294         B - 1
295         S = 1
296         PLUSS(M[B - 1])
297         JUMP(- 26)
298         G = - HCURRENTBLOCK
299         SUBC(:MT[16])
300         M[B - 2] = G

301                                                                  " 18.0
302                                                                  " HABLOCKINT - 9
303         G = - HCURRENTBLOCK
304         F + 3
305         M[B - 1] = G
306         SUBC(:MT[11])
307         G - M[B - 2], R
308     N,  F = F, Z
309         G = M[B - 1]
310     Y,  JUMP(- 7)
311         HCURRENTBLOCK = - G
312         B - 2
313         S = 174
314         GBILL + S, R
315         SE115
316         SE71
317         G - HCURRENTBLOCK              " SUBROUTINE G := MBL[HCURRENTBLOCK - G]
318         S = :MBL, Z
319         SUBC(MS)
320         SE39
321         GOTOR(MC[- 1])

322                                                                  " 18.1
323                                                                  " HATRANSREV - 0
324 HATRANSREV(447)
325         S = M[B - 5], R                " - NO INDEX?
326     N,  S = HREVTOP[HA3]
327     N,  S - 1
328     N,  M[B - 5] = S
329         F = 1
330         SUBC(:MT[254])                 " S := - (G := REVPOL[REVTOP - G]) !
331         S '*' 2, Z                     " CONST?
332     N,  JUMP(30)                       " NAAR CATEGORIE MAKEN
333         S = M[B - 4]
334     U,  S - '60310', Z                 " NEG?
335     N,  S - '71110', Z                 " NON?
336     N,  JUMP(12)
337         F = 3
338         SUBC(:MT[246])                 " !
339         F = 3
340         SUBC(:MT[250])                 " REVPOL[REVTOP - G] := S !!
341         F = 2
342         SUBC(:MT[242])                 " !
343         S '*' 2, Z                     " REAL?
344     Y,  F = 4
345     Y,  SUBC(:MT[239])                 " !
346     Y,  F = 4
347     Y,  SUBC(:MT[243])                 " !!
348         JUMP(356)                      " NAAR UNSTACK(5)
```

```
349          G = - M[B - 5]
350          SUBC(:MT[235])                  " I + 1
351          S '*' 2, Z                      " CONST?
352      N,  JUMP(10)                        " NAAR CATEGORIE MAKEN
353          S = M[B - 4]
354      U,  S '*' 8, Z                      " ¬ OPERATOR?
355      N,  S '*' '1600', Z                 " ¬ (ARITH BOOL RELATIONAL OPERATOR)?
356      Y,  JUMP(6)                         " NAAR CATEGORIE MAKEN

357                                                                  " 18.1
358                                                                  " HATRANSREV - 1
359          MA = B
360          S = GLO
361          HTELLER[MA3] = S
362          S = MT[1]
363          JUMP(402)
364          HATRANSREV[442]
365          F = 0
366          S = M[B - 5]
367          SUBC(:MT[225])                  " II
368          F = 1                           " TYPE
369          G = M[B - 5]
370          SUBC(:MT[217])                  " I + 1
371          MC = G, F
372      N,  M[B - 1] = S                    " T1 OP STACK
373          F = 2
374          SUBC(:MT[212])                  " I
375          MC = G, F
376      N,  M[B - 1] = S                    " T2 OP STACK
377          A = M[B - 1]
378      U,  A '*' '5070', Z                 " (INT REAL COMPL) EN (PROC VAR EXPR) T2
379      Y,  S = M[B - 2]
380      Y,  S '*' '5070', Z                 " IDEM T1
381      N,  JUMP(45)
382          S = - M[B - 6]
383      U,  S '*' '4300', Z                 " + - * /
384          G = S
385          S = M[B - 2]
386      N,  JUMP(7)                         " DAN NEG ENZ AFHANDELEN
387          S '*' 4, Z                      " T1 ¬ COMPLEX?
388      Y,  A '*' 4, Z                      " T2 ¬ COMPLEX?
389      N,  S = '4000'
390      N,  M[B - 6] + S                    " OP COM OP

391                                                                  " 18.1
392                                                                  " HATRANSREV - 2
393      Y,  S = '202'                       " REAL EXPR
394      N,  S = '204'
395          JUMP(215)                       " TYPE KLAAR
396          F + '60310', Z                  " NEG?
397      Y,  S '*' 7
398      Y,  JUMP(108)                       " TYPE KLAAR
399          F - '4100', Z                   " TOTHEPOWER?
400      N,  JUMP(5)
401          A '*' 4, Z                      " T2 ¬ COMPLEX?
402      N,  S = 101
403      N,  JUMP(200)                           "NAAR FOUT
404          S '*' 4, Z                      " T1 ¬ COMPLEX?
405          JUMP( - 13)
406          F - '10000', Z                  " INTEGERDIR?
```

```
407     N,  JUMP(6)
408         $ '*' 4, Z                      " T1 = COMPLEX?
409     Y,  A '*' 4, Z                      " T2 = COMPLEX?
410     Y,  $ = '202'
411     Y,  JUMP(199)                       " TYPE KLAAR
412         $ = 102
413         JUMP(190)                       " NAAR FOUT
414         $ = - M[B - 6]
415     U,  $ '*' '410', Z                  " RELATIONAL OPERATOR?
416     N,  JUMP(13)
417         $ = - M[B - 2]
418         $ '*' - A
419         $ '*' 4, Z                      " T1 OR T2 COMPLEX?
420     N,  $ = '210'                       " BOOLEAN EXPR
421     N,  JUMP(189)
422         F - '30210', P                  " EQUAL OR UNEQUAL?
423     Y,  $ = '10000'
424     Y,  M[B - 6] + $

425                                                         " 18.1
426                                                         " MATRANSREV - 3
427     Y,  $ = '210'
428     Y,  JUMP(184)                       " TYPE KLAAR
429         $ = 103
430         JUMP(175)                       " NAAR FOUT
431         $ = - M[B - 6]
432     U,  $ '*' '1010', Z                 " BOOLEAN OPERATOR?
433     N,  JUMP(10)
434         $ = '1067'
435     U,  $ '*' A, Z
436     Y,  $ '*' M[B - 2], Z
437     Y,  JUMP( - 11)
438         $ = '10'
439     U,  $ '*' A, Z
440     N,  $ '*' M[B - 2], Z
441     N,  $ = 105
442     Y,  $ = 104
443         JUMP(162)                       " NAAR FOUT
444         G = $
445         $ = M[B - 2]
446         F + '32010', Z                  " FUDES?
447     N,  JUMP(12)
448     U,  $ '*' '5620', Z                 " PROC EN - LABEL?
449     N,  $ = 107
450     N,  JUMP(155)
451         A = - M[B - 11]
452         A '*' 1, Z                      " STATSTARTADM?
453     N,  $ '*' '40', Z                   " - NONTYPE?
454     Y,  $ = M[B - 2]
455     Y,  $ '*' '30077'                   " TYPE REDDEN
456     Y,  $ + '200'                       " EXPRESSION
457     Y,  JUMP(155)                       " TYPE KLAAR
458         $ = 106

459                                                         " 18.1
460                                                         " MATRANSREV - 4
461         JUMP(146)                       " NAAR FOUT
462         F + '20000', Z                  " SWITCH DESIGNATOR?
463     N,  JUMP(4)
464         A '*' '1074', Z                 " T2 REAL OR INTEGER EN - ARRAY?
```

```
465     Y,  JUMP( - 10)
466         $ = 108
467         JUMP(140)                       " NAAR FOUT
468         F - '4000', Z                   " SUBSCRIPTION?
469     N,  JUMP(6)
470     U,  A '*' '1074', Z                 " T2 REAL OR INTEGER EN ¬ ARRAY?
471     N,  $ = 109
472     N,  JUMP(135)
473         $ '*' '30077'
474         $ + '400'
475         JUMP(139)
476         F - '4000', Z                   " SUBSCRIPTCOMMA?
477     N,  JUMP(8)
478         $ '*' '1074', Z
479     N,  $ = 112
480     N,  JUMP(127)                       " NAAR FOUT
481         A '*' '1074', Z
482     Y,  $ = '201'
483     Y,  JUMP(131)                       " NAAR TYPE KLAAR
484         $ = 111
485         JUMP(122)                       " NAAR FOUT
486         F - '4000', Z                   " PARAMETER COMMA?
487     Y,  $ = '240'
488     Y,  JUMP(126)                       " NAAR TYPE KLAAR
489         F - '30000', Z                  " ETHEN?
490     N,  JUMP(9)
491         $ '*' '1067', Z                 " BOOLEAN EN ¬ ARRAY?
492     N,  $ = 114                                                  " 18.1
493                                                                  " MATRANSREV - 5
494
495     N,  JUMP(114)                       " NAAR FOUT
496     U,  A '*' '1040', Z                 " NIET ARRAY EN NIET NON TYPE?
497     N,  JUMP(2)
498     U,  A '*' '5657', Z                 " LABEL PROCEDURE?
499     N,  JUMP(84)
500         $ = 113
501         JUMP(108)                       " NAAR FOUT
502         F + '4000', Z                   " EELSE?
503     N,  JUMP(16)
504     U,  A '*' '1040', Z                 " ¬ ARR EN ¬ NONTYPE?
505     N,  JUMP(2)
506     U,  A '*' '5657', Z                 " LABEL PROC?
507     N,  JUMP(2)
508         $ = 116
509         JUMP(100)                       " NAAR FOUT
510         $ '*' '77'
511         A '*' '77'
512         A '+' $, Z
513     Y,  $ + '200'
514     Y,  JUMP(102)
515     U,  A - 7, F
516     Y,  $ = 115
517     Y,  JUMP(92)                        " NAAR FOUT
518         A '*' 4, Z
519         JUMP( - 121)
520         F + '10000', Z                  " BECOMES
521     N,  JUMP(13)
522     U,  A '*' '1060', Z                 " ¬ NONTYPE EN ¬ LABEL EN ¬ ARRAY
523     N,  $ = 118
```

```
524     N,  JUMP(85)                        " NAAR FOUT
525         S '*' '77'
526         A '*' '77'

527                                                                  " 18.1
528                                                                  " HATRANSREV - 6
529         S '+' A, Z                      " SAME TYPE?
530     Y,  JUMP(2)
531     U,  S '*' 8, Z                      " BEIDE NIET BOOLEAN?
532     Y,  A '*' 4, Z                      " T2 NIET COMPLEX?
533     Y,  S = M[B - 2]
534     Y,  JUMP(247)                       " VIA POETSEN VAN D14 NAAR TYPE KLAAR
535         S = 117
536         JUMP(75)                        " NAAR FOUT
537         E + '4000', Z                   " MULTIPLE BECOMES?
538     N,  JUMP(42)
539     U,  S '*' 8, Z                      " T1 ¬ BOOLEAN?
540     Y,  JUMP(4)
541     U,  A '*' 8, Z                      " T1 ¬ BOOLEAN?
542     N,  JUMP(76)                        " TYPE KLAAR
543         S = 119
544         JUMP(67)                        " NAAR FOUT
545         S '+' '10000'                   " VERANDER FORMAL BIT
546         A '+' '10000'                   " IDEM
547     U,  S '*' '30074', Z                " T1 REAL OR INT FORMAL NOT BY VALUE?
548     N,  JUMP(7)
549     U,  A '*' 3, Z                      " T2 NIET REAL OF INTEGER?
550     Y,  JUMP( - 8)                      " FOUT 119
551     U,  A '*' '30000', Z                " T2 FORMAL?
552     Y,  JUMP(18)                        " NAAR S = A EERST FORMALBIT HERSTELLEN
553     U,  A '*' '40 000', Z               " ¬ FORMAL GEHAD ?
554     Y,  A '+' '40 000'
555         JUMP(15)                        " FORMAL BIT HERSTELLEN EN DAN S = A
556     U,  S '*' 1, Z                      " ¬ INTEGER?
557     Y,  JUMP(6)
558     U,  A '*' '30074', Z                " T2 REAL OR INT FORMAL
559     Y,  S '+' '40 000'
560     Y,  JUMP(18)                        " IN S FORMAL BIT HERSTELLEN EN DAN TYPE KLAAR

561                                                                  " 18.1
562                                                                  " HATRANSREV - 7
563     U,  A '*' 1, Z                      " ¬ INTEGER
564     N,  JUMP(8)                         " NAAR S = A, EERST FORMAL BIT HERSTELLEN
565         JUMP( - 21)                     " FOUT 119
566     U,  S '*' 2, Z                      " ¬ REAL?
567     Y,  JUMP(7)
568     U,  A '*' '30074', Z                " T2 FORMAL REAL OR INT
569     Y,  S '+' '40 000'
570     Y,  JUMP(10)                        " FORMAL BIT HERSTELLEN EN TYPE KLAAR
571     U,  A '*' 2, Z                      " ¬ REAL?
572     Y,  JUMP( - 28)                     " NAAR FOUT 119
573         A '+' '10000'                   " HERSTEL FORMAL BIT
574         JUMP(13)                        " NAAR S = A
575     U,  S '*' 4, Z                      " T1 ¬ COMPLEX?
576     Y,  JUMP( - 32)                     " NAAR FOUT 119
577     U,  A '*' '30073', Z                " T2 COMPLEX FORMAL?
578     Y,  JUMP( - 6)
579     U,  A '*' 4, Z                      " T2 ¬ COMPLEX
580     Y,  JUMP( - 36)
581         S '+' '10000'                   " HERSTEL FORMAL BIT
```

```
582          JUMP(38)                          " NAAR TYPE KLAAR
583          F - '10000', Z                    " GOTO?
584      N,  JUMP(5)
585      U,  A '*' '7457', Z                   " LABEL EXPRESSION?
586      N,  S = 120
587      N,  JUMP(26)                          " NAAR FOUT
588          S = A
589          JUMP(31)                          " NAAR TYPE KLAAR
590          A '*' 7, Z                        " T2 - REAL INT COMPLEX?
591      N,  S '*' 7, Z                        " T1 - REAL INT COMPLEX?
592      N,  S = 105
593      N,  JUMP(20)                          " NAAR FOUT
594          S = - M[B - 6]

595                                                                  " 18.1
596                                                                  " HATRANSREV - 8
597          S '*' '410', Z                    " RELATIONAL?
598      Y,  S = 121
599      N,  S = 122
600          JUMP(15)                          " NAAR FOUT
601          G - HREVTOP[HA3]                  " SUBROUTINE S := - (G := REVPOL[REVTOP - G]) !
602          S = :HREVPOL, Z
603          SUBC(MS)
604          SE39
605          S = - G
606          GOTOR(MC[ - 1])
607          MC = S                            " REVPOL[REVTOP - G] := S        !!
608          G - HREVTOP[HA3]
609          S = :HREVPOL, Z
610          SUBC(MS)
611          SE38
612          G = M[B - 3]
613          DO(MC[ - 1])
614          B - 1
615          GOTOR(MC[ - 1])
616          DO(MD[ - 1])                      " FOUTEN BEHANDELING
617          HFOUT[HA3] = S
618          S = :MC[- 5]
619          MA = S
620          S = 9
621          SE73
622          HBOODSCHAP
623          DO(MD[ - 1])
624          B - 2
625          F = - 1
626          S '*' - 64                        " CLEAR OPERANDS DEALT WITH
627          SUBC(:MT[- 21])                   " !!
628          JUMP(147)                         " KOMT BIJ VOLGENDE OPDRACHT TERUG

629                                                                  " 18.1
630                                                                  " HATRANSREV - 9
631          S = 3
632          HREVTOP[HA3] + S
633          F - '54210', Z                    " TO THE ROVER
634      N,  JUMP(17)
635          F = 4
636          SUBC(:MT[ - 34])                  " !
637          S '*' 2, Z                        " CONST?
638      Y,  F = 5
639      Y,  SUBC(:MT[ - 37])                  " !
```

```
640     Y,  $ '*' 1, Z                          " INTEGER?
641     Y,  F = 6
642     Y,  SUBC(:MT[ - 40])
643     Y,  $ + 2, Z                            " IS EXP = 2?
644     Y,  F = 2
645     Y,  SUBC(:MT[ - 43])
646     Y,  $ '*' 7
647     Y,  $ - 3, F                            " NIET COMPLEX
648     Y,  $ = '50310'                         " KWADRAAT
649     Y,  F = 1
650     Y,  SUBC(:MT[ - 42])                    " ||
651         JUMP(52)                            " CREATE PRIMARY PATTERN
652         G = M[B - 8], F
653     Y,  $ = M[B - 3], F
654     Y,  JUMP(6)
655         G + M[B - 3], F
656     Y,  $ = M[B - 1]
657     Y,  $ '*' M[B - 6], Z
658     Y,  $ = M[B - 2]
659     Y,  $ '*' M[B - 7], Z
660     N,  JUMP(43)                            " NAAR CREATE PRIMARY PATTERN
661         G = - M[B - 5]
662         SUBC(:MT[93])                       " CATEGORY(G); K

663                                                                 " 18.1
664                                                                 " MATRANSREV - 10
665         F = 4
666         G - HREVTOP[HA3]
667         SUBC(:MT[90])                       " CATEGORY(G); L
668         $ = - M[B - 6]                      " OPERATOR PAKKEN
669     U,  $ '*' '210', Z                      " ARITH OP?
670     N,  JUMP(75)
671     U,  $ + '24000', F                      " + OF - OF COMPLUS OF COMMIN?
672     N,  JUMP(17)
673         G = M[B - 1], Z
674     N,  $ = M[B - 2]
675     N,  $ - 3, Z
676     Y,  JUMP(28)                            " WISSEL EALSE
677         F - 3, Z
678     N,  $ = M[B - 2], Z
679     Y,  JUMP(5)                             " WISSEL IRUE
680         $ - 2, Z
681     N,  JUMP(23)                            " WISSEL EALSE
682         F + 1, Z
683     Y,  $ = M[B - 5], F
684     Y,  JUMP(20)                            " WISSEL EALSE
685         F = 2
686         SUBC(:MT[ - 82])                    " |
687         F = 2
688         SUBC(:MT[ - 78])                    " ||
689         JUMP(15)                            " WISSEL VERWERKT
690     U,  $ + '34000', F                      " TIMES OR COMTIMES
691     N,  JUMP(42)
692         $ = M[B - 1]
693         $ - 1, Z
694     Y,  JUMP(10)                            " WISSEL EALSE
695         G = M[B - 2]
696         F - 1, Z

697                                                                 " 18.1
```

```
                                                                  " HATRANSREV - 11
     Y,  JUMP( - 13)                    " WISSEL TRUE
     U,  S + 1, Z
     Y,  JUMP(5)                        " WISSEL FALSE
         S - G, P                       " ¬ (L - K) ≤ 0
     Y,  JUMP( - 17)                    " WISSEL TRUE
         S + 0, Z
     Y,  S = - M[B - 5], P
     Y,  JUMP( - 20)                    " WISSEL TRUE
         B - 2
         S = M[B - 8]                   " CREATE PRIMARY PATTERN
     U,  S '+' M[B - 3], P
         G = M[B - 4]
     N,  F - '36010', Z                 " PARAMETERCOMMA
     N,  JUMP(7)
         S = - M[B - 7]
         S '*' - M[B - 2]
         M[B - 7] = - S
         S = - M[B - 6]
         S '*' - M[B - 1]
         M[B - 6] = - S
         JUMP(4)
         S = S, P
     N,  F + '4000', Z                  " FUDES?
     Y,  F = M[B - 2]
     Y,  M[B - 7] = F
         S = - M[B - 3]
     U,  S + M[B - 8], P
     Y,  M[B - 8] = - S
         B - 5
         HOND1
         HOND2
         S = 48

                                                                  " 18.1
                                                                  " HATRANSREV - 12
         GBILL + S, P
         SE115
         MA = B
         GL1 = A
         SE34
     U,  S + '44000', P                 " DIV OF COMRIV?
     Y,  S = M[B - 1]
     Y,  S - 1, P
     N,  JUMP( - 33)                    " WISSEL FALSE
         G = M[B-2],Z
     Y,  JUMP( - 55)                    " WISSEL TRUE
         S - 2, Z
     Y,  JUMP(-37)                              "WISSEL FALSE
         F - 3, Z
     Y,  S = M[B - 5], P
     N,  JUMP( - 60)                    " WISSEL TRUE
         JUMP( - 41)                    " WISSEL FALSE
     U,  S + '71110', Z                 " NON?
     Y,  JUMP( - 43)
     U,  S '*' '410', Z                 " RELATIONAL?
     N,  S '*' '1010', Z                " BOOLEAN OP?
     N,  JUMP( - 46)                    " WISSEL FALSE
         S = M[B-2]
         S -1 ,P
```

```
757     N,  F = 4
758     N,  SUBC(:MT[ - 150])                   " I
759     N,  S '*' 2, Z                          " CONST?
760     N,  JUMP( - 72)                         " WISSEL IRUE
761         JUMP( - 53)                         " WISSEL FALSE
762         MC = G                              " SUBROUTINE CATEGORY
763         SUBC(:MT[ - 154])                   " I + 1
764     U,  S '*' 2, Z                          " CONST

765                                                                  " 18.1
766                                                                  " HATRANSREV - 13
767     Y,  F = 0
768     Y,  JUMP(14)
769         S + '104', Z                        " IDENT NE?
770         F = 1
771         G + M[B - 1]
772         SUBC(:MT[ - 161])                   " I + 1
773     N,  JUMP(4)
774         S '*' 4, Z                          " COMPLEX?
775     Y,  F = 1
776     N,  F = 0
777         JUMP(5)
778         S = S, R
779     Y,  S = G
780         S '*' 4, Z                          " COMPLEX?
781     Y,  F = 3
782     N,  F = 2
783         S = MC[ - 2]
784         M[B - 1] = G
785         GOTOR(S)
786         S = M[B - 4]
787         F = - 2
788         SUBC(:MT[- 172])                    " II ; LAAT IN G THREEUNDERTOP ACHTER
789         JUMP(- 151)
790         GLO = S
791         SE33
792         HACONEXPR
793         S = HTELLER[HA3]                    " HIER KOMT HACONEXPR TERUG
794         GLO = S
795         JUMP(- 65)
796         S '*' -'40 000'                     " POETS D14,-FORMALGEHAD
797         JUMP(- 165)                         " NAAR TYPE KLAAR

798                                                                  " 18.2
799                                                                  " HATRANSRS - 0
800 HATRANSRS(191)
801         S = HPRECSYM[HA3]
802     U,  S - 8, R
803     N,  JUMP(156)
804         LUS(1)                              " S := 2 * CIN
805         MC = S
806         G = - S
807         S = :HDL, Z
808         SUBC(MS)
809         SE39
810         MC = G, R                           " DL[2 * CIN] IND DECLARED?
811     Y,  JUMP(18)
812         F + 1, Z                            " NOT DECLARED EN NOG NIET GECONSTATEERD?
813     Y,  JUMP(3)
814         B - 2
```

```
815          SE33
816          HAZOEKSPOOR
817          G = - M[B - 2]
818          $ = :HDL, Z
819          SUBC(MS)
820          SE38
821          F = - 2                          " NOT DECLARED, MAAR REEDS GECONSTATEERD
822          DO(MC[ - 1])
823          $ = 125
824          HFOUT[HA3] = $
825          $ = :MC[ - 2]
826          MA = $
827          $ = 9
828          SE73
829          HBOODSCHAR
830          $ = G
831     U,   $ '*' '15600', Z                 " NON FORMAL PROCEDURE?
832     N,   $ '*' '10057', Z                 " NON FORMAL LABEL?

833                                                                  " 18.2
834                                                                  " HATRANSPS - 1
835     Y,   $ = M[B - 2]
836     Y,   RUS(1)
837     Y,   JUMP(8)
838          $ = G
839          $ '*' '11000' ,Z                      " -FORMAL ARRAY?
840          SUBC(:MT[36])
841          RUS(9)
842     Y,   $ - HCBH[HA3] ,Z
843          $ = G
844     Y,   $ '*' '777'
845     Y,   $ + '73000'                      " MAAK MA - ADDRES
846          SUBC(:MT[104])
847          JUMP(99)
848          SUBC(:MT[102])
849          $ = M[B - 1]
850          $ '+' '10000'
851          $ '*' '30000', Z                 " FORMAL NOT BY VALUE?
852     Y,   $ = '204'                        " IDENT F
853     N,   $ = '104'                        " IDENT NF
854          SUBC(:MT[96])
855          $ = M[B - 1]
856     U,   $ '*' '5620', Z                  " PROCEDURE AND - LABEL
857     N,   JUMP(12)
858          G = HNEXTDEL[HA3]
859          F + 6242, Z                      " ROUND OPEN
860     N,   F - 10, Z                        " BECOMES
861     Y,   JUMP(8)
862          $ = HREVTOP[HA3]
863          $ - 1

864                                                                  " 18.2
865                                                                  " HATRANSPS - 2
866          SUBC(:MT[86])
867          $ = M[B - 1]
868          SUBC(:MT[84])
869          $ = '32010'                      " EUDES
870          SUBC(:MT[82])
871          $ = M[B - 1]
872     U,   $ '*' '60', Z                    " REAL, INTEGER, COMPLEX, BOOLEAN?
```

```
873      N,  JUMP(50)
874      U,  S '*' '15600', Z                    " NON FORMAL PROCEDURE
875      Y,  JUMP(52)
876          S '+' '10000'
877          S '*' '30000' ,Z                          "FORMAL?
878          JUMP(7)
879          F = - 1
880          G - M[B - 3]
881          S = :HDL, Z
882          SUBC(MS)
883          SE39
884          S = G
885          GOTOR(MC[-1])
886          SUBC(:MT[-8])
887      Y,  S = M[B-1]
888      Y,  JUMP(29)
889          RUS(9)
890          S '*' 63
891          G = - M[B - 2]
892          M[B - 2] = S                        " STACK(P)
893          F + 108, P
894      N,  JUMP( - 2)
895          F - 108
896          S = - G
897          RUS(1)                              " S := REST(CIN, 54)
898          F = :MC
899          S - 27
900          B = S, P
901          A = 1
902          S = + 0
903                                              " 18.2
904                                              " MATRANSPS - 3
905       Y, LCSA(B)
906      N,  B = -B
907       N, RCSA(B)
908          B = :MG
909          M[B - 1] = A
910          MC = S
911          DO(MD[ - 1])
912          MBOV1
913          MBOV2
914          MA = B
915          GL1 = A
916          S = 36
917          GBILL + S, P
918          SE115
919          SE34
920          S '*' '6600' ,Z                           "ARRAY?
921      N,  S = G
922      N,  RUS(9)
923      N,  S '*' 63
924      N,  S - 1
925          M[B - 2] = - S
926          B - 1
927          F = + 0
928          MC = F
929          JUMP( - 18)
930          RUS(15)                             " BLOKHOOGTE
931          S '*' 63
```

```
932          M[B - 2] = - S
933          S = MNEXTDEL[MA3]
934          S + 6232, Z                    " BECOMES
935      N,  JUMP( - 10)
936          S = - M[B - 1]

937                                                                  " 18.2
938                                                                  " MATRANSPS - 4
939      U,  S '*' 4, Z                     " COMPLEX ?
940          RUS(21)
941          LUS(2)                         " - 4 * NOF
942      Y,  F = :MS[245]
943      N,  F = :MS[247]
944          S = - M[B - 2]
945          S + 1                          " NU P VAN FICTIOUS BLOCK
946          LUS(9)
947          S + G
948          F = 3
949          G - HREVTOP[MA3]
950          SUBC(:MT[7])                   " REVPOL[- G] := S; REVTOP + 1 ; S := 1
951          HREVTOP - S
952          JUMP(- 25)
953          S = M[B - 1]                   " DL[2 * CIN]
954      U,  S '*' '5620', Z                " PROCEDURE AND ¬ LABEL
955      Y,  S '*' '77777'                  " CLEAR KOPBITS
956          JUMP(- 103)
957          G = - HREVTOP[MA3]             " SUBROUTINE REVPOL[REVTOP] := S; REVTOP + 1
958          MC = S
959          S = :HREVPOL, Z
960          SUBC(MS)
961          SE38
962          G = M[B - 3]
963          DO(MC[ - 1])
964          B - 1
965          S = 1
966          HREVTOP[MA3] + S
967          GOTOR(MC[ - 1])
968          S = S, P
969      N,  JUMP(25)
970      U,  S - 2, Z                       " REAL CONSTANT ?

971                                                                  " 18.2
972                                                                  " MATRANSPS - 5
973      Y,  F = 2
974      N,  F = 1
975          G + HREVTOP[MA3]
976          HREVTOP[MA3] = G
977      U,  S - 4, Z                       " IBUE?
978      Y,  S = 8
979          S + '200'
980          SUBC(:MT[ - 22])
981          S = HPRECSYM[MA3]
982          S - 1, Z
983      N,  JUMP(7)
984          F = 2
985          G - HREVTOP[MA3]
986          S = :HREVPOL, Z
987          SUBC(MS)
988          SE39
989          F = F, Z
```

```
 990      Y,  $ = '202'                          " NULL
 991      N,  $ = '102'                          " CONSTANT
 992          SUBC(:NT( - 34))
 993          $ = 1
 994          $ = - '77777'
 995          MC = - $
 996          JUMP( - 66)
 997          $ = HNEXTDEL
 998          $ + 618, R
 999      Y,  $ = HREVTOP, Z
1000      Y,  B + 3
1001          JUMP(- 84)

1002                                                                  " 18.3
1003                                                                  " HARUND - 0
1004 HARUND(106)   read until next delimiter (of pass 2)
1005          $ = HFUTSYM[HA3], R
1006      N,  JUMP(25)
1007          HPRECSYM[HA3] = $
1008      U,  $ - 2, R                           " ≥ 3?
1009      Y,  JUMP(9)
1010          SUBC(:MT[38])                      " $ := G := TEXTPASS2[WIJZER]; WIJZER + 1 |
1011          SUBC(:MT[45])                      " REVPOL[REVTOP] := $ ||
1012          $ = HPRECSYM[HA3]
1013          $ - 2, Z
1014          SUBC(:MT[34])                      " |
1015          B = - 1
1016          G - HREVTOP
1017      Y,  SUBC(:MT[40])                      " || + 1
1018          JUMP(11)
1019      U,  $ - 8, R                           " > 8
1020      N,  JUMP(6)
1021          LUS(1)
1022          RUS(1)
1023          HCIN[HA3] = $
1024          $ = HREGFUTID[HA3]
1025          HREGLASTID[HA3] = $
1026          JUMP(3)
1027          $ - 6
1028          $ = - $
1029          SUBC(:MT[27])                      " ||
1030          SUBC(:MT[35])                      " |||
1031          JUMP(2)
1032          G = HNEXTDEL[HA3]
1033          HPRECSYM[HA3] = G
1034          HNEXTDEL[HA3] = $
1035          RUS(9)
1036          HPRIORITY[HA3] = - $

1037                                                                  " 18.3
1038                                                                  " HARUND - 1
1039          $ = HRANGFUT[HA3]
1040          HRANGDEL[HA3] = $
1041          $ = HREGELNR[HA3]
1042          HREGELDEL[HA3] = $
1043          SUBC(:MT[24])                      " |||
1044          HFUTSYM[HA3] = $
1045          $ = 16
1046          GBILL + $, R
1047          $E115
```

```
1048          MA = B
1049          GL1 = A
1050          SE34
1051          G = - HWIJZER                    " ! SUBROUTINE
1052          $ = :HTEXTPASS2, Z
1053          SUBC(MS)
1054          SE39
1055          $ = 1
1056          HWIJZER + $
1057          $ = G
1058          GOTOR(MC[- 1])
1059          G = - HREVTOP[HA3]               " !! SUBROUTINE
1060          MC = $
1061          $ = :HREVPOL, Z
1062          SUBC(MS)
1063          SE38
1064          G = M[B - 3]
1065          DO(MC[- 1])
1066          B - 1
1067          GOTOR(MC[- 1])
1068          SUBC(:MT[- 18])                  " SUBROUTINE !!! AANROEP !
1069      U,  S + 7799, Z                      " NLCR?
1070      N,  JUMP(26)

1071                                                                  " 18.3
1072                                                                  " HARUND = 2
1073          SUBC(:MT[- 21])                  " !
1074          MC = $
1075          G = - HOBTOP
1076          MC = - G
1077          JUMP(2)                          " VOLGENDE TWEE OPDRACHTEN ZIJN OVERBODIG
1078          MC = A
1079          DO(MD[- 1])
1080          $ = HREGELNR[HA3]
1081          $ + 1
1082          MC = $
1083      U,  S - M[B - 3], R
1084      Y,  B - 2
1085      Y,  JUMP(8)
1086          G = - $
1087          $ = :HRL, Z
1088          SUBC(MS)
1089          SE38
1090          F = - 2
1091          DO(MC[- 1])
1092          $ = MC[- 1]
1093          JUMP(- 13)
1094          $ = MC[- 1]
1095          HREGELNR[HA3] = $
1096          $ = 0
1097          HRANGFUT[HA3] = $
1098          JUMP(- 29)
1099      U,  S - 8, R
1100      N,  JUMP(5)
1101          G = HNEXTDEL[HA3]
1102          F + 7782, Z                      " STRING OPEN?
1103      Y,  JUMP(2)
1104          G = HREGELNR[HA3]

1105                                                                  " 18.3
```

```
1106                                                                    " HARUND - 3
1107          HREGFUTID[HA3] = G
1108      U,  S + 7773, Z                       " LIBRARYHAAK ?
1109      Y,  S = HDRUM[HA3]
1110      Y,  HDRUM[HA3] = - S
1111      Y,  JUMP(- 40)
1112          G = S, R
1113      N,  S = 1
1114      N,  HRANGFUT[HA3] + S
1115          S = G
1116          GOTOR(MC[- 1])

1117                                                                    " 18.4
1118                                                                    " HECHECK - 0
1119  HECHECK(58)
1120          F = 0
1121          MC = F
1122          S = M[B - 4]
1123          MC = S
1124          SUBC(:MT[43])
1125          M[B - 3] = S
1126          LCS(1), R                       " - LEFTHAND?
1127      N,  S = 1
1128      N,  M[B - 2] + S
1129          S = 3
1130          RLUSS(M[B - 1])
1131      U,  S - HREVTOP, R
1132      Y,  JUMP(4)
1133          SUBC(:MT[35])
1134          S - '26010', Z                  " MULTIPLE BECOMES?
1135      Y,  S = M[B - 1]
1136      Y,  JUMP(- 13)
1137          S = M[B - 3]
1138      U,  S '*' 7, Z                      " BOOLEAN?
1139      Y,  JUMP(24)
1140          S '+' '50000'
1141      U,  S '*' '40000', Z                " FORMAL GEHAD?
1142      N,  S '*' '30000', Z                " FORMAL BY NAME?
1143      N,  JUMP(20)
1144          S = M[B - 3]
1145          S '+' '10000'
1146      U,  S '*' '50004', Z                " FORMAL ARITHMETIC AND NOT FORMAL GEHAD
1147      Y,  S = '1445'                      " E = :STAT, R
1148      N,  S = '1446'                      " E = :STAT, Z
1149          RCS(10)
1150          S + M[B - 2]
1151          HGEN
1152      Y,  S = MT[22]
1153      Y,  JUMP(7)

1154                                                                    " 18.4
1155                                                                    " HECHECK - 1
1156          S = - M[B - 3]
1157      U,  S '*' 4, Z                      " COMPLEX?
1158      Y,  S = MT[20]                      " SE87
1159      Y,  JUMP(3)
1160          S '*' 2, Z                      " REAL?
1161      Y,  S = MT[15]                      " SE9
1162      N,  S = MT[15]                      " SE8
1163          HGEN
```

```
1164          S = 49
1165          HGASMETER[HA3] + S
1166          B - 3
1167          MA = B
1168          GL1 = A
1169          SE34
1170          S - 1 '
1171          G = - S
1172          S = :HREVPOL, Z
1173          SUBC(MS)
1174          SE39
1175          S = G
1176          GOTOR(MC! - 1])
1177          DOS(RSE9)                          " SE7 EN SE9
1178          DOS(RSE8)
1179          DOS(RSE87)

1180                                                                  " 18.5
1181                                                                  " HELABVAL - 00
1182 HELABVAL(76)
1183          MC = S                             " IN S STAAT REVPOL[TOP - 1 ] POSITIEF
1184          G = - M[B - 2]
1185          S = :HREVPOL, Z
1186          SUBC(MS)
1187          SE39
1188          E - '204', R                       " NIET IDENTIFIER?
1189      Y,  JUMR(52)
1190          E = 2
1191          G - M[B - 2]
1192          S = :HREVPOL, Z
1193          SUBC(MS)
1194          SE39
1195          S = M[B - 1]
1196          S '*' '10000', Z                   " FORMAL?
1197      N,  JUMR(48)
1198          E + E
1199          E + 1
1200          MC = G
1201          S = HRESP
1202          S - 4, R
1203      N,  S = 2
1204      N,  HRESP = S
1205          S = MT[47]                         " JUMR(1)
1206          HGEN
1207          G = - M[B - 1]
1208          S = :HDL, Z
1209          SUBC(MS)
1210          SE39
1211          S = M[B - 2]
1212          S '*' 64, Z                        " DEST DEFINED
1213      N,  S = G
1214      N,  JUMR(7)

1215                                                                  " 18.5
1216                                                                  " HELABVAL - 1
1217          E = - E
1218          S = :HOBTEXT, Z
1219          SUBC(MS)
1220          S = A
1221          DO(MD[- 1])
```

```
1222          HGEN
1223          JUMP(8)
1224          HGEN
1225          G = - M[B - 1]
1226          S = :HDL, Z
1227          SUBC(MS)
1228          SE38
1229          F = - 1
1230          G + HOSTOP
1231          DO(MC[- 1])
1232          S = MT[23]                        " S = MT[- 2]
1233          HGEN
1234          S = MT[22]                        " GL0 = S
1235          HGEN
1236          S = MC[- 2]
1237          RUS(15)
1238          S + MT[19]                        " S = MD[0]
1239          HGEN
1240          S = MT[18]                        " GL1 = S
1241          HGEN
1242          S = 13
1243          HGASMETER + S
1244          B - 1
1245          MA = B
1246          GL1 = A
1247          SE34
1248          S = HASIS

1249                                                          " 18.5
1250                                                          " HELABVAL - 2
1251          S + HSPAN
1252      U,  S - HMAXITH, P
1253      Y,  HMAXITH = S
1254          S = MT[7]                         " DOS(MO[- 256])
1255          S + G
1256          JUMP(-14)
1257          JUMP(1)
1258          S = MT[- 2]
1259          GL0 = S
1260          S =  MD[0]
1261          GL1 = S
1262          DOS(MO[- 256])

1263                                                          " 18.6
1264                                                          " HETRCON - 0
1265 HETRCON(62)    treat constant
1266          F = 2
1267          G - M[B - 2]
1268          SUBC(:MT[50])
1269          MC = G
1270          F = 1
1271          SUBC(:MT[46])
1272          F - '202', Z                      " REAL CONST.?
1273      N,  S = HFBEZET
1274      Y,  S = HFBEZET, Z
1275      Y,  S + 1
1276      U,  S - 1, P
1277      N,  S + 1
1278      N,  HFBEZET = S
1279          F = F, Z                          " REAL CONSTANT ?
```

```
1280      N,  JUMP(10)
1281          S = HRESP
1282          S - 5, P
1283      N,  S = 2
1284      N,  HRESP = S
1285          S = MT[37]                          " JUMP(2)
1286          HGEN
1287          E = 3, P                            " EN ZET CONDITIE YES
1288          SUBC(:MT[29])
1289          S = G
1290          JUMP(11)
1291          S = M[B - 1], P
1292      N,  JUMP(4)
1293          S - '77777', P
1294      N,  S = MT[32]                          " E + 0
1295      N,  S + MC[ - 1]
1296      N,  JUMP(10)
1297          S = HRESP

1298                                                                  " 18.6
1299                                                                  " HETRCON - 1
1300          S - 4, P
1301      N,  S = 2
1302      N,  HRESP = S
1303          S = MT[22], P                       " JUMP(1) EN MAAK UND. NO.
1304          HGEN
1305          S = MC[ - 1]
1306          HGEN
1307      Y,  S = MT[19]                          " E + MT[ - 3]
1308      N,  S = MT[19]                          " G + MT[ - 2]
1309          G = S
1310          S = M[B - 1]
1311          LUS(17)
1312          S + G
1313          HGEN
1314          B - 2
1315          S = 21
1316          HGASMETER + S
1317          MA = B
1318          GL1 = A
1319          SE34
1320          G - M[B - 4]                        " SUBROUTINE
1321          S = :HREVPOL, Z
1322          SUBC(MS)
1323          SE39
1324          GOTOR(MC[- 1])
1325          JUMP(2)
1326          JUMP(1)
1327          E + MT[ - 3]
1328          G + MT[ - 2]
1329          E + 0

1330                                                                  " 18.7
1331                                                                  " HECRESUB - 0
1332  HECRESUB(28)
1333          E = 1
1334          G - M[B - 1]
1335          S = :HREVPOL, Z
1336          SUBC(MS)
1337          SE39
```

```
1338          S = - G
1339          S '*' 2, Z                        " REAL?
1340      Y,  S = MT[16]                        " U,     A = M[57], Z
1341      Y,  SUBC(:HGENERATE)
1342      Y,  S = MT[15]                        " N,     SUBCD(:RSE88)
1343      Y,  SUBC(:HGENERATE)
1344          S = 49
1345          HGASMETER + S
1346          S = HSIGCOR[HA5], B
1347      Y,  S = MT[11]                        " MC = - G
1348      N,  S = MT[11]                        " MC = G
1349          E = 1
1350          HANOGEN
1351          HSIGCOR[HA5] = B
1352          S = 0
1353          HFBEZET[HA5] = S
1354          MA = B
1355          GL1 = A
1356          SE34
1357      U,  A = M[57], Z
1358      N,  SUBCD(:RSE88)
1359          MC = - G
1360          MC = G

1361                                                                  " 18.8
1362                                                                  " HEARVAL = 0
1363  HEARVAL(123)
1364          S = :HREVPOL, Z
1365          G = - M[B - 1]
1366          SUBC(MS)
1367          SE39
1368          S = G
1369          MC = S                            " GEBRUIKT OP 23
1370      U,  S '*' 6, Z                        " ¬ (ID OR CON)?
1371      Y,  JUMP(113)
1372          S - '202', Z                      " NULL ?
1373      Y,  S = M[B - 3], B                   " ¬( STOR OF IS)
1374      Y,  S = - HOP[HA5]
1375      Y,  S '*' '410', Z                    " RELATION ?
1376     Y,   JUMP(108)
1377          S = HFBEZET[HA5], Z
1378      N,  SUBC(:HBERGE)
1379      Y,  S = HCBEZET[HA5], B
1380      N,  JUMP(9)
1381          S = HCONCOR[HA5], B
1382      Y,  S = MT[64]                        " S = T
1383      N,  S = MT[64]                        " S = - T
1384          HGEN
1385          S = MT[- 17]                      " MC = S
1386          E = 1
1387          HANOGEN
1388          HCBEZET[HA5] = - B
1389          HCONCOR[HA5] = B
1390          S = - M[B - 1]
1391      U,  S '*' 2, Z                        " CON?
1392      N,  JUMP(9)
1393          S = M[B - 2]

1394                                                                  " 18.8
1395                                                                  " HEARVAL = 1
```

```
1396          MC = $
1397          $ = 32                                  " OP = "="
1398          MC = $
1399          $ = GL0
1400          HTELLER = $
1401          $ = MT[ 1]
1402          JUMP(79)
1403          HEARVAL[119]
1404          E = 1
1405          G - M[B - 2]
1406          $ = :HREVPOL, Z
1407          SUBC(MS)
1408          SE39
1409          MC = G
1410          E = 2
1411          G - M[B - 3]
1412          $ = :HREVPOL, Z
1413          SUBC(MS)
1414          SE39
1415          MC = G
1416          $ = M[B - 3]
1417          $ - '104', Z                            " IDNF?
1418      N,  JUMP(33)
1419          $ = - M[B - 2]
1420          $ '*' 1, Z                              " INTEGER?
1421      Y,  $ = '6261'                              " G = DYN
1422      N,  $ = '6260'                              " E = DYN
1423          RCS(12)
1424          $ + M[B - 1]
1425          HGEN
1426      Y,  $ = 1
1427      Y,  JUMP(13)

1428                                                                  " 18.8
1429                                                                  " HEARVAL - 2
1430          $ = - M[B - 2]
1431          $ '*' 2, Z                              " REAL
1432      Y,  $ = 2
1433      Y,  JUMP(9)
1434          $ = MT[18]                              " MC = E
1435          E = 2
1436          HANOGEN
1437          $ = '313'                               " E = DYN
1438          RCS(8)
1439          $ + M[B - 1]
1440          $ + 2
1441          HGEN
1442          $ = 3
1443          HFBEZET[HA5] = $
1444      Y,  $ = 3                                   " KOSTEN REAL EN INTEGER
1445      N,  $ = 9                                   " KOSTEN COMPLEX
1446          HGASMETER + $
1447          B - 3
1448          MA = B
1449          GL1 = A
1450          SE34
1451          $ = T
1452          $ = - T
1453          MC = E
1454          $ = HRESP
```

```
1455          $ - 5, R
1456      N,  $ = 2
1457      N,  HRESP = $
1458          $ = - M[B - 2]
1459          $ '*' 4, Z                      " COMPLEX?
1460      Y,  $ = MT[20]                      " F = 0
1461      Y,  SUBC(:HGENERATE)

1462                                                                  " 18.8
1463                                                                  " HEARVAL - 3
1464      Y,  $ = MT[- 10]                    " MC = F
1465      Y,  F = 2
1466      Y,  SUBC(:HGENERATE[44])
1467          $ = '137'                       " DO$(DYN)
1468          RCS(10)
1469          $ + M[B - 1]
1470          HGEN
1471      Y,  $ = MT[12]                      " DO(ECV)
1472      N,  $ = MT[12]                      " DO(ERV)
1473          HGEN
1474      Y,  $ = 3
1475      N,  $ = 2
1476          HFBEZET[HA5] = $
1477          $ = HSPAN
1478          $ + HA$IS
1479      U,  $ - HMAXSPAN, R
1480      Y,  HMAXSPAN = $
1481          $ = 12                          " KOSTEN FORMAL
1482          JUMP(- 35)
1483          F = 0
1484          DO(ECV)
1485          DO(ERV)
1486          GL0 = $
1487          SE33
1488          HETRCON                                 "KOMT TERUG OP VOLGENDE OPDRACHT
1489          $ = HTELLER
1490          GL0 = $
1491          B - 1
1492          JUMP(-43)

1493                                                                  " 18.9
1494                                                                  " HELEETVAL - 0
1495  HELEETVAL(119)
1496          G = - M[B - 1]
1497          $ = :HREVPOL, Z
1498          SUBC(M$)
1499          SE39
1500          $ = - G
1501          $ '*' 4, Z                      " IDNE OR IDE?
1502      N,  JUMP(67)
1503          $ = HFBEZET[HA5], Z
1504      N,  SUBC(:HBERGE)
1505      Y,  $ = HCBEZET[HA5], R
1506      N,  JUMP(9)
1507          $ = HCONCOR[HA5], R
1508      Y,  $ = MT[64]                      " $ = T
1509      N,  $ = MT[64]                      " $ = - T
1510          HGEN
1511          $ = MT[63]                      " MC = $
1512          F = 1
```

```
1513          HANOGEN
1514          HCBEZET[HA5] = - B
1515          HCONCOR[HA5] = B
1516          E = 2
1517          G - M[B - 1]
1518          $ = :HREVPOL, Z
1519          SUBC(MS)
1520          SE39
1521          MC = G
1522          E = 1
1523          G - M[B - 2]
1524          $ = :HREVPOL, Z
1525          SUBC(MS)
1526          SE39
1527          $ = G

1528                                                                  " 18.9
1529                                                                  " HELEETVAL - 1
1530          $ '+' '10000'
1531     U,   $ '*' '30000', Z                  " FORMAL BY NAME?
1532     N,   JUMP(49)
1533          $ '*' 4, Z                        " - COMPLEX?
1534     Y,   JUMP(9)
1535          $ = '1260'                        " $ = DYN
1536          LUS(15)
1537          $ + M[B - 1]
1538          $ + 1
1539          HGEN
1540          $ = MT[37]                        " U,    $ '*' 256, Z
1541          HGEN
1542          $ = MT[36]                        " Y,    SUBCD(:RSE57[6])
1543          HGEN
1544          $ = HRESP
1545          $ - 3, R
1546     N,   $ = 2
1547     N,   HRESP = $
1548          $ = MT[67]                        " DOS(M0[- 256])
1549          $ + MC[ - 1]
1550          HGEN
1551          $ = MT[28]                        " DO(FLV)
1552          E = 2
1553          HANOGEN
1554          $ = HSPAN
1555          $ + HASIS
1556     U,   $ - HMAXSPAN, R
1557     Y,   HMAXSPAN = $
1558          E = 1
1559          G - M[B - 2]
1560          $ = :HREVPOL, Z
1561          SUBC(MS)

1562                                                                  " 18.9
1563                                                                  " HELEETVAL - 2
1564          SE38
1565          E = 1
1566          G - M[B - 4]
1567          $ = :HREVPOL, Z
1568          SUBC(MS)
1569          SE39
1570          G + MT[12]                        " LEFTHAND BIJ TELLEN
```

```
1571          DO(MC[ - 1])
1572          S = 25
1573          HGASMETER + S
1574          MA = B
1575          GL1 = A
1576          SE34
1577          S = T
1578          S = - T
1579          MC = S
1580      U,  S '*' 256, Z
1581      Y,  SUBCD(:RSE57[6])
1582          DO(ELV)
1583          '200000000'
1584          S '*' 4, Z                        " ¬ COMPLEX?
1585      Y,  B - 1
1586      Y,  JUMR(- 13)
1587          G = - M[B - 3]
1588          S = :HREVPOL, Z
1589          SUBC(MS)
1590          SE39
1591          E - '22010', Z
1592      Y,  S = M[B - 4]
1593      Y,  S + 1, Z                          " STOR ?
1594      Y,  JUMR(- 10)
1595          S = '1620'                        " S = :DYN

1596                                                                  " 18.9
1597                                                                  " HELEETVAL - 3
1598          LUS(15)
1599          S + MC[ - 1]
1600          HGEN
1601          S = MT[ - 21]                     " MC = S
1602          HGEN
1603          S = HRESP
1604          S - 4, R
1605      N,  S = 2
1606      N,  HRESP = S
1607          S = MT[9]                         " JUMR(1)
1608          HGEN
1609          S = MT[8]                         " SE53
1610          HGEN
1611          S = MT[7]                         " S = MT[ - 2]
1612          HGEN
1613          S = MT[ - 33]                     " MC = S
1614          E = 2
1615          HANOGEN
1616          JUMR( - 55)
1617          JUMR(1)
1618          SE53
1619          S = MT[ - 2]
1620          DOS(MC[- 256])

1621                                                                  " 18.10
1622                                                                  " HEBOVAL - 0
1623  HEBOVAL(80)
1624          G = - M[B - 1]
1625          S = :HREVPOL, Z
1626          SUBC(MS)
1627          SE39
1628          S = G, R                          " GEBRUIKT OP 70 DAAROM DE R
```

```
1629      U,  S'*'6, Z                        " ¬ (ID OR CON)?
1630      Y,  JUMP(28)
1631          MC = S                          " GEBRUIKT OP 16
1632          S = HFBEZET[HA5], Z
1633      N,  SUBC(:HBERGE)
1634      Y,  S = HCBEZET[HA5], R
1635      N,  JUMP(8)
1636          S = HCONCOR[HA5], R
1637      Y,  S = MT[24]                      " S = T
1638      N,  S = MT[24]                      " S = - T
1639          HGEN
1640          S = MT[- 10]                    " MC = S
1641          F = 1
1642          HANOGEN
1643          HCONCOR[HA5] = B
1644          HCBEZET[HA5] = B
1645          F = 2
1646          G = M[B - 2]
1647          S = :HREVPOL, Z
1648          SUBC(MS)
1649          SE39
1650          S = - MC[- 1]
1651          S '*' 2, Z                      " CONST?
1652      N,  JUMP(13)
1653          S = G, R
1654      Y,  S = MT[9]                       " S = 1, R
1655      N,  S = MT[9]                       " S = - 1, R

1656                                                          " 18.10
1657                                                          " HEBOVAL - 1
1658          HGEN
1659          S = 4
1660          HGASMETER + S
1661          MA = B
1662          GL1 = A
1663          SE34
1664          S = T
1665          S = - T
1666          S = 1, R
1667          S = - 1, R
1668          MC = G                          " STACK REVPOL[TOP - 2]
1669          F = 1
1670          G = M[B - 2]
1671          S = :HREVPOL, Z
1672          SUBC(MS)
1673          SE39
1674          S = G
1675          S '+' '10000'
1676          S '*' '30000', Z                " FORMAL BY NAME?
1677      N,  S = '1264'                      " S = DYN, R
1678      N,  LUS(15)
1679      N,  S + MC[- 1]
1680      N,  JUMP(- 23)
1681          S = HRESP
1682          S - 3, R
1683      N,  S = 2
1684      N,  HRESP = S
1685          S = '1377'                      " DOS(DYN)
1686          RCS(10)
1687          S + MC[- 1]
```

```
1688          HGEN
1689          $ = MT[15]                          " DO(ERV)

1690                                                                  " 18.10
1691                                                                  " HEBOVAL - 2
1692          HGEN
1693          G = - M[B - 2], R
1694      N,  $ = :HREVPOL, Z
1695      N,  SUBC(MS)
1696      N,  SUBCD(:R3E39)
1697          E - '22010', Z                      " BECOMES?
1698      N,  $ = MT[- 67]                        " S = G, R
1699      N,  SUBC(:HGENERATE)
1700      Y,  HCBEZET[HA5] = - B
1701          $ = HSPAN
1702          $ + HA$IS
1703      U,  $ - HMAXSPAN, R
1704      Y,  HMAXSPAN = $
1705          $ = 12
1706          JUMP(- 45)
1707          DO(ERV)

1708                                                                  " 18.11
1709                                                                  " HASTATCOL - 0
1710 HASTATCOL(221)
1711          $ = M[B - 1]
1712      U,  $ - '501', Z                        " STHEN?
1713      N,  JUMP(11)
1714          $ = HRESP[HA3]
1715          $ - 5, R
1716      N,  $ = 2
1717      N,  HRESP[HA3] = $
1718          $ = MT[35]                          " JUMP(3)
1719          HGEN
1720          $ = '5023'                          " N, JUMP(:STAT)
1721          SUBC(:MT[170])
1722          $ = MC[- 1]
1723          SUBC(:HRESTIT)
1724          $ = M[B - 1]
1725      U,  $ - '601', Z                        " SELSE?
1726      N,  JUMP(5)
1727          $ = - M[B - 3]
1728          SUBC(:HRESTIT[2])
1729          $ = '5020', Z                       " JUMP(:STAT) "ZET CONDITIE N"
1730          SUBC(:MT[161])
1731          JUMP(42)
1732      U,  $ - '1101', Z                       " FORCLAUSE?
1733      N,  JUMP(43)
1734          $ = 150                             " PRIJS R103E2 + DE REST
1735          HKOST
1736          $ = MT[18]                          " SUBCD(:R103E2)
1737          HGEN
1738          $ = MT[21]                          " SE6
1739          HGEN
1740          E = 1
1741          G = HOBTOP
1742          $ = :HOBTEXT, Z

1743                                                                  " 18.11
1744                                                                  " HASTATCOL - 1
```

statement collapse

```
1745          SUBC(MS)
1746          $ = A                                  " STATEMENT LINK
1747          DO(MP[- 1])
1748          G = - M[B - 2]
1749          HOBT
1750          $ = '1220'                             " $ = :STAT
1751          LUS(15)
1752          $ + HMAXSPAN[HA3]
1753          G = - M[B - 3]
1754          HOBT
1755          JUMP(7)
1756          JUMP(3)
1757          SUBCD(:R103E2)
1758          '10000000'
1759          SE33
1760      U,  A = M[57], Z
1761      N,  SUBCD(:RSE88)
1762          SE6
1763          $ = 1
1764          HCBH[HA3] - $
1765          $ = M[B - 7]
1766          HSPAN[HA3] = $
1767          $ = M[B - 6]
1768          HMAXSPAN[HA3] = $
1769          $ = 9
1770          SE73
1771          HABLOCKINT[238]
1772          B - 5
1773          HOND1
1774          HOND2
1775          $ = 0, Z                               " ZET CONDITIE Y
1776      N,  $ = MC[- 1]

1777                                                 " 18.11
1778                                                 " HASTATCOL - 2
1779          HGASMETER = $
1780          JUMP(- 66)
1781      U,  $ - '1201', Z                          " SIMPLE FORCLAUSE?
1782      Y,  JUMP(3)
1783          MA = B
1784          GL1 = A
1785          JUMP(145)
1786          $ = 0
1787          HKOST
1788          $ = HRESP[HA3]
1789          $ - M[B - 6]
1790          $ - 12, Z
1791      N,  $ = 2
1792      N,  HRESP[HA3] = $
1793          HGEN
1794          $ = 1
1795          HOBTOP - $
1796          HRESP[HA3] + $
1797          $ = M[B - 6], Z
1798      Y,  JUMP(93)
1799          G = - M[B - 7]
1800          $ = :HOBTEXT, Z
1801          SUBC(MS)
1802          SE39
1803          $ = G
```

```
1804          HGEN
1805          $ = 1
1806          M[B - 6] - $
1807          M[B - 7] + $
1808          JUMP(- 12)
1809          MC = $                          " SUBROUTINE
1810          $ = HOBTOP

1811                                                                  " 18.11
1812                                                                  " HASTATCOL - 3
1813          $ '*' - 511
1814          G = $
1815          $ = M[B - 5]
1816          $ '*' - 511                     " SAMEPAGE?
1817          $ - G, Z
1818          $ = HRESP[HA3]
1819      Y,  $ - 3, R                        " Y, JUMP(- :STAT)
1820      Y,  $ = MC[- 1]
1821      Y,  $ + HOBTOP
1822      Y,  $ + 1
1823      Y,  $ - M[B - 4]
1824      Y,  SUBC(:HGENERATE)
1825      Y,  GOTOR(MC[- 1])
1826          $ - 5, R
1827      N,  $ = 2
1828      N,  HRESP[HA3] = $
1829          $ = MC[- 1]                     " Y, JUMP(:STAT)
1830          $ - MT[- 69]                    " TREK ER AF '10000000'
1831      Y,  $ + HRESP[HA3]
1832      Y,  $ - 3
1833      N,  $ + 508
1834          HGEN
1835          G = - M[B - 4]
1836          $ = :HOBTEXT, Z
1837          SUBC(MS)
1838          $ = 2
1839          HRESP - $
1840          $ = A
1841          DO(MD[- 1])
1842          G = - HOBTOP
1843          G - HRESP[HA3]
1844          MC = G

1845                                                                  " 18.11
1846                                                                  " HASTATCOL - 4
1847          E - 1
1848          HOBT
1849          G = MC[- 1]
1850          $ = MT[- 86]                    " SE33
1851          HOBT
1852          GOTOR(MC[- 1])                  " EINDE SUBROUTINE
1853          G = - M[B - 2]
1854          E + E
1855          E - 1
1856          $ = :HDL, Z
1857          SUBC(MS)
1858          SE39
1859          MC = G
1860          G = -M[B-3]
1861          E + E
```

```
1862          $ = :HOL, Z
1863          SUBC(MS)
1864          SE39
1865          $ = - G
1866          $ '*' 1, Z                      " INTEGER?
1867      Y,  $ = '6061'                      " G + DYN
1868      N,  $ = '6060'                      " E + DYN
1869          RCS(12)
1870          $ + M[B - 1]
1871          HGEN
1872      Y,  $ = MT[- 107]                   " U, A = M[57], Z
1873      Y,  SUBC(:HGENERATE)
1874      Y,  $ = MT[- 108]                   " SUBCD(:RSE88)
1875      Y,  SUBC(:HGENERATE)
1876      Y,  $ = '7261'                      " DYN = G
1877      N,  $ = '7260'                      " DYN = E
1878          RCS(12)

1879                                                                  " 18.11
1880                                                                  " HASTATCOL - 5
1881          $ + MC[- 1]
1882          HGEN
1883          B - 2                           "GEBRUIKT OP 172
1884          $ = 1
1885          HOBTOP + $
1886          $ = '5023'                      " N, JUMP(:STAT)
1887          SUBC(:MT[14])
1888          $ = 1
1889          HOBTOP - $
1890          B + 2
1891          $ = MT[49]                      " JUMP(- 0)
1892          SUBC(:MT[- 78])
1893          $ = MT[- 11]                    " B - 2
1894          E = - 2
1895          HANOGEN
1896          B + 2
1897          JUMP(- 121)
1898          $ = '2451'                      " Y, JUMP(- :STAT)
1899          RCS(11)
1900          SUBC(:MT[- 86])
1901          JUMP(- 47)
1902          MC = $                          " SUBROUTINE 2
1903          $ = HOBTOP
1904          $ '*' - 511
1905          G = $
1906          $ = M[B - 4]
1907          $ '*' - 511
1908          $ - G, Z
1909      N,  JUMP(15)
1910          G = - M[B - 4]
1911          $ = :HOBTEXT, Z
1912          SUBC(MS)

1913                                                                  " 18.11
1914                                                                  " HASTATCOL - 6
1915          SE39
1916          E = - E
1917          $ = 2
1918          HRESP[HA3] + $
1919          $ = M[B - 1]
```

```
1920          RCS(12)
1921          $ + HOBTOP
1922          $ + G
1923          $ - 1
1924          HOBT
1925          B - 3
1926          GOTOR(MC[ 1])
1927          $ = HRESP[HA3]
1928          $ - 2, R
1929      Y,  $ = HOBTOP
1930      N,  $ = HBASE[HA3]
1931      N,  $ + 513
1932          G = - $
1933          $ = :HOBTEXT, Z
1934          SUBC(MS)
1935          $ = A
1936          DO(MD[- 1])
1937          G = - M[B - 4]
1938          JUMP(- 15)                        " EINDE SUBROUTINE
1939          $ = 34
1940          GBILL + $, R
1941          SE115
1942          SE34
1943          JUMP(- 0)                         " GEBRUIKT OP 170

1944                                                                  " 18.12
1945                                                                  " HADYNAR - 0
1946  HADYNAR(85)
1947          A = 4
1948          $ = 7
1949          SE18
1950          $ = 16
1951          SE1
1952          G = - HREVTOP
1953          F + 1
1954          MC = - G
1955          SUBC(:MT[71])                     " EEN VERDER
1956      U,  $ - '104', Z                      " IDENT NE
1957      N,  JUMP(54)
1958          F = 1
1959          SUBC(:MT[66])
1960      U,  $ '*' '4260', Z                   " TYPE AND(VARIABLE, PROC OR ARRAY)
1961      N,  JUMP(56)
1962          MC = $
1963          F = - 2
1964          G - HCURRENTBLOCK
1965          $ = :HBL, Z
1966          SUBC(MS)
1967          SE39
1968          F * 3
1969          MC = G
1970          F = - 1
1971          G - HCURRENTBLOCK
1972          $ = :HBL, Z
1973          SUBC(MS)
1974          SE39
1975          $ = G
1976          M[B - 1] + $
1977          MC = $
1978      U,  $ - M[B - 2], Z
```

```
1979                                                                    " 18.12
1980                                                                    " HADYNAR - 1
1981      Y,  B - 3
1982      Y,  JUMP(37)
1983          G = - S
1984          S = :HNL, Z
1985          SUBC(MS)
1986          SE39
1987          MC = G
1988          F = 2
1989          G - M[B - 5]
1990          SUBC(:MT[38])
1991          S = - M[B - 4]
1992          S '*' '2000', Z                   " PROCEDURE?
1993      Y,  JUMP(11)
1994          S = - G
1995          S '*' '73000', Z                  " MA-ADDRESS (OF MD-ADDRESS) ?
1996      Y,  JUMP(12)
1997          S = M[B - 1]
1998          M[B - 1] = G
1999          LUS(1)
2000          S + 1
2001          G = - S
2002          S = :HDL, Z
2003          SUBC(MS)
2004          SE39
2005          G - MC[ - 1], Z
2006      N,  S = 3
2007          PLUSS(M[B - 1])
2008      N,  JUMP( - 29)
2009          S = 138
2010          HFOUT = S
2011          S = 9
2012          SE73
2013          HBOODSCHAR
2014          S '*' 2, Z                        " - CONSTANT?
2015      N,  F = 1
2016      N,  SUBC(:MT[11])

2017                                                                    " 18.12
2018                                                                    " HADYNAR - 2
2019      N,  S '*' 2, Z                        " - REAL?
2020      N,  S = 1
2021      N,  M[B - 1] - S
2022          S = 3
2023          MINS(M[B - 1]), F
2024          G = - S
2025      Y,  JUMP( - 67)
2026          S = 41
2027          GBILL + S, F
2028          SE115
2029          SE71
2030          G - M[B - 2]                      " SUBROUTINE
```

the end of the tape got caught in the reader, a few lines are missing here

in this tape a parity error was detected

```
 0                                                                    " 7.0
 1                                                                    " HSYM - 0
 2 HSYM(179)
 3          A = 4
 4          S = 7
 5          SE18
 6          S = 23
 7          SE1
 8      U,  A = HVERDERLEZEN, R
 9      N,  S = HVOORSYM
10      Y,  SUBC(:MT[122])                          " S := G := SYM
11      U,  S + 1, R                                " SYM ≥ 0?
12      Y,  JUMP(8)
13          HVERDERLEZEN = B
14      U,  A = HBANDCORRECT, R
15      N,  JUMP(133)
16          HFOUT = S
17          B + 2
18          S = 9
19          SE73
20          HBOODSCHAP
21      U,  A = HTEXTGEWENST, R
22      N,  JUMP(2)
23      U,  A = HVERDERLEZEN, R
24      Y,  SUBC(:MT[99])                           " PRSYM(S)
25      U,  S - 118, Z                              " PROGEND?
26      N,  JUMP(6)
27          S = MT[4]
28          GL0 = S
29          S = MD[3]
30          GL1 = S
31          SE34
32          HPROGEND
33          HVERDERLEZEN = B
34      U,  S - 119, Z                              " NLCR?
35      N,  JUMP(47)

36                                                                   " 7.0
37                                                                   " HSYM - 1
38          SUBC(:MT[96])                           " S := G := SYM
39          HVOORSYM = S
40          S - 119, Z
41      N,  JUMP(3)
42          S = HTEXTGEWENST, R
43      Y,  SUBC(:MT[83])                           " PRSYM(HVOORSYM)
44          JUMP(- 7)
45          S = 1
46          HREGELNR + S
47          S = 0
48          HRANGNR = S
49          HREGELLEEG = B
50          S = - HSTRINGLEZEN, R
51      Y,  S = - HERRORFOUND, R
52      N,  JUMP(15)
53          G = - HWIJZER, R
54          B + 2, B
55      N,  JUMP(4)                                 " DAN MOET WIJZER = 0 ZIJN GEWEEST
56          S = :HTEXTPASS2, Z
57          SUBC(MS)
```

```
58          SE39
59          F + 7799, Z                     " WAS ER HET LAATST EEN NLCR IN TEXTPASS2 GESTOPT ?
60      N,  S = 2
61      N,  HWIJZER + S
62      N,  S = - 7799
63      N,  R = 2
64      N,  SUBC(:MT(52))                   " TEXTPASS2(WIJZER - 6) := S
65          R = 1
66          S = HREGELNR
67          SUBC(:MT(49))                   " TEXTPASS2(WIJZER - 6) := S
68          S = HTEXTGEWENST, R
69      N,  JUMP(13)
70          B + 2
71          SE76
72          + 0
73          + 4
74          SE76
75          + 0
76          + 0
77          S = :HREGELNR

78                                                                  " 7.0
79                                                                  " HSYM - 2
80          SE78
81          S = 21
82          SE73
83          CABSFIXT
84          SUBC(:MT(44))                   " RRSYM(HVOORSYM)
85          HVERDERLEZEN = - B
86          JUMP( - 75)
87      U,  S - 93, Z                       " SPATIE?
88      N,  JUMP(3)
89          S = - HSTRINGLEZEN, R
90      Y,  JUMP( - 77)
91          S = 129                         " STRINGSPATIE
92          HREGELLEEG = - B
93          G = S
94      U,  S = HSTRINGLEZEN, R
95      Y,  JUMP(4)
96      U,  S - 123, Z
97      Y,  F = 63                          " REPRESENTATION FOR MIDDLE
98      U,  S - 124, Z                      " LIBRARY ?
99      Y,  F = 93
100     U,  S - 62, R                       " GEEN LETTER OF DIGIT ?
101     Y,  S = - HDRUM, R
102     Y,  S = 1
103     Y,  HRANGNR + S
104         S = G
105         S - 90, Z
106     Y,  S = - HSTRINGLEZEN, R
107     N,  JUMP(45)
108         SUBC(:MT(28))                   " S := G := SYM
109         HVOORSYM = S
110     U,  S = HTEXTGEWENST, R
111     Y,  SUBC(:MT(17))                   " RRSYM(HVOORSYM)
112     U,  S - 93, Z                       " SPATIE?
113     Y,  JUMP(- 6)
114     U,  S - 70, Z                       " EQUAL?
115     Y,  F = 344
```

```
116                                                                    " 7.0
117                                                                    " H$YM - 3
118       N,  E = 90
119       N,  HVERDERLEZEN = - B
120           JUMP(34)
121           MC = $                              " TEXTPASS2[WIJZER - G] := $
122           G - HWIJZER
123           $ = :HTEXTPASS2, Z
124           SUBC(M$)
125           $E38
126           G = M[B - 3]
127           DO(MC[ - 1])
128           B - 1
129           GOTOR(MC[- 1])
130           HVOORSYM = $                        " PRSYM($)
131           B + 2                               " PRSYM(HVOORSYM)
132           $ = :HVOORSYM
133           $E78
134           $ = 13
135           $E73
136           CPRSYM
137           G = HVOORSYM
138           JUMP(22)
139           $ = 15                              " SUBROUTINE $ := G := SYM
140           GBILL + $, P
141           $E115
142           $ = HDRUM, P
143       Y,  JUMP(5)
144       U,  $ = HLEZENVANTAPE, P
145       Y,  JUMP(28)
146           CHEEN
147           SYM
148           JUMP(11)
149           E = :HSTRINGVARIABLE
150           SUBCD(:UDNSS)
151           $ = A
152           DO(MD[- 1])
153       W,  $ - 510, Z                          " EINDE STRING ?
154           JUMP(4)
155           $ = 17
156           GBILL + $, P
157           $E115
158           $E71
159       Y,  JUMP(9)
160           G = $
161           $ = MC[- 1]
162           $ '*' - HPAG
163           MC = $
164           $ = :MT[0]
165           $ '*' HPAG
166           M[B - 1] + $
167           $ = G
168           GOTOR(MC[- 1])
169           CHEEN
170           CD
PARITEITSFOUT OF CODE ONGEDEFINIEERD
```

```
104 - 685 -   200669 - 01112562 SYSTEEMPRI

VERTAALTIJD          3
EXECUTIETIJD      3593

AANTAL OVER STROOM 1 GELEZEN GETALLEN              0

AANTAL OVER STROOM 2 GELEZEN GETALLEN              0

PROGRAMMA DOOR OPERATEUR BEEINDIGD.
AANTAL STAPELPAGINA'S      0
AANTAL SEGMENTEN           8
```

two things have not been reproduced

1) The entire list of error-message-strings sent out by the translator
2) The strings containing the algol-text of procedures that are kept on drum and some tabulary material that goes with it.