

NORSAR

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NORSAR PHASE 3

1 July–31 December 1973

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K. DETECTION PROCESSOR OPERATION

The mode of operation of the Detection Processor (DP) has for this period essentially been the same as for last period, i.e., minimal system down time. Average recording time has been, according to Table K1, 98.3% as compared to 98.8% for the last reporting period. No significant changes have been made to the DP software in the reporting period.

Data Recording and DP Down Time

Fig. K1 shows the DP down time each day from 1 July to 31 December in 1973. The total monthly recording time is given in Tables K1, K2 and K3, which also give statistics on general computer usage. As can be seen in Fig. K1, the causes of the longest/most frequent down time intervals were respectively,

- a repeatedly occurring power drop on the A-computer
- a console typewriter hardware problem
- a case of all communication lines down
- a hardware failure in the SPS
- a cable break.

The power drops on 2 and 3 July caused seven down periods, giving a total down time of close to five hours for these two days.

The console typewriter error caused the DP to remain down in the time interval 1703 to 1842 on 30 August.

On 4 September, all lines were down from 0730 to 1135, again causing DP to be down in this time interval.

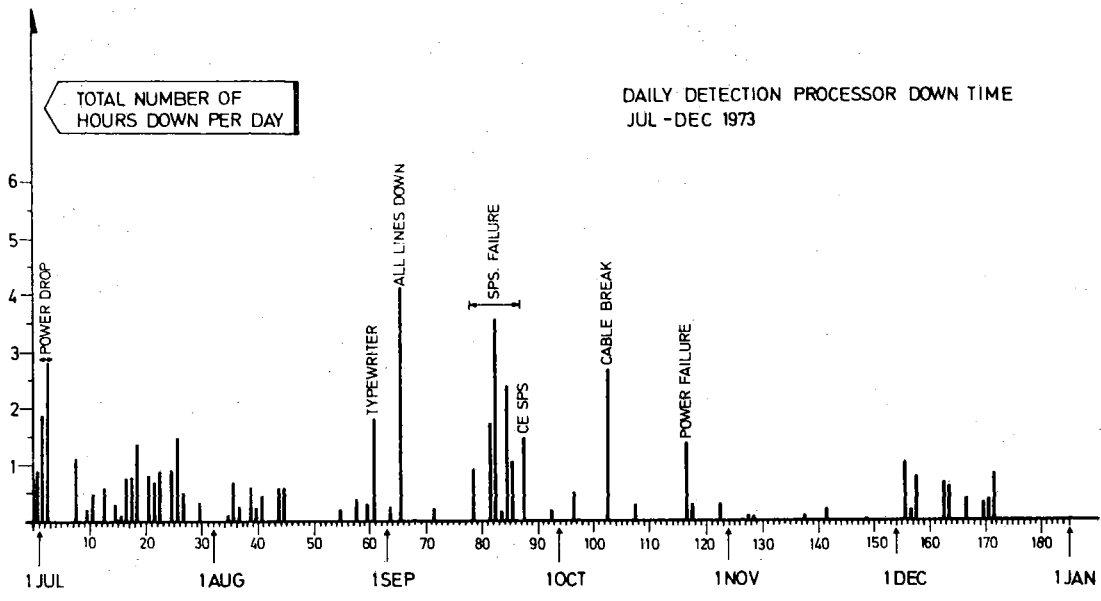


Fig. K1 Daily Detection Processor down time Jul-Dec 1973.

TABLE K1

DP and EP Computer Usage, 1 July - 31 December 1973.

Month	DP Uptime (hrs)	DP UP (%)	EP Uptime (hrs)	EP Up (%)	No. of DP Error Stops	DP MTBF (Days)
Jul	734	98.7	346	46.5	32	1
Aug	737	99.1	321	43.1	20	1.5
Sep	680	94.4	298	41.4	33	0.9
Oct	735	98.8	354	47.6	8	3.8
Nov	718	99.7	262	36.4	5	6.0
Dec	737	99.1	234	31.5	15	2.0
Total	4341	98.3	1815	41.1	113	1.6

TABLE K2

A-Computer Usage (hrs), 1 July - 31 December 1973.

Month	DP	EP	Job Shop	Data Ret. Copy	AM	DP Test	C.E. Maint.	Power Down	Data Lines Down	Mach-ine Fail.	DP Down for TIP	SPS Fail-ure	Plot in Fl
Jul	523	82	151		13	0.4	1	1		26	2		132
Aug	732		2			0.5	3			3	1		145
Sep	680					0.3	3	1	25	2	1	6	140
Oct	735						0.1	3	2	2			147
Nov	654	39	49			5	3			1			125
Dec	737						0.2			4			
Total	4061	121	202		13	6	10	5	27	38	4	6	784

TABLE K3

B-Computer Usage (hrs), 1 July - 31 December 1973.

Month	DP	EP	Job Shop	Data Ret. Copy	AM	DP Test	C.E. Maint.	Power Down	Mach-ine Fail.	Hands On	Plot In Fl
Jul	211	264	386	34	18	3	3	1	4		120
Aug	5	321	488	18	444	15	4		4		110
Sep		298	515	72	78	9	3	1			108
Oct		354	610	45	43	41	2	3		3	112
Nov	64	223	490	78	29	52	6		8	2	116
Dec		234	506	101	46	0.4	2			1	164
Total	280	1694	2995	348	258	120	20	5	16	6	730

A faulty frame in the Special Processing System (SPS) caused DP to go down 28 times between 0600 on 17 September and 0923 on 24 September. Most of the down intervals were of the order of 10 minutes. Major down periods were on 17 September (1 hour and 54 minutes), 20 September (27 minutes), 21 September (2 hours and 47 minutes) and 23 September (59 minutes). Also a customer engineering session on the SPS on 25 September caused DP to be down 1 hour and 2 minutes.

A cable breakage on 11 October gave a down period from 1701 to 1942.

A power failure on 25 October gave another down period from 1740 to 1906.

The 113 DP error stops in this period are related to the following causes:

Tape drive problems	:	11
Power breaks and related stops	:	12
SPS problems	:	33
Other hardware problems	:	23
Operator errors	:	7
CE maintenance	:	13
Software problems	:	9
TOD (Time of Day) adjustment	:	1
Unknown	:	4

Under "software problems" are also counted restarts with program modifications. The average mean time between failures in this period was 1.6 days. Apart from these error stops, no major operational problems have occurred while running DP.

DP Algorithms and Parameters

No major changes have been introduced to the DP algorithms in the reporting period. A small modification in the punched card processor was introduced 4 September to correct a punching error occurring infrequently on the data cards for the tape library program.

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