The following is the current list of Correspondents:

D.C. BINKS

Bristol Aircraft Ltd, Filton House, Bristol, ~~D.L. Edwards~~, Mathematical Services.
Bristol Siddeley Engines Ltd, Filton,Bristol, D.C. Boston, P.O. Box 3.
B.P. Trading Ltd., London, E.1., A.A.H. Morris.
C.E.G.B., Bankside House, Sumner St., London, S.E.1., F.J. Linger.
E.E. Co. Bradford, D.H. Freer, I.M.D.E.
E.E. Co. Kidsgrove, Stoke-on-Trent, R.A. Smith, D.P. & C.S. Division.
E.E. Co. Liverpool, I.P. Beck (Liverpool) Transformers.
              W. Morrison (Netherton) Generators.
              D. Burns (Liverpool/Netherton) Manufacturing.
E.E. Co. Luton, D.G. Bond, Maths-Physics Section.
E.E. Co. L.C.S., Queens House, Kingsway, London, W.C.2., ~~D.J. Plower~~. L.W. Slater
E.E. Co. N.R.L., Blackheath Lane, Stafford, S.J.M. Denison.
E.E. Co. Warton, Preston, R. Keyser, Maths Services.
E.E. Co. Whetstone, Leicester, D.F. Holman, Maths Group, M.E.L.
Glasgow University, J. Blair, Computing Laboratory.
Liverpool University, Dr. E.J.C. Read, Computer Laboratory.
M.A.F.F., Guildford, I.Sadler, Data Processing Unit.
Marconi's W.T. Co., N.A. Huttly, M. & S.A. Group, Great Baddow, Essex.
N.E.L., East Kilbride, Glasgow, Miss E.A.S. Paton.
N.P.L., Teddington, E.L. Albasiny, Maths Division.
Norway, N.V. Nilsson, Norwegian Computing Centre, Boks, 90,
        Lysaker, pr. Oslo.
        S. Nordbotten, Central Bureau of Statistics, Oslo.
Queens University, Belfast, F.J. Smith, Dept. of Applied Maths.
R.A.E. Bedford, R. Wakeling, Computing Group.
R.A.E. Farnborough, G. Cork, Maths Services.
Short Bros. & Harland, D. Faloon, Analytical Dept., Belfast.
U.K.A.E.A., J.E. Nicholls, Computer Section, Capenhurst, Nr. Chester.

2.   RESTARTING FROM POST MORTEM.

        This scheme, which was originally described by P.J. Landin of L.C.S.,
requires revising to take account of the latest Post Mortem program ZP29T/3
and the read-to-drum program ZP49T. DEUCE News 34 para. 4 and Omnibus 1
page 17 are now superseded.

        The idea is that by stopping a program at some convenient point, doing
a comprehensive Post Mortem and then assembling a pack as described below,
the program can be restarted at a later date. The scheme has various uses,
for instance it can be used to break off a long production run and restart
it at a later date, it can be used to break off a program at a point shortly
before it reaches an untested section thereby saving the time which would
otherwise be used in going over the tested sections time after time, etc.
        The procedure is as follows:

(i)   Run in the program and stop it at B_n which has next instruction A_m.
       If this is done by Request Stop remember to request stop on the
       instruction preceding B_n (which itself precedes A_m).

(ii)   Note D.L.8 m.c. m (if relevant) and the positions of the read
       and write heads (if relevant).

(iii) Post Mortem relevant parts of the store. This normally means all
       the high speed store and selected parts of the drum. If a large
       part of the drum contains instructions unmodified by the program
       these need not be punched and the triads can be obtained from
       program pack although for convenience and safety it is perhaps
       better to punch the entire contents of the machine. (Using
       ZP29T/3 this cannot take more than about 4 minutes). The Post
       Mortem results must be in phase i.e. the program must contain a
       clock track in $15/15_{16}$. Note that Post Mortem does not punch
       track 15/14.

y 36

DEUCE LIBRARY SERVICE
ENGLISH ELECTRIC CO. LTD. KIDSGROVE.

DEUCE News No.: 66
Report No: K/AA y 36
Sheet No.: 3

(iv) Assemble the following pack:

ZP49T, No. 492.
Tracks punched by Post Mortem.
Parameter card with P_{26} on $Y\alpha$ row.

ZP35, No. 328 – Fill Short Tanks.
Short stores and D.L.'s punched by Post Mortem.

(v) Doctor this pack as follows (where relevant):

(a) Punch the positions of the read and write heads respectively at P_5 on rows 0 and 1 of the first card of the Post Mortem result (the card containing the TS's).

(b) Add a triad for 15/14.

(c) Correct 8_m cf the Post Mortem result. This contains 8, 9-24, 0, 30.

(d) Change the 1-row of the first card of the D.L.1 triad to enter A_m. This should now read A, 0-1, 30, n-1 GO.

(e) Remove the cards containing D.L.12 in 80 column form, if these are present in the Post Mortem result.

(f) Punch card column 1 of the last card of D.L.1.

(vi) Set up the I.D. if relevant and Initial Input the pack.

With this procedure any program can be resumed at any point at which it has been stopped, provided that it would have been possible to resume immediately with a one shot. (This is not always the case e.g. if the program were stopped in the middle of a multiplication or during the punching of a card).

3. LIST OF DEUCES – C.B. Bispham, E.E. Kidsgrove.

This is a list of all DEUCE's at present in service. (The Bristol 4 machine is however still in course of installation). This list supersedes that published in DEUCE News 43. All the facilities listed are operational with the exception of those shown in brackets, these indicating that an order has been received but conversion is not yet complete.

This list is complete as far as conversions carried out by E.E. Co. are concerned but there may have been other modifications carried out by site engineers and of which E.E. have not knowledge.

	Mark	RS	AIM	64 COL.	80 COL.	MT	A DL'S	5 PO	7 PI	7 PO	MN	EF	HR	PF	BC	G
Bristol (Aircraft) 1	I	*	*	*				*a			*	*			*	
Bristol (Engines) 2	I	*	*	*											*	
Bristol (Aircraft) 3	I	*	*	*							*	*			*	
Bristol (Engines) 4	I	*	*	*							*	*	*		*	
B.P. London	?	*									a*					
C.E.G.B. London	I	*	*	*		4							*			
E.E. Kidsgrove CCS 5	IIA	*	*	*	*	4	*		*	(*)	*	*	*			
E.E. Kidsgrove CCS 6	I	*	*	*					*	*	*	*	*			*
E.E. L.C.S.	I	*	*	*							*					
E.E. N.R.L. 2	II	*	*	*	*	4					*	*	*			
E.E. Luton	I	*	*	*							*	*	*			
E.E. Stafford	IIA	*	*	*	*	6	*				*	*	*			
E.E. Warton 1	I	*	*	*					(*)	(*)	*a		*			
E.E. Warton 2	I	*	*	*					(*)	(*)	*	*	*			
E.E. Whetstone 1	I	*	*	*					*	*	*a			*a		
E.E. Whetstone 2	IIA	*	*	*	*		*		*	*	*	*	*			
Glasgow University	I	*	*	*					*	*b	*	*				
Liverpool University	I	*	*	*					*	*	*	*				
M.A.F.F. Guildford	IIA	*	*	*	*		*				*	*	*			
Marconi's W.T. Chelmsford	II	*	*	*	*						*	*	*			
N.E.L. East Kilbride	I	*	*	*					*	*	*a					
Norway, C.B.S.	II	*	*	*	*				*		*	*	*			
N.P.L. Teddington	?	*	*			*a					*a					
Queens University Belfast	I	*	*	*					*	*	*	*	*			
R.A.E. Bedford	II	*	*	*	*						*	*	*			
R.A.E. Farnborough 1	I	*	*	*				*	*					*		
R.A.E. Farnborough 2	I	*	*	*				*	*					*		
Shorts, Belfast	I	*	*a	*					*	*b						
U.K.A.E.A., Capenhurst	II	*	*	*	*						*	*	*			
Uni. Tech., N.S.W.	aI		*	*												

(*)	Order received and machine awaiting conversion.
a	Non standard.
b	Without parity cancellation.
Mark 0	has 32 col. read/punch without AIM or RS.
Mark I	has 64 col. read/punch with AIM and RS
Mark II	has 80/64 col. read/punch with AIM, RS, EF.
Mark IIA	has 80/64 col. read/punch with AIM, RS, EF, HR and 7 "A" DL's
RS	Request stop on N, S, D.
AIM	Automatic Instruction Modifier.
MN	Magnetic drum indicators on control panel.
MT	Magnetic tape with the stated number of decks.
5 PO	5-hole paper tape output.
7 PO	7-hole paper tape output.
7 PI	7-hole paper tape input.
EF	Extended facilities on control panel: magnetic drum indicators P1 and P15 I.S. lamps; RS on N, S, D, L; P1 key on External Tree.
HR	Head shift interlock rationalisation.
BC	Batching counter on punch.
PF	Program controlled job number and counter reset on punch.
G	Graph Plotter.

4. STAC.

Liverpool University have produced amendments for this program, which now works in accordance with DEUCE News 38, the STAC Manual. Amended cards, are being sent out; so also is the flow diagram, one copy per establishment, in the original Whetstone form. This program will henceforth be known as STAC I. A version of this with paper tape input has been in use at Liverpool University with very satisfactory results for over a year.

STAC II has now been produced, by Liverpool University, and will be published. It has paper tape input (a more satisfactory form of input than cards for this program) or card input and is considerably faster than STAC I. It also has improved failure indications and some restrictions and limitations of STAC 1 have been removed.

5. IDENTIFICATION OF DL'S IN POST MORTEM RESULTS. - H.U.M. Adler, Marconi's W.T., Co.

Time is frequently wasted in identifying tracks in the mercury after post mortems, particularly if an unexpected failure has occurred. It has been found economical and helpful to punch the appropriate track numbers into the Joe positions of two adjacent minor cycles in each track. Head position zero needs special treatment and of course data tracks do not lend themselves to this treatment. The monitor is also made more useful by easy track recognition.

6. FAILURE INDICATIONS IN THE ALPHACODE COMPILER. - M.R. Wetherfield, E.E. Kidsgrove.

The parts of the Compiler which look for incorrect instructions in the Alphacode programme have been largely rewritten, and can now detect a far wider range of errors. Punched cards dated 1.8.61 and a supplement to the Alphacode Manual are being issued.

The method of indication of failures is the same as before. The alarm will sound, and punching of binary instruction cards will be suppressed, if failures have been detected in the current section (the one just read in) or any previous section of the programme, and instead failure cards will be punched, one for each incorrect instruction in the current section. Each failure card has the function number punched in decimal in columns 1 and 2, the instruction number within the section in columns 30, 31 and 32, and a failure indication (see attached table) in the X-row: instructions are numbered consecutively the first of each section being number 1, with "constant" cards excluded from the numbering.

It is recommended that failure cards be reproduced into blank "Alphacode" cards as it is them much easier to interpret the X-row.

Some of the failures now detected are specifically those which would prevent a programme from being translated - e.g. the use of numbers greater than 511, and references on "STOP" or "FINISH" instructions. (It is possible, by trivial modifications, to prevent these from being regarded as failures).

The numbers in the table are the columns of the DEUCE field punched in the X-row of the failure card.

If two failure indications overlap (unlikely) they will be added together and will therefore cause a "carry" into an adjacent column on the right.

	FAILURE (DEUCE Columns).																	
FN. NO.	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
0			3-5		10				15			16-21		26				
1-4			3-5		10	10			15	15		16-21		26	26			
5-10			3-5		10	10			15	15		16-21		26	26		27-29	
11-13			3-5		10	10			15	15		16-21		26	26			
14		3-5	3-5									16-21						
15												16-21						
16,17	1-2		3-5									16-21						
18		3-5										16-21						
19			3-5									16-21						
20,21			3-5		10	10			15	15		16-21		26	26		27-29	
22			3-5		10	10			15	15		16-21		26	26		27-29	27-29
23,24			3-5		10			11-15	15			16-21	22	26				
25-32			3-5	6, 11, 22	10				15			16-21		26				
33			3-5		10	10			15	15		16-21		26	26		27-29	
34-45			3-5	6, 11, 22	10				15			16-21		26				
46			3-5		10			11-15	15			16-21	22	26				
47			3-5									16-21						
48-53			3-5	6, 11, 22	10		10		15		15	16-21		26		26		
54-55			3-5				10	11-15			15	16-21	22			26		
56-63			3-5	6, 11, 22	10		10		15		15	16-21		26		26		

(a)   No such function.

(b)   Reference on this instruction (not allowed)

(c)   Reference number on this instruction is used again later in this section.

(d)   N-address used in this instruction.

(e)   Constant > 511 appears in A position.

(f)   "Hybrid" instruction - X or T-address in A position (and N-elsewhere).

(g)   Even X-or T-address in A position of complex function.

(h)   N-address in C position, and $B \neq 1$, of Data or Results instruction.

(i)   Constant > 511 in B position.

(j)   "Hybrid" instruction - X- or T-address in B position (and N-elsewhere).

(k)   Even X- or T-address in B position of complex function.

(l)   Function number and name incompatible.

(m)   T-address in C position of Data or Results instruction.

(n)   Constant > 511 in C position.

(o)   "Hybrid" instruction - X- or T-address in C.position (and N-elsewhere).

(p)   Even X- or T-address in C position of complex function.

(q)   Jump to non-existent reference.

(r)   Jump to instruction overwritten by new section.

7.   DEMONSTRATION PROGRAMS.

Operating Instructions and Flow Diagrams for all the published demonstration programs have now been issued and are contained in Report K/ﬁﬁ t 1464, category ZV.

8.   OPERATING INSTRUCTIONS FOR PAPER TAPE EQUIPMENT. - R.A. Smith, E.E., Kidsgrove.

Paper Tape Reader.

To load a paper tape into the reader the procedure is as follows. Fit the spool of tape on the spindle on the left of the tape box. Lift the sensing station cover and set the tape width selector to the appropriate position (5, 7 or 8 channel). Depress the "Load" key - the motor should stop. Raise the tape guide and the tape can now be inserted into the sensing station - the 3 channels on the one side of the feed holes being farthest from the operator. A flap at the top of the tape box can be used to guide the tape, after it leaves the sensing station, either into or over the top of the box. The tape should have a sufficient "leader" to enable it to reach the flap when the tape is loaded, otherwise it may not feed into the box properly. Press down the tape guide, lower the sensing station cover and raise the load key to its centre position. Set the "Parity" and "Read All Ones" keys to the appropriate positions and the tape can now be read.

After a tape has been read it can be run out by momentarily raising the "Load" key.

If, while reading tape, it is necessary to stop the reader, this must be done by raising the "Clear Parity Fail" key and not the "Load" key, otherwise information will be lost.

The Engineer's Panel under the tape box is not normally required by the operator but there are two features of this which may be noted. First, this panel contains the only key for calling and decalling the reader manually. Secondly, the "Change Over" socket must contain the correct unit. (This acts as a plugboard).

When the paper tape reader will not be required for some time the "Load" key should be momentarily raised to the "Stop" position.

If the monitor selection switch is turned to the position "Auxiliary" the second line of the display shows four copies of the character which has just been read.

To remove the tape box lift and pull forward by the handle under the Control Panel. To replace the box place the two Tufnol lugs at the bottom of the box in the two brackets on the transporter and push home. The perspex front of the box hinges forwards and is held in place by the two clips at the top corners.

Remember when re-winding tape from the box to start with the end which last went through the sensing station, so that it is the right way round for next time.

Paper Tape Punch.

To make the punch ready to punch out characters the procedure is as follows. If blank tape is not already fed under the punch knives pull out the tape drawers and check on the amount of tape therein. If there is insufficient in both of them then put in a fresh reel of tape, leading the free end round the circular roller and out through the slot in the side of drawer, making sure than the tape is holding back both of the spring loaded arms. (Failure to do this is a frequent cause of the punch refusing to operate). Replace the tape drawers making sure that they are pushed right home. (The "Tape Out Alarm" lights should then go out). Take the free end of the tape being used, lead it round the guide roller and under the punch knives, raise the feed latch and push the tape under it. Lower the feed latch and lightly press it on the tape. Check that the "Parity" and "Channel" switches are correctly set. Form a leader of about 8" of tape by pressing the "Run Out" button. Press the "Prepare" key, when the green "Ready" light should come on. The punch is now ready for use.

Both tapes can be punched together if desired.