

GENERAL DYNAMICS

Land Systems Division

P.O. Box 527, Warren, Michigan 48090

Inter-Office Memo

FO/dr:84-90
1 October 1984

To: J. J. McCuen

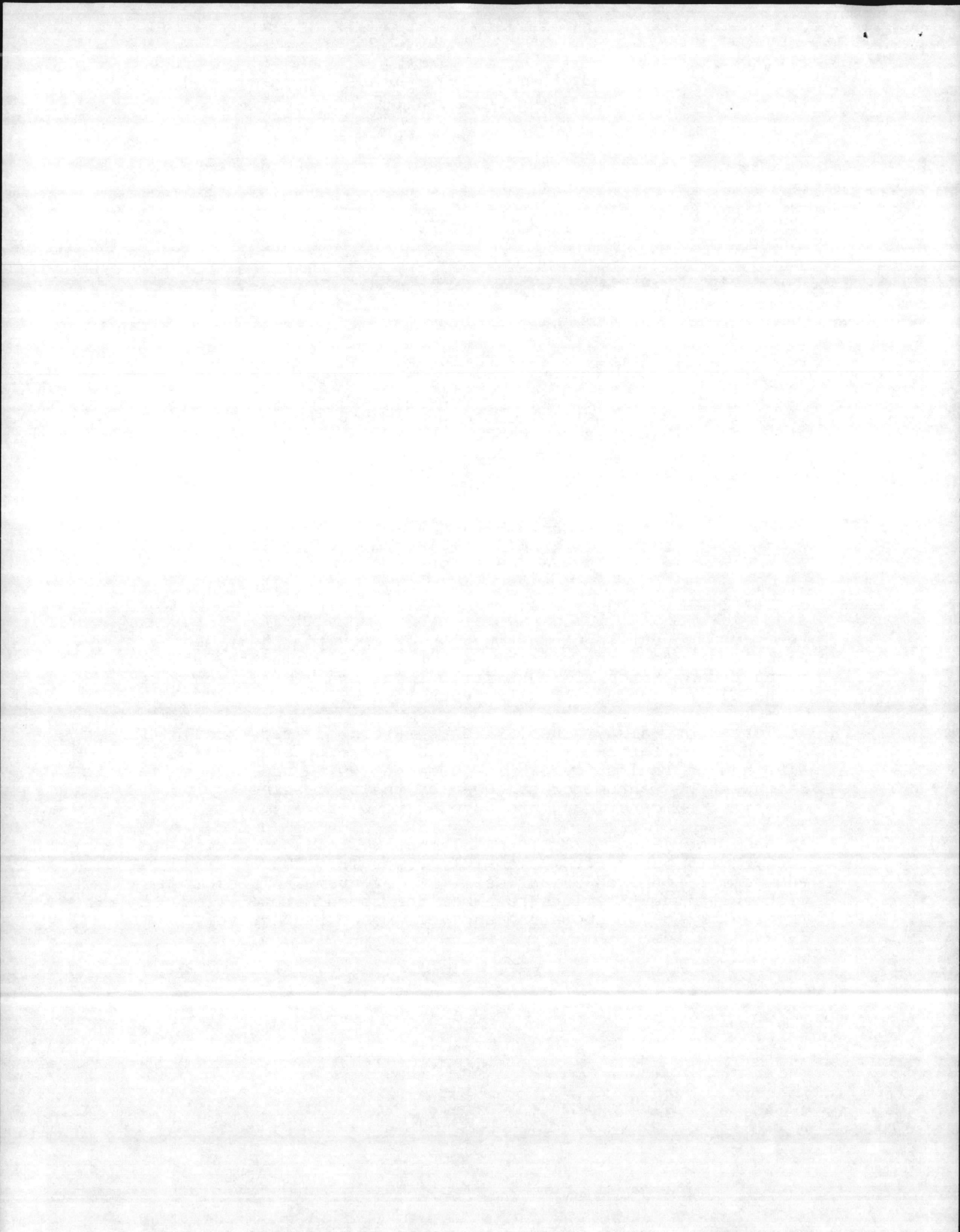
xc: R. Fey, H. Rinna

Subject: Field Survey of DIP Failures

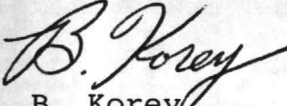
Reference: 1) R. G. Hill's Memo Dated 21 September 1984
2) P. W. Lett's Letter, PWL/ymv:84-631
Dated 20 September 1984


Enclosures: 1) R. O. Fish's IOM, ROF/df:84-91
Dated 28 September 1984
2) M. Boland's IOM, MB/nj:84-167
Dated 27 September 1984
3) L. V. Clarkson's IOM, LVC/ml:84-220
Dated 28 September 1984

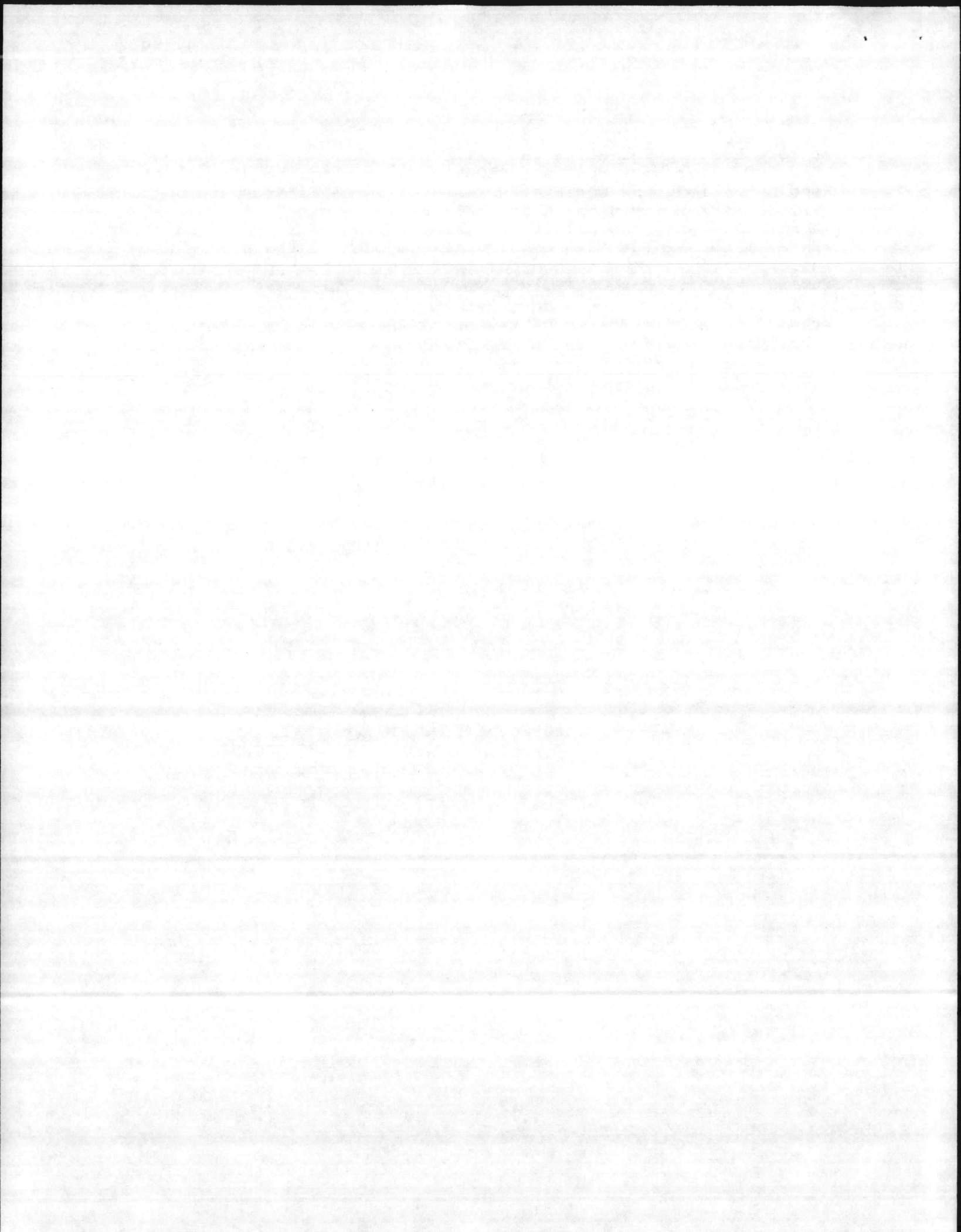
1. Per your request, an investigation of Driver's Instrument Panel (DIP) failures, of the past twelve (12) months, was conducted at three (3) GDLS field locations. Responses were gathered and are attached for your review.
2. At Fort Knox, sixty-nine (69) DIPs were processed through the DIO instrumentation repair shop. Of these, twenty-nine (29) DIPs had no faults found. The component with the highest failure rate was the tachometer followed by the fuel select switch, liquid quantity indicator, and speedometer respectively.
3. At APG, forty-one (41) DIP problems were recorded during the last twelve (12) months from the M1E1, Power Train Durability (PTD), and Comparison Production Test (CPT) programs. The component with the highest failure rate was the speedometer followed by the fuel gauge, tachometer, and volt meter respectively.



4. At Fort Hood, information was limited to the 2nd Forward Support BN., 2nd Armor Division, and PECO. A good sampling of all Fort Hood battalions was not available because the 1st Forward Support BN., 2nd Armor Division is on REFORGER in Europe, and the 27th Maintenance BN., 1st Cavalry Division is in the field on an ARTEP. The available information shows the component with the highest failure rate was the tachometer followed by the speedometer and internal shorts respectively.
5. Based on the information provided, it appears that the DIP has many components which commonly fail.

Prepared by: 
B. Korey
Field Operations

Concurrence: 
F. Bryan
Acting Chief, CONUS
Field Operations



copy for Demello

GENERAL DYNAMICS
Land Systems Division

21 Sept. 1984

Inter-Office Memo

To: J. McCuen

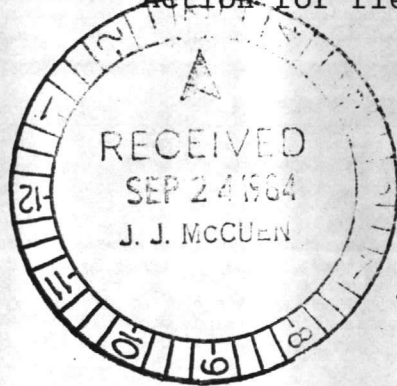
From: R. G. Hill

Subject:

D. Demello
F. Bryan
action

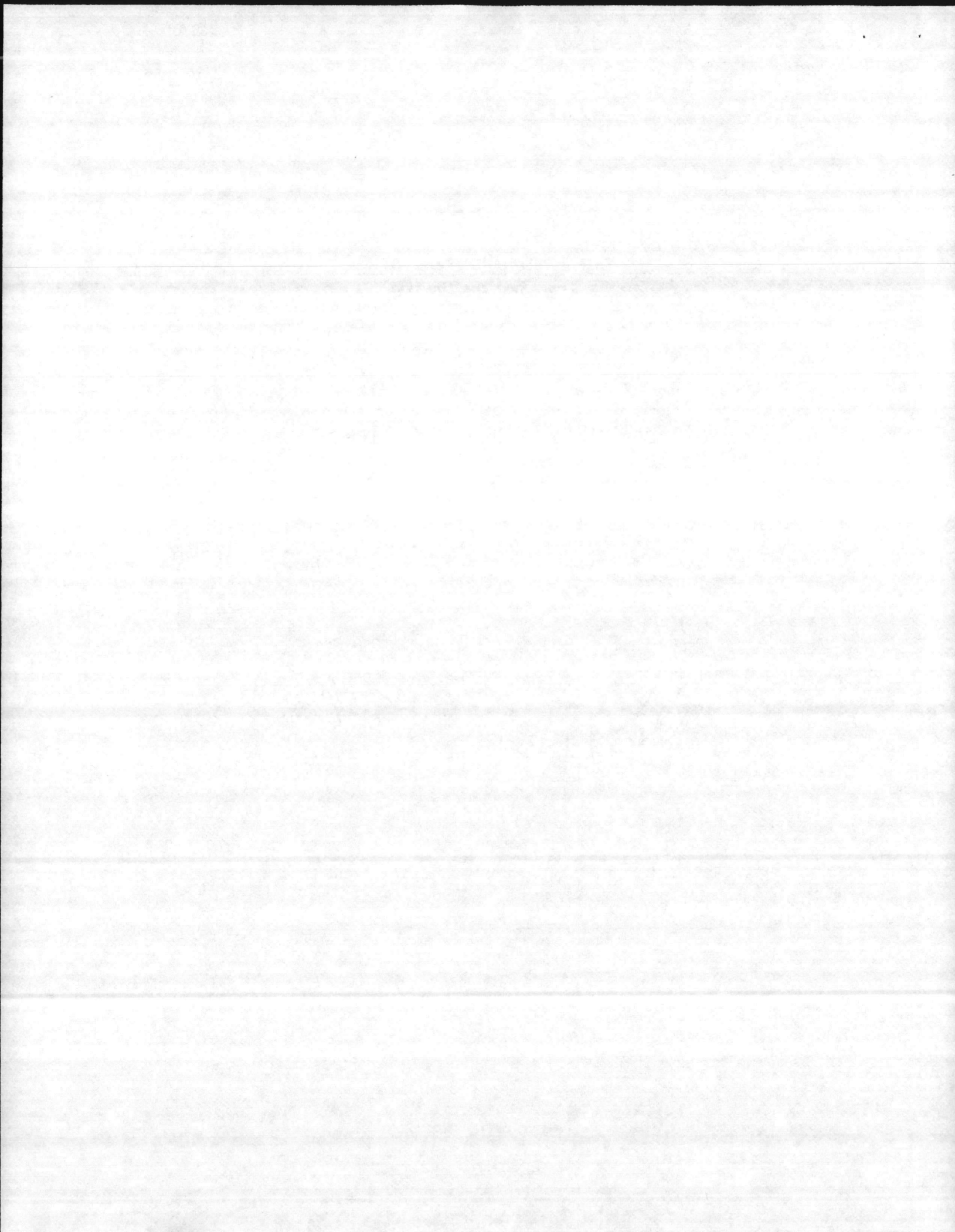
Action for field info.

B. Fey
9-25



R. HILL

Brian
look into this.
Have info by 1 Oct 84
Herb



GENERAL DYNAMICS

Land Systems Division

P.O. Box 1901, Warren, Michigan 48090

PWL/ymv:84-631
20 September 1984

T: J. W. Thomas
cc: R. G. Hill, R. T. Lentz
Subject: DIP

Quote from General Sunell -- "The DIP is a dog! We're having continuing problems with this unit in the field beginning with deprocessing."

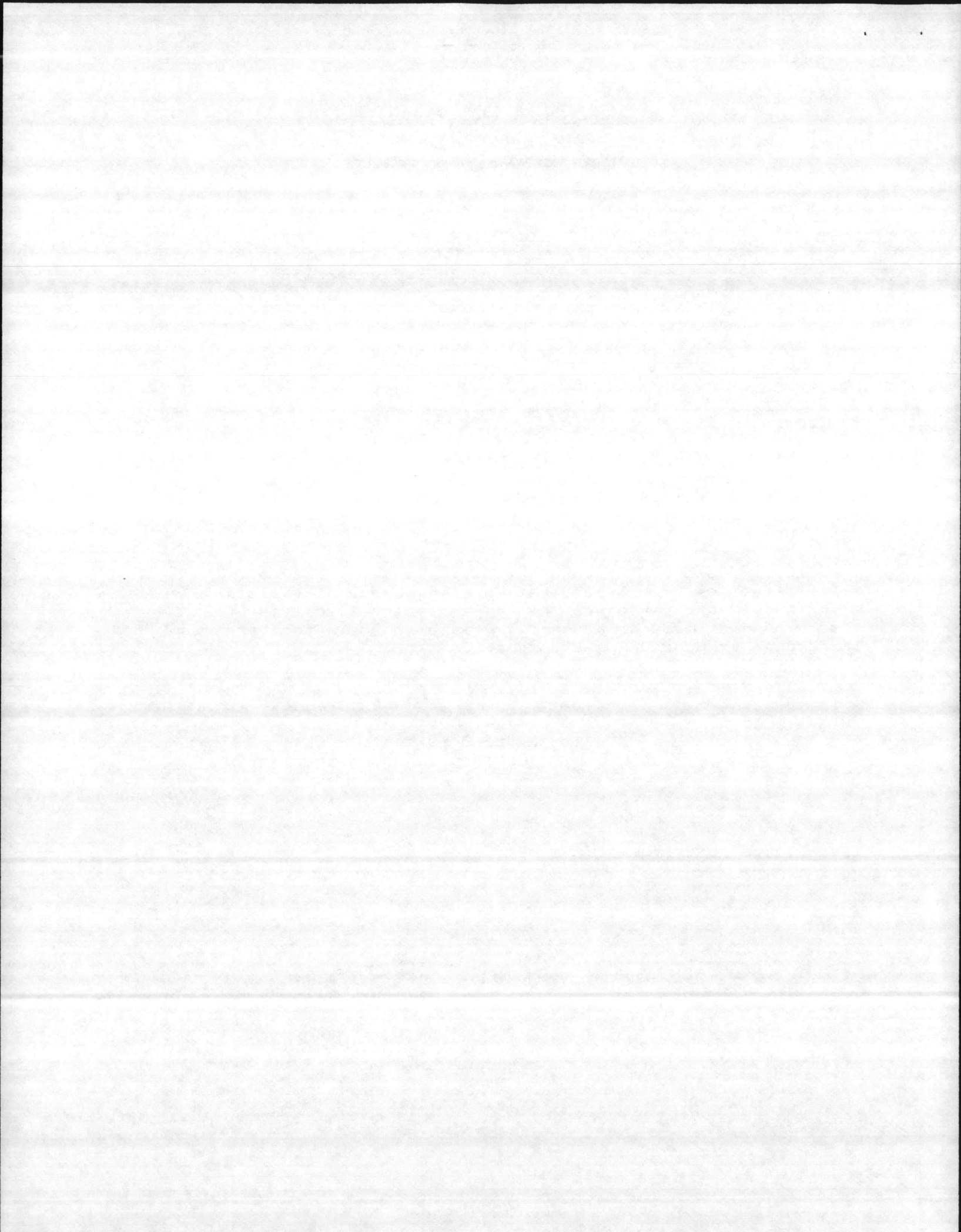
I would like a briefing on DIP status please. Include representatives from areas that have knowledge of field problems with the DIP and personnel who can address reliability of any design changes made or planned. Please schedule for first week in October or Monday PM, 8 October.

P.W. Lett / ymv
P. W. Lett
Vice President,
Research and Engineering

RECEIVED

SEP 21 1984

R. G. HILL
DIRECTOR ILS



GENERAL DYNAMICS

Land Systems Division

P.O. Box 527, Warren, Michigan 48090

Inter-Office Memo

ROF/df:84-91

28 SEPTEMBER 1984

TO: B. Korey
XC: A. De Stefano
FROM: R. Fish
SUBJ: DIP Failures

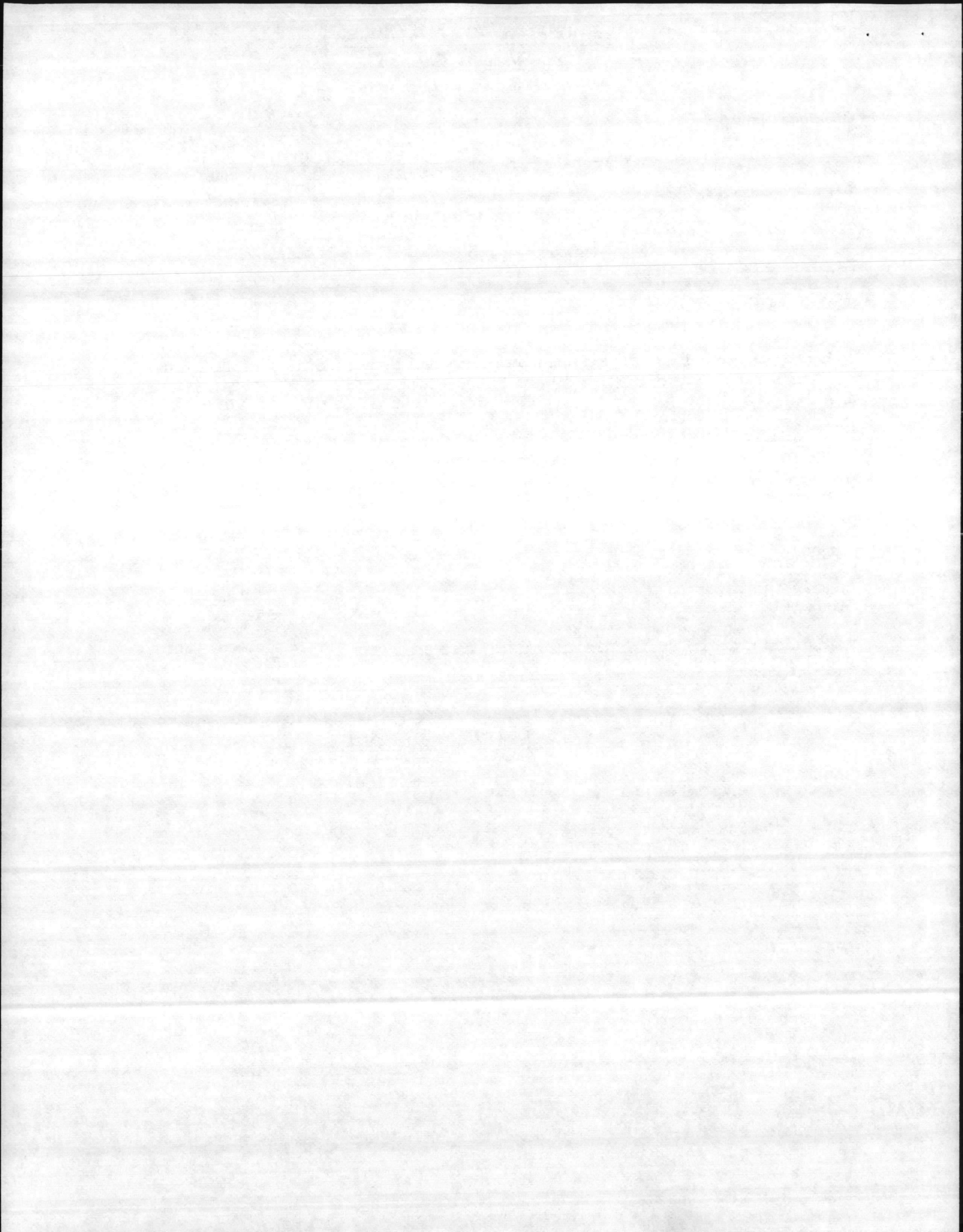
Information regarding DIP failures was obtained from records available in the 2nd Forward Support BN., 2 AD and PECCO. The 1st FSB, 2 AD is on REFORGER and the 27th Maintenance BN., 1st CAV DIV is in the field on an ARTEP.

Failure	Quantity
RPM indicator	8
Speedometer	7
Internal short	3
Panel lights	2
Guages	1
Fuel select switch	2
Battery indicator	1
Unknown	11

The period covered during the above failures is 2 April-15 September 1984.

R.O. Fish

R. O. Fish
SR ILS Field Engr
Ft. Hood, TX



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Land Systems Division

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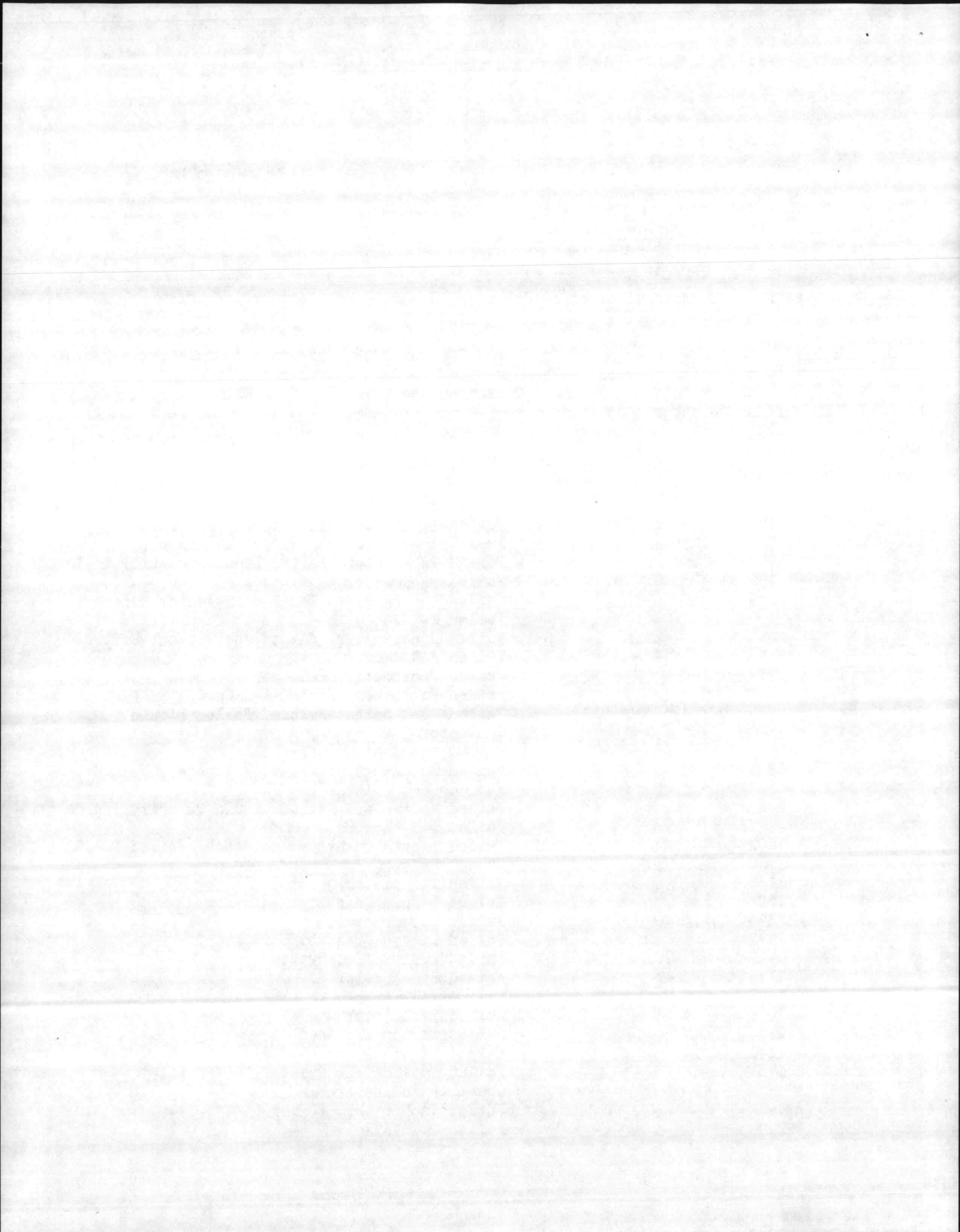
Inter-Office Memo

MB/mj: 84-167
September 27, 1984

To: F. Bryan
xc: B. Korey, J. McCuen
Subject: Accumulative DIP Failures at Fort Knox, Kentucky

1. In response to your inquiry dated September 26, 1984, an accumulative look at DIP failures has been made. The data was collected from records maintained by the DIO Maintenance Division, Fort Knox from September 1983 to date.

<u>Serial Number of DIP</u>	<u>Problem</u>
2365	Failed Tachometer
1178	Failed Liquid Quantity Indicator. Failed Fuel Selector Switch. Failed Tachometer.
1999	Failed Tachometer. Failed Liquid Quantity Indicator
632	Failed Tachometer
1049	Failed A-4 Card. Failed Fuel Selector Switch
	Failed K-3 Relay
1043	Failed Speedometer. Failed Fuel Select Switch.
1331	Failed A-4 Card.
1212	Failed Tachometer. Failed Speedometer.
	Failed Voltmeter. Failed A-2 Card.
1727	Failed Fuel Select Switch. Failed Liquid Quantity Indicator
1373	Failed Speedometer
1335	Failed Speedometer. Failed Voltmeter. Failed Fuel Select Switch.
2463	Failed Voltmeter. Failed Liquid Quantity Indicator. Failed A-1 Card.
1602	Failed Liquid Quantity Indicator. Failed Fuel Select Switch
1458	Failed Tachometer.
1694	Failed Liquid Quantity Indicator
2526	Failed Speedometer.
2127	Failed Liquid Quantity Indicator
1919	Failed Fuel Select Switch
1173	Failed Speedometer
1097	Failed Voltmeter
1099	Failed Tachometer
2365	J-2 Connector Replaced
1641	Failed Liquid Quantity Indicator
1788	Failed Fuel Select Switch. Failed Liquid Quantity Indicator
UNK	Failed Tachometer. Failed Speedometer.
UNK	Failed K-1 Relay

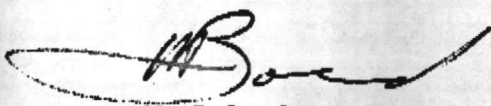


1941	Failed Fuel Select Swithc. Failed A-4 Card.
1149	Failed Tachometer
2054	Failed Fuel Select Switch. Failed A-2 Card.
1139	Failed A-4 Card. Failed Tachometer.
1243	Failed Tachometer
1641	Failed Fuel Select Switch. Failed A-2 Card.

A total of sixty one (61) DIP's were processed through the DIO instrumentation repair shop. Of these, twenty nine (29) DIP's had no faults noted.


The highest failure rate was Tachometer's (12 each). Also failing are: Fuel Select Switch's with twelve (12 each), Liquid Quantity Indicator's with nine (9 each), Speedometers with seven (7 each), Voltmeter's with four (4 each), A-2 card's with three (3 each), A-1 card with one (1 each), K-1 relay with one (1 each), and K-3 relay with one (1 each).

PREPARED BY:

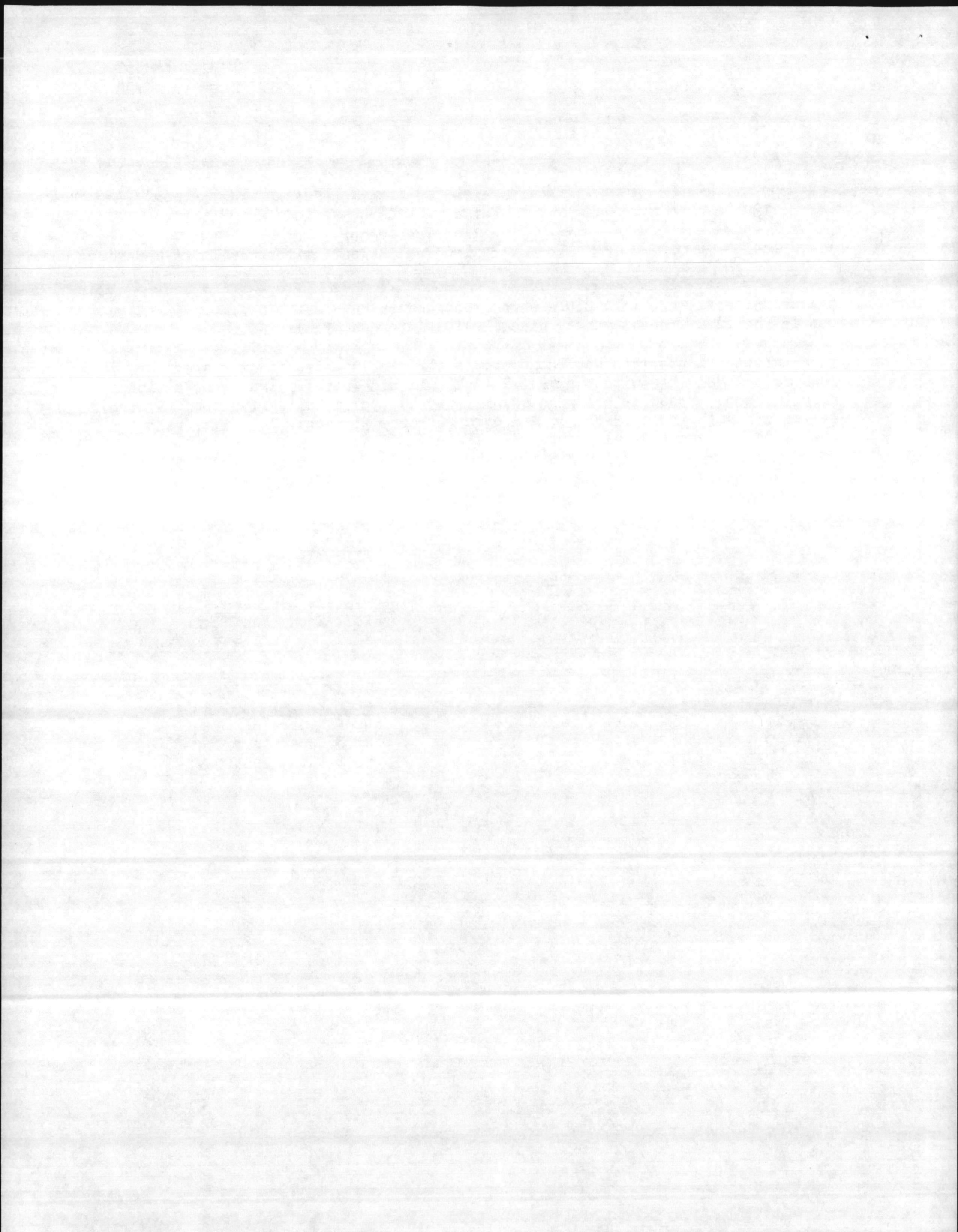


M. Boland
Systems Representative
Fort Knox, Kentucky

CONCURRED BY:



W. Fitzgerald
Site Supervisor
Fort Knox, Kentucky



GENERAL DYNAMICS

Land Systems Division

P.O. Box 527, Warren, Michigan 48090

Inter-Office Memo

LVC:ml/84-220

28 September 1984

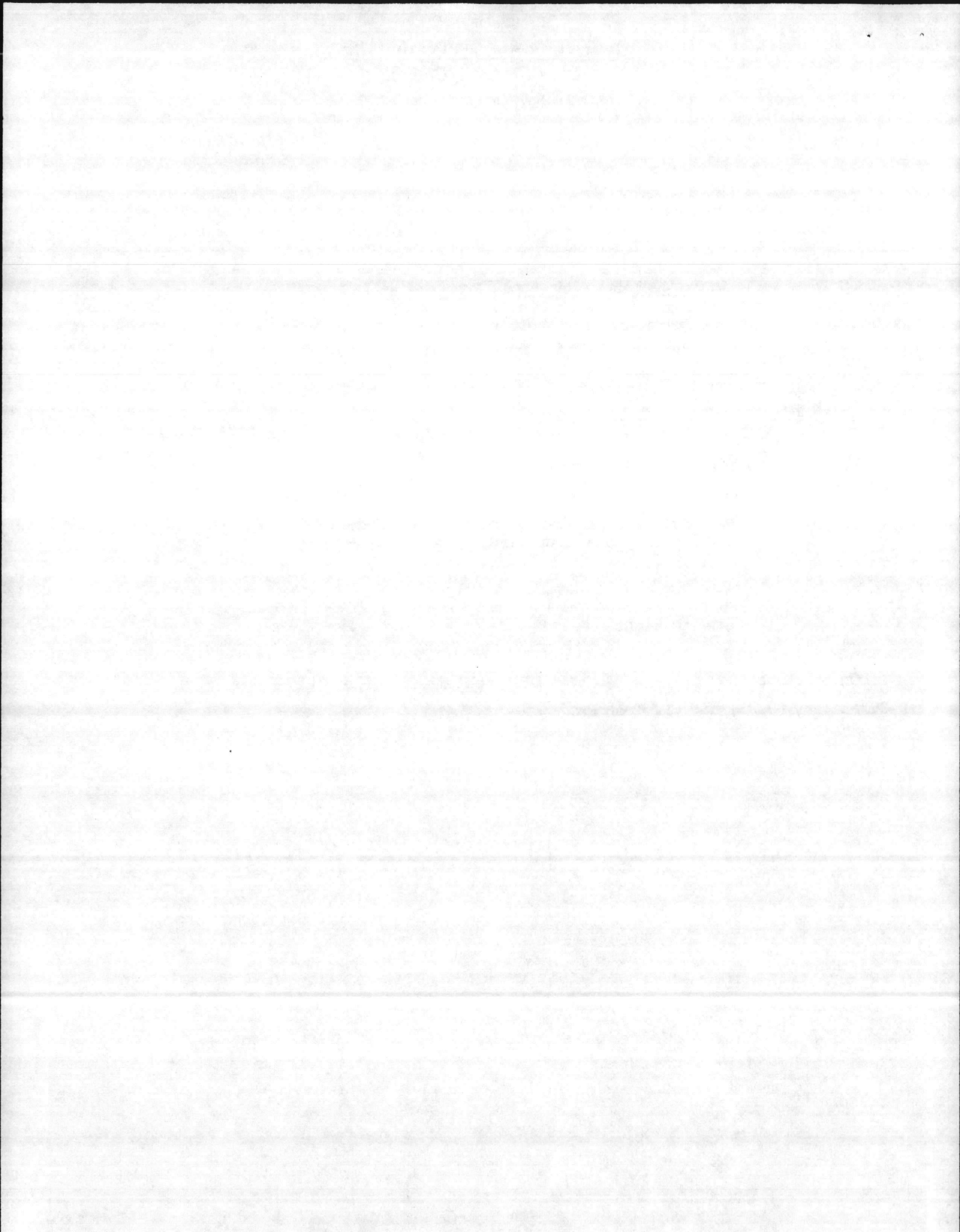
TO: B. Korey
XC: F. Bryan
SUBJECT: Driver's Instrument Panel Problems at APG
REF: Your request of 9/26/84

1. A review of Driver's Instrument Panel (DIP) problems was conducted in accordance with your request.
2. The results reveal the following:
 - a. No significant DIP pattern failures are indicated.
 - b. Most hardware problems attributable to the DIP actually involve only one instrument - such as a Voltmeter.
 - c. Interim Test Reports (ITR's) often are written against a DIP when the problem really is only a transient or temporary signal, such as "engine gas over temperature", which causes a warning lamp to light.

Shown on the attachment are reported DIP problems from the MIE1, Power Train Durability (PTD), and CPT Test Programs.

L. V. Clarkson

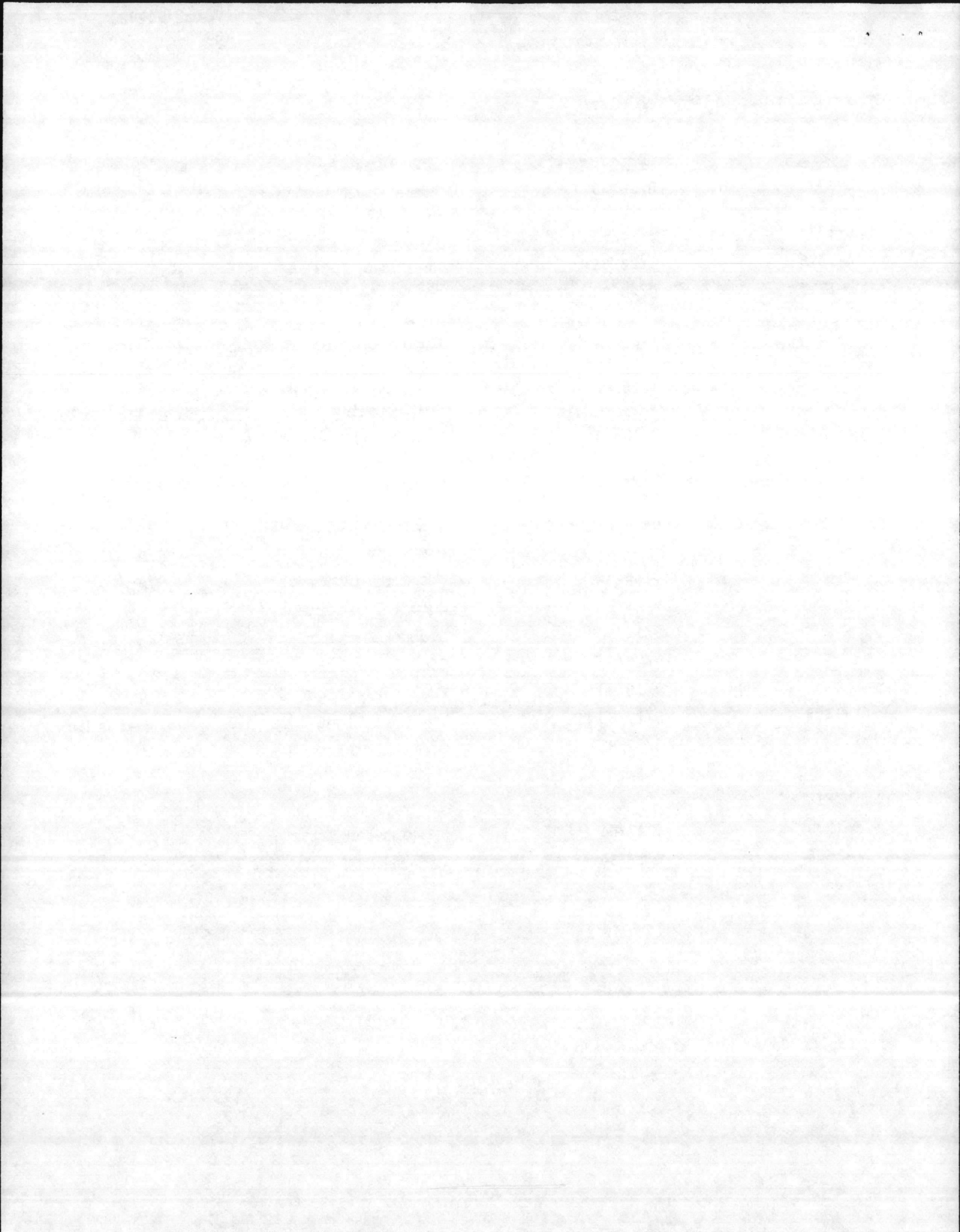
L. V. Clarkson
APG Site Supervisor



Power Train Durability Vehicles:

<u>Vehicles</u>	<u>Date</u>	<u>Problem</u>	<u>Action</u>
L-1371	8/26/83	Trans Low Level Light Flickers	N/A
L-1372	3/16/83	Fuel Gage Fluctuates	N/A
L-1375	11/22/83	Fuel Gage Faulty	Replaced
L-1377	8/25/83	Engine Oil Pres. Light Inop	Replaced Bulb
	11/28/83	Engine Over Speed Light Inop	Replaced Bulb
	11/28/83	1st Shot Fire Bottle Bulb Missing	Installed Bulb
L-1393	9/19/83	Engine Oil Level Light Flickers	N/A
	1/23/84	Odometer/Speedometer Inop	Replaced Trans Sending Unit
	2/ 8/84	Engine Oil Level Light Stays on	N/A
L-1394	8/18/83	Odometer incorrect	N/A*
	9/ 9/83	Odometer incorrect	N/A*
	9/12/83	Speedometer Erratic	Replaced
	9/26/83	Tachometer Error	N/A
	7/19/83	Fuel Fault Light On	N/A*
L-1398	8/17/83	Low Fuel Light Inop	Replaced Bulb
	3/ 3/83	Odometer Error	N/A*
CPT VEHICLES:			
D-1230	4/27/84	Speedometer Error	N/A
L-1584	4/12/84	Tachometer Error	Replaced

*No faults found when checked with Test Set.



REPORTED DIP PROBLEMS - APG

MLE1 Test Vehicles:

<u>Vehicle</u>	<u>Date</u>	<u>Problem</u>	<u>Action</u>
120-7 (D-735)	8/8/83	Tachometer Sticks	N/A
	9/12/83	Voltmeter Error	Replaced
	3/29/84	Trans High Temp Light	N/A
	4/13/84	Gas Over Temp Light	N/A
	4/13/84	Trans High Temp Light	N/A
	6/8/84	Gas Over Temp Light	N/A
120-8 (D-736)	1/24/84	Gas Over Temp Light	N/A
		Fuel Fault Light	N/A
	2/27/84	Voltmeter Error	Replaced
	6/9/84	Hyd. Malfunction Light	N/A
		Fuel Pump Inop Light	N/A
120-9 (D-739)	8/24/83	Odometer Error	N/A
	9/27/83	Fuel Gage Reads Wrong	N/A
	10/12/83	Tachometer Error	N/A
	10/17/83	Fuel Gage Inop	Replaced
		Tachometer Sticks	Replaced
	11/ 8/83	Speedometer Erratic	N/A
	11/15/83	Found DIP Mounting Hardware Missing	Installed
	11/22/83	Fuel Pump Inop Light	N/A
	12/ 2/83	Low Fuel Light Error	N/A
	12/21/83	DIP Mounting Bushings Missing	Installed
	2/15/84	Low Fuel Light Error	N/A
	3/ 3/84	Low Fuel Light Error	N/A
	4/10/84	DSESTS Indicated Bad Fuel Gage	Replaced
	5/ 1/84	Fuel Gage Became Cloudy, All Warning Lights On	Replaced DIP
	5/20/84	Fuel Pump Inop Light	DIP Tested OK

