

## R-MC ENGINE TEST CONDUCTED AT NORTH ISLAND

## BASELINE PRIOR TO CLEANING

07:03 12/01/88 Performance Disp LM2500

SN: GGA-701

| Targets         |                         | Obs Units  | Corr | Miscellaneous |            |
|-----------------|-------------------------|------------|------|---------------|------------|
| 5.4 -           | NGG                     | 7002 RPM   | 6926 | T2Bolt        | 70.4 DegF  |
| 11.15 PSIG (G5) | NPT                     | 0 RPM      |      | PBar          | 14.76 PSIA |
| 11.49 PSIG (G6) | <sup>IUEL</sup> Wf Cell | 1683 PPH   | 1725 | RHum          | 3.7 %      |
| 17.23 PSIG (G7) | Wf Verf                 | 0 PPH      |      | USU           | 30.5 Deg   |
| 22.09 PSIG (G8) | T5.4                    | 763.1 DegF |      | Vib1          | .7 Mils    |
| 24.70 PSIG (G9) | LOP                     | 36.6 PSIG  | 57.2 | Vib2          | 2.0 Mils   |
| 28.12 PSIG (GA) | LOT                     | 131.6 DegF |      | Vib3          | 7.1 Mils   |
| 32.14 PSIG (GB) | PT54                    | 3.5 PSIG   |      | Vib3A         | 1.7 Mils   |
| 36.58 PSIG (GC) | FN                      | ***** Lbs  |      | Vib4          | .4 Mils    |
|                 |                         |            |      | PLA           | 34.3 Deg   |

Constant RPM  
15 gallons/injection  
3-4 minutes between  
injections.

\* Gas Generator Limits Active \*

SSN: GGA-701

MESSAGE  
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4:31:29 12/01/88 Performance Disp LM2500

SN:GGA-701

| Targets           |         | Obs   | Units | Corr | Miscellaneous    |
|-------------------|---------|-------|-------|------|------------------|
| PT5.4 -           | NGG     | 7001  | RPM   | 6921 | T2Bolt 71.2 DegF |
| - 11.15 PSIG (G5) | NFT     | 0     | RPM   |      | PEar 14.76 PSIG  |
| - 11.49 PSIG (G6) | WF Cell | 1618  | PPH   | 1661 | RHum 3.3 %       |
| - 17.23 PSIG (G7) | WF Verf | 0     | PPH   |      | OSU 30.2 Deg     |
| - 22.09 PSIG (G8) | TS.4    | 645.4 | DegF  |      | Vib1 1.0 Mils    |
| - 24.70 PSIG (G9) | LOP     | 31.8  | PSIG  | 55.7 | Vib2 2.0 Mils    |
| - 28.12 PSIG (GA) | LOT     | 173.9 | DegF  |      | Vib3 6.9 Mils    |
| - 32.14 PSIG (GB) | PT54    | 3.6   | PSIG  |      | Vib3A 2.2 Mils   |
| - 36.59 PSIG (GC) | FN      | ***** | Lbs   |      | Vib4 .4 Mils     |
|                   |         |       |       |      | PLA 34.3 Deg     |

After first injection.

\* Gas Generator Limits Active \*

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14:51:48 12/01/88 Performance Disc LM2500

SN:GGA-701

| Targets           |         | Obs Units Corr |      | Miscellaneous |            |
|-------------------|---------|----------------|------|---------------|------------|
| PT5.4 -           | NGG     | 7001 RPM       | 6924 | T2Bolt        | 70.6 DegF  |
| - 11.14 PSIG (G5) | NPT     | 0 RPM          |      | PBar          | 14.75 PSIG |
| - 11.49 PSIG (G6) | Wf Cell | 1624 PPH       | 1666 | RHum          | 3.3 %      |
| - 17.23 PSIG (G7) | Wf Verf | 0 PPH          |      | USU           | 30.2 Deg   |
| - 22.09 PSIG (G8) | T5.4    | 637.8 DegF     |      | Vib1          | .9 Mils    |
| - 24.70 PSIG (G9) | LOP     | 31.7 PSIG      | 55.7 | Vib2          | 1.9 Mils   |
| - 28.11 PSIG (GA) | LOT     | 174.3 DegF     |      | Vib3          | 6.4 Mils   |
| - 32.13 PSIG (GB) | PT54    | 3.6 PSIG       |      | Vib3A         | 2.5 Mils   |
| - 36.59 PSIG (GC) | FN      | ***** Lbs      |      | Vib4          | .4 Mils    |
|                   |         |                |      | PLA           | 34.4 Deg   |

After second injection.

\* Gas Generator Limits Active \*

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5:12:49 12/01/88 Performance Disp LM2500

SN:GGA-701

| Targets           |          | Obs Units Corr |      | Miscellaneous |            |
|-------------------|----------|----------------|------|---------------|------------|
| PT5.4 -           | NGG      | 7002 RPM       | 6923 | T2Bolt        | 70.9 DegF  |
| - 11.14 PSIG (G5) | NPT      | 0 RPM          |      | PBar          | 14.75 PSIG |
| - 11.49 PSIG (G6) | ✓Wf Cell | 1616 PPH       | 1658 | RHum          | 3.4 %      |
| - 17.23 PSIG (G7) | Wf Verf  | 0 PPH          |      | USU           | 30.2 Deg   |
| - 22.09 PSIG (G8) | ✓T5.4    | 639.5 DegF     |      | Vib1          | .8 Mils    |
| - 24.70 PSIG (G9) | LOP      | 31.7 PSIG      | 55.7 | Vib2          | 2.2 Mils   |
| - 28.11 PSIG (GA) | LOT      | 174.6 DegF     |      | Vib3          | 6.4 Mils   |
| - 32.13 PSIG (GB) | PT54     | 3.6 PSIG       |      | Vib3A         | 2.2 Mils   |
| - 38.59 PSIG (GC) | FN       | ***** Lbs      |      | Vib4          | .4 Mils    |
|                   |          |                |      | PLA           | 34.4 Deg   |

After third injection.

\* Gas Generator Limits Active \*

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15:33:08 12/01/88 Performance Disp LM2500

SN:GGA-701

| Targets           |         | Obs Units Corr |      | Miscellaneous |            |
|-------------------|---------|----------------|------|---------------|------------|
| PT5.4 -           | NGG     | 6999 RPM       | 6916 | T2Bolt        | 71.5 DegF  |
| - 11.14 PSIG (G5) | NPT     | 0 RPM          |      | PBar          | 14.75 PSIG |
| - 11.49 PSIG (G6) | WF Cell | 1623 PPH       | 1668 | RHum          | 5.1 %      |
| - 17.23 PSIG (G7) | WF Verf | 0 PPH          |      | USQ           | 30.2 Deg   |
| - 22.09 PSIG (G8) | T5.4    | 639.0 DegF     |      | Vib1          | .8 Mils    |
| - 24.70 PSIG (G9) | LOP     | 31.6 PSIG      | 55.6 | Vib2          | 2.2 Mils   |
| - 28.11 PSIG (GA) | LOT     | 175.5 DegF     |      | Vib3          | 6.8 Mils   |
| - 32.13 PSIG (GB) | PT54    | 3.6 PSIG       |      | Vib3A         | 1.4 Mils   |
| - 36.59 PSIG (GC) | FN      | ***** Lbs      |      | Vib4          | .4 Mils    |
|                   |         |                |      | PLA           | 34.3 Deg   |

After fourth injection.

\* Gas Generator Limits Active \*

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LAST INJECTION PRIOR TO 10L5

15:55:32 12/01/88 Performance Disp LM2500

SN:GGA-701

| Targets           |         | Obs   | Units | Corr | Miscellaneous |            |
|-------------------|---------|-------|-------|------|---------------|------------|
| PT5.4 -           | NGG     | 6999  | RPM   | 6920 | T2Bolt        | 70.9 DegF  |
| - 11.14 PSIG (G5) | NPT     | 0     | RPM   |      | PBar          | 14.76 PSIG |
| - 11.49 PSIG (G6) | WF Cell | 1620  | PPH   | 1662 | RHum          | 5.1 %      |
| - 17.23 PSIG (G7) | WF Varf | 0     | PPH   |      | USQ           | 30.2 Deg   |
| - 22.09 PSIG (G8) | T5.4    | 637.8 | DegF  |      | Vib1          | .8 Mils    |
| - 24.70 PSIG (G9) | LOP     | 31.7  | PSIG  | 55.6 | Vib2          | 2.0 Mils   |
| - 28.11 PSIG (GA) | LOT     | 173.6 | DegF  |      | Vib3          | 6.6 Mils   |
| - 32.13 PSIG (GB) | PT54    | 3.6   | PSIG  |      | Vib3A         | 2.7 Mils   |
| - 36.58 PSIG (GC) | FN      | ***** | Lbs   |      | Vib4          | .4 Mils    |
|                   |         |       |       |      | PLA           | 34.3 Deg   |

After fifth injection.

\* Gas Generator Limits Active \*

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Want to IDLS & BACK UP TO 7000 RPM FOR 2min

19:17:47 12/01/88 Performance Disp LM2500

SN:GGA-701

| Targets           |                            | Obs Units  | Corr | Miscellaneous    |
|-------------------|----------------------------|------------|------|------------------|
| PT5.4 -           | NGG                        | 7004 RPM   | 6931 | T2Bolt 70.1 DegF |
| - 11.14 PSIG (G5) | NPT                        | 0 RPM      |      | PBar 14.76 PSIG  |
| - 11.49 PSIG (G6) | <sup>FUEL</sup><br>WF Cell | 1633 PPH   | 1673 | RHum 8.4 %       |
| - 17.23 PSIG (G7) | WF Verf                    | 0 PPH      |      | USU 30.2 Deg     |
| - 22.09 PSIG (G8) | T5.4                       | 642.7 DegF |      | Vib1 .8 Mils     |
| - 24.70 PSIG (G9) | LOP                        | 32.3 PSIG  | 55.9 | Vib2 2.2 Mils    |
| - 28.11 PSIG (GA) | LOT                        | 168.2 DegF |      | Vib3 6.5 Mils    |
| - 32.13 PSIG (GB) | PT54                       | 3.6 PSIG   |      | Vib3A .8 Mils    |
| - 36.58 PSIG (GC) | FN                         | ***** Lbs  |      | Vib4 .4 Mils     |
|                   |                            |            |      | PLA 34.3 Deg     |

Sixth injection at idle  
to verify spray pattern.

\* Gas Generator Limits Active \*

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During    During  
First    Last  
Injection Injection

OBSERVED DATA :

|               |      | G1/P1   | G2/P2   |
|---------------|------|---------|---------|
| NGG           | RPM  | 7002.   | 7001.   |
| NPT           | RPM  | 0.      | 0.      |
| PLA           | Deg  | 34.3    | 34.3    |
| Thrust        | Lbs  | 999999. | 999999. |
| Scav B Sump   | DegF | 102.8   | 103.7   |
| Scav C Sump   | DegF | 92.8    | 93.1    |
| Scav D Sump   | DegF | 73.5    | 74.5    |
| Scav G Sump   | DegF | 78.1    | 80.6    |
| Lub Oil Temp  | DegF | 172.8   | 174.3   |
| Scav OilT     | DegF | 191.8   | 192.5   |
| FuelInT       | DegC | 26.3    | 28.1    |
| T5.4          | DegF | 702.2   | 617.5   |
| T2Bolt        | DegF | 70.8    | 66.8    |
| TT3.1         | DegF | 437.0   | 414.5   |
| TT3.2         | DegF | 436.6   | 415.4   |
| TT3.3         | DegF | 430.1   | 414.9   |
| TT3.4         | DegF | 438.3   | 421.5   |
| TT3.5         | DegF | 440.5   | 426.2   |
| T3 Avg        | DegF | 436.5   | 418.5   |
| Cell Wf       | PPH  | 1623.   | 1637.   |
| Verf Wf       | PPH  | 0.      | 0.      |
| FuelInP       | PSIG | 40.8    | 40.9    |
| FuelManP      | PSIG | 401.8   | 400.7   |
| Lop           | PSIG | 31.9    | 31.8    |
| Ps3           | PSIG | 46.1    | 47.3    |
| Pt2           | IN20 | -.21    | -.22    |
| Pt54          | PSIG | 3.6     | 3.7     |
| CSumpP        | PSID | .9      | .9      |
| PCellF        | IN20 | -.25    | -.24    |
| PCellR        | IN20 | -.35    | -.37    |
| PBar          | PSIA | 14.76   | 14.75   |
| Specific Num. |      | 4.1     | 4.1     |
| RHum          | %    | 3.3     | 3.3     |
| VSU           | Deg  | 30.2    | 30.1    |
| FFU1          | Mils | .9      | 1.0     |
| CREN2         | Mils | 1.9     | 2.0     |
| CREU3         | Mils | 7.0     | 6.3     |
| TMEU4         | Mils | .4      | .4      |

