

## Comparison of June and September Operation of SBE

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AGS STUDIES REPORTDate 6/9/83 and 9/30/83Time 0615 and 2300Experimenters I-H Chiang, J.W. Glenn, J. Ryan, A. Soukas and W-T WengReported by J.W. GlennSubject Comparison of June and September Operation of SBEOBSERVATIONS AND CONCLUSION

The June 9 SBE run was monitored and documented by programs CLYDE and GRITTY, while the September 13 run was with program GRYDE. Comparison of the performance requires some conversion, as some numbers used different calibration constants or methods of calculation. The following is a tabulation of the two runs and the ratios of the performances.

|                                      | <u>6/9/83 - 0615</u> |                  | <u>9/30/83 - 2300</u> | <u>Ratio</u>        |
|--------------------------------------|----------------------|------------------|-----------------------|---------------------|
|                                      | <u>Output</u>        | <u>Converted</u> | <u>Output</u>         | <u>9/30<br/>6/9</u> |
| <u>FEB (GRITTY)</u>                  |                      |                  |                       |                     |
| LCBM                                 | 3.75 TP              |                  | 1.64 TP               | 0.4                 |
| Ring Loss                            | 3.0%                 |                  | 6.5%                  | 2                   |
| XTEFF                                | 105.1%               |                  | 108.3%                | 1.0                 |
| Shave                                | 8.7%                 |                  | 8.9%                  | 1.0                 |
| H5 Loss                              | 1.3%                 |                  | 3.8%                  | 3                   |
| H10 Loss                             | 0.4%                 |                  | 2.4%                  | 6                   |
| <u>FEB Loss Monitors<sup>1</sup></u> |                      |                  |                       |                     |
| U015                                 | 12 Counts            | 5.4 Counts       | 8 Counts              | 1.5                 |
| U116                                 | 15 "                 | 6.7 "            | 6 "                   | 0.9                 |
| U135                                 | 18 "                 | 8.1 "            | 8 "                   | 1.0                 |
| U157                                 | 45 "                 | 20.2 "           | 19 "                  | 0.9                 |

|                          | <u>6/9/83 - 0615</u> |                  | <u>9/30/83 - 2300</u> | <u>Ratio</u>              |
|--------------------------|----------------------|------------------|-----------------------|---------------------------|
|                          | <u>Output</u>        | <u>Converted</u> | <u>Output</u>         | <u>9/30</u><br><u>6/9</u> |
| <u>SBE (CLYDE)</u>       |                      |                  |                       |                           |
| XEFF                     | 11.44%               | 137.3%           | 124.2 %               | 0.9                       |
| XINEF                    | 2.51%                |                  | 2.4 %                 | 1.0                       |
| F5                       | 0.88%                | 2.0%             | 0.86%                 | 0.4                       |
| F10                      | 0.44%                | 1.1%             | 1.58%                 | 1.4                       |
| D Transport <sup>3</sup> |                      | 90 %             | 88 %                  | 1.0                       |

|                                       |           |           |          |      |
|---------------------------------------|-----------|-----------|----------|------|
| <u>SEB Loss Monitors</u> <sup>2</sup> |           |           |          |      |
| CL03L                                 | 34 Counts | 17 Counts | 0 Counts | 0.5  |
| CL06L                                 | 88 "      | 44 "      | -1 "     | ---  |
| CL09L                                 | 208 "     | 104 "     | 8 "      | 0.08 |
| CL13L                                 | 126 "     | 63 "      | 33 "     | 0.5  |
| CL16L                                 | 210 "     | 105 "     | 49 "     | 0.5  |
| DL17L                                 | 107 "     | 54 "      | 45 "     | 0.8  |
| DL20L                                 | 63 "      | 32 "      | 449 "    | 14   |
| DL24L                                 | 116 "     | 58 "      | 85 "     | 1.5  |
| DL27L                                 | 213 "     | 107 "     | 103 "    | 1.0  |
| DL30L                                 | 154 "     | 77 "      | 67 "     | 0.9  |
| DL33L                                 | 231 "     | 116 "     | 86 "     | 0.7  |
| DL36L                                 | 300 "     | 150 "     | 214 "    | 1.4  |

<sup>1</sup>Counts scaled to lower LCBM reading.

<sup>2</sup>Counts scaled to lower SBE extracted beam.

<sup>3</sup>D line transport efficiency quoted for 6/9 from data for plot of transport efficiency vs intensity.

Conclusions

1. Fast extraction losses appear a factor of two worse in September. Transport losses are similar. Both should have been lower in September as the internal beam was one-half of the June intensity.

2. SBE extraction probably was of similar efficiency. Due to the lower intensity it should also have been lower. Transport efficiency is similar for June and September at the same intensity. The recorded losses are generally lower.

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