UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K/A

Amendment No. 2

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended: September 30, 2004

OR

□ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from_____ to ____

Commission File Number: 0-11412

AMTECH SYSTEMS, INC.

(Exact name of registrant as specified in its charter)

Arizona (State or other jurisdiction of incorporation or organization)

131 South Clark Drive, Tempe, Arizona (Address of principal executive offices) 86-0411215 (I.R.S. Employer Identification No.)

> 85281 (Zip Code)

Registrant's telephone number, including area code: 480-967-5146

Securities registered pursuant to Section 12(b) of the Act: None

Securities registered pursuant to Section 12(g) of the Act:

Common Stock, \$.01 Par Value (Title of Class)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. \boxtimes Yes \Box No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12(b)(2). 🗆 Yes 🖾 No

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EXPLANATORY NOTE TO AMENDMENT NO. 2 ON FORM 10-K/A

This is Amendment No. 2 to the Registrant's annual report on Form 10-K for the year ended September 30, 2004, which was originally filed with the Securities and Exchange Commission on January 13, 2005 as amended by Amendment No. 1 filed with the Securities and Exchange Commission on January 28, 2005. This Amendment No. 2 is being filed in response to comments provided by the SEC staff in a Comment Letter dated September 19, 2005.

Part II, Item 9A, "Controls and Procedures" of the Form 10-K has been modified or revised in this Amendment No. 2 to reflect modifications and/or additional information requested in the SEC Comment Letter. This amendment is also being filed to update the exhibit index in Item 15 of Part IV.

This Amendment No. 2 does not modify or update disclosures presented in the original Form 10-K, except as required to reflect the modifications or additional information in Part II, Item 9A, "Controls and Procedures" requested in the SEC Comment Letter. Amendment No. 2 speaks as of the original filing date of the Form 10-K on January 13, 2005 and does not modify or update disclosures in the Form 10-K, including the nature and character of such disclosures, to reflect events occurring or items discovered after the original filing date of the Form 10-K. Accordingly, this Amendment No. 2 should be read in conjunction with the Company's filings made with the Securities and Exchange Commission subsequent to the original filing date of the Form 10-K, including any amendments to those filings.

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AMTECH SYSTEMS, INC.

AMENDMENT NO. 2 TO FORM 10-K FOR THE FISCAL YEAR ENDED SEPTEMBER 30, 2004

PART II

9A <u>Controls and Procedures</u>

Signatures

ITEM 9A CONTROLS AND PROCEDURES

Our management, including our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), has carried out an evaluation of the effectiveness of our disclosure controls and procedures as of September 30, 2004, pursuant to Exchange Act Rules 13a-15(e) and 15(d)-15(e). Based upon that evaluation, our CEO and CFO have concluded that as of such date, our disclosure controls and procedures in place were effective as of the end of the period covered by this annual report.

There have been no changes in our internal controls over financial reporting during the fourth quarter of fiscal 2004 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

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October 18, 2005

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

AMTECH SYSTEMS, INC.

By: /s/ Jong S. Whang

Jong S. Whang, President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints JONG S. WHANG and ROBERT T. HASS, and each of them, his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully and to all intents and purposes as he might or could do in person hereby ratifying and confirming all that said attorneys-in-fact and agents, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report on Form 10-K has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

| SIGNATURE | TITLE | DATE |
|---------------------------------------|---|------------------|
| /s/ Jong S. Whang | Chairman of the Board, President Oc and Chief Executive Officer (Principal Executive Officer) | October 18, 2005 |
| Jong S. Whang | | |
| /s/ Robert T. Hass | Vice President – Finance, Chief — Financial Officer and Director (Principal Financial & Accounting Officer) | October 18, 2005 |
| Robert T. Hass | | |
| /s/ Robert Averick | Director | October 18, 2005 |
| Robert Averick | | |
| * | Director | October 18, 2005 |
| Robert F. King | | |
| * By Robert T. Hass, attorney-in-fact | | |

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PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K

| EXHIBIT NO. | DESCRIPTION |
|-------------|---|
| 31.1 | Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as Amended. Filed herewith. |
| 31.2 | Certification Pursuant to Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as Amended. Filed herewith. |
| 32.1 | Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. Filed herewith. |
| 32.2 | Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. Filed herewith. |
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AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, As Amended

I, Jong S. Whang, certify that:

1. I have reviewed this Annual Report on Form 10-K of Amtech Systems, Inc.;

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial position, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and we have:

(a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

(b) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(c) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By /s/ Jong S. Whang

Jong S. Whang President and Chief Executive Officer Amtech Systems, Inc.

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES CERTIFICATION PURSUANT TO RULE 13a-14(a)/15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, As Amended

I, Robert T. Hass, certify that:

1. I have reviewed this Annual Report on Form 10-K of Amtech Systems, Inc.;

2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;

3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial position, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and we have:

(a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;

(b) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(c) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

(a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By /s/ Robert T. Hass

Robert T. Hass Vice President Finance and Chief Financial Officer Amtech Systems, Inc.

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Amtech Systems, Inc. (the "Company") on Form 10-K for the period ended September 30, 2004, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jong S. Whang, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

By /s/ Jong S. Whang

Jong S. Whang President and Chief Executive Officer

AMTECH SYSTEMS, INC. AND ITS SUBSIDIARIES

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Amtech Systems, Inc. (the "Company") on Form 10-K for the period ended September 30, 2004, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Robert T. Hass, Vice President – Finance and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

By /s/ Robert T. Hass

Robert T. Hass Vice President Finance and Chief Financial Officer