

# SAMPLE REPORT PRINTOUT - SSI 5541

Item: 55 Stabilizers – 40 Rudder – 41 Rudder Edge  
SSI: 55-41-01  
Pages Printed: 1 to 8



SSI Selection

SSI NO.  
55-00-00

Item Description  
STABILIZERS

SSI Selection

| ATA No   | Description    | Does Item contribute significantly to carrying <b>FLIGHT</b> loads | Does Item contribute significantly to carrying <b>GROUND</b> loads? | Does Item contribute significantly to carrying <b>PRESSURE</b> loads? | Does Item contribute significantly to carrying <b>CONTROL</b> loads? | Could the failure of the Item affect the structural integrity necessary for the <b>SAFETY</b> of the aircraft? | SSI? |
|----------|----------------|--|---|---|--|--|------|
| 55-00-00 | STABILIZERS    | Yes  | Yes   | No  | Yes  | Yes  | No   |
| 55-40-00 | Rudder         | Yes  | Yes   | No  | Yes  | Yes  | No   |
| 55-41-00 | Rudder Edge    | Yes  | Yes   | No  | Yes  | Yes  | No   |
| 55-41-01 | Rudder Surface | Yes  | Yes   | No  | Yes  | Yes  | Yes  |

**Analyst:** Jon Doe  
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**Working Group:** SWG  
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Items Summary

SSI NO.  
55-00-00

Item Description  
STABILIZERS

Items Summary

| ATA No   | Description    | Part Number | Drawing Number   | Location            | Zone | Access         | Environmental Conditions | Remarks |
|----------|----------------|-------------|------------------|---------------------|------|----------------|--------------------------|---------|
| 55-00-00 | STABILIZERS    |             |                  |                     |      |                |                          |         |
| 55-40-00 | Rudder         |             |                  |                     |      |                |                          |         |
| 55-41-00 | Rudder Edge    |             |                  |                     |      |                |                          |         |
| 55-41-01 | Rudder Surface | 12345-7     | 12345-7<br>REV 3 | Vertical Stabilizer | 300  | NOT APPLICABLE | Exposed                  |         |

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MASTER FOR ACME AIRCRAFT, TURBOFAN 77 - STRUCTURAL ANALYSIS (REVISION 2011.1)

Environmental Deterioration (Metals)

SSI NO.  
55-41-01

Item Description  
Rudder Surface

Materials

| Name               | Heat Treatment | Specification | Surface Finish | Comments   |
|--------------------|----------------|---------------|----------------|--|
| AL-ALLOY 7075-T731 | T 731          | AMS7075       | CLAD           | Anodized, epoxy paint and skidrol resistant paint applied. |

| Potential Corrosion Types |  | Potential Corrosion Types Rating |                              |                          | Protection Rating |          |         |
|---------------------------|--|----------------------------------|------------------------------|--------------------------|-------------------|----------|---------|
|                           |  | High Sensitivity Material        | Average Sensitivity Material | Low Sensitivity Material | Limited           | Adequate | Special |
| Intergranular             | 2                                      |                                  |                              |                          |                   |          |         |
| Pitting                   | 2                                      |                                  |                              |                          |                   |          |         |
| Uniform                   | 2                                      |                                  |                              |                          |                   |          |         |
| Galvanic                  | 2                                      |                                  |                              |                          |                   |          |         |
| Fretting                  | 2                                      | 1                                | 2                            | 3                        | 1                 | 2        | 3       |
| Erosion                   | 2                                      |                                  |                              |                          |                   |          |         |
| Filliform                 | 2                                      |                                  |                              |                          |                   |          |         |
| Microbiological           | 3                                      |                                  |                              |                          |                   |          |         |
| Crevice                   | 2                                      |                                  |                              |                          |                   |          |         |
| Select lowest             | 2                                      |                                  |                              |                          |                   |          |         |
| SCC Rating                | Sensitive and pre-stressed material    | 1                                | 1                            | 1                        | 2                 |          |         |
|                           | Sensitive material only                | 2                                | 1                            | 2                        | 3                 |          |         |
|                           | Material not sensitive                 | 3                                | 2                            | 3                        | 3                 |          |         |
| Environmental Rating      | Exposure to highly corrosive substance | 1                                | 1                            | 1                        | 2                 |          |         |
|                           | Exposure to corrosive substance        | 2                                | 1                            | 2                        | 3                 |          |         |
|                           | No exposure                            | 3                                | 2                            | 3                        | 3                 |          |         |

Interval Determination

| Overall Corrosion Rating        |   |   |   |   | Calculated Rating       | 2  |
|---------------------------------|---|---|---|---|-------------------------|--|
|                                 | 1 | 2 | 3 |   | In - Service Experience | Less than 2% findings in the last 10 years on similar models |
| Environmental Protection Rating | 1 | 1 | 1 | 2 | Remarks                 |  |
|                                 | 2 | 1 | 2 | 3 |                         |  |
|                                 | 3 | 2 | 3 | 3 |                         |  |

Tasks

| Task # | Type | Description  | Initial Interval | Repeat Interval | CPCP | Zonal | Access                                     | Remarks |
|--------|------|--|------------------|-----------------|------|-------|--|---------|
| 001    | DET  | Detailed inspection of rudder hinges for evidence of environmental deterioration.    | 8 Yr             | 8 Yr            | Yes  | N/A   | Rudder/v stab cove panel removal required. |         |
| 002    | GVI  | General visual inspection of rudder hinges for signs of environmental deterioration. | 4 Yr             | 4 Yr            | Yes  | Yes   |  |         |

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MASTER FOR ACME AIRCRAFT, TURBOFAN 77 - STRUCTURAL ANALYSIS (REVISION 2011.1)

Environmental Deterioration (Non-Metals)

SSI NO.  
55-41-01

Item Description  
Rudder Surface

Materials

| Name                               | Specification | Surface Finish | Comments |
|------------------------------------|---------------|----------------|----------|
| Carbon Fiber RP/Metallic Honeycomb | 1234          | Epoxy Paint    | GF Layer |

Damage and Composition Ratings

| Potential Environment Damage       |   | Potential Environment Damage Rating |                              |                          | Composition Rating                     |   |                |
|------------------------------------|---|-------------------------------------|------------------------------|--------------------------|--|---|----------------|
|                                    |   | High Sensitivity Material           | Average Sensitivity Material | Low Sensitivity Material | Thin skin laminate with honeycomb core | Thick skin laminate with honeycomb core | Solid Laminate |
| Humidity/Moisture                  | 2   |                                     |                              |                          |  |   |                |
| Solar (heat, IR and/or UV)         | 3   |                                     |                              |                          |  |   |                |
| Dissimilar Material                | 1   |                                     |                              |                          |  |   |                |
| Lightning                          | 2   |                                     |                              |                          |  |   |                |
| Environment Cycling                | 2   |                                     |                              |                          |  |   |                |
| Erosion                            | 2   |                                     |                              |                          |  |   |                |
| Rain, Hail and/or Sleet            | 3   |                                     |                              |                          |  |   |                |
| <b>Select lowest</b>               | <b>1</b>  |                                     |                              |                          |  |   |                |
| <b>Damage Detectability Rating</b> | Detection complex and difficult                               | 1                                   | 1                            | 1                        | 1                                      | 1                                       | 2              |
|                                    | Detection not complex and access good                         | 2                                   | 1                            | 2                        | 1                                      | 2                                       | 3              |
|                                    | Material not damage sensitive and operating safety unaffected | 3                                   | 2                            | 3                        | 2                                      | 3                                       | 3              |
| <b>Overall Damage Rating</b>       |   |                                     |                              |                          | 1                                      | 1                                       | 2              |
|                                    |   |                                     |                              |                          | 2                                      | 2                                       | 3              |
|                                    |   |                                     |                              |                          | 3                                      | 3                                       | 3              |

Environmental and Protection

Interval Determination

|                      |                                  |   |   | Protection Rating |          |         | Damage/Composition Rating       |   |   |   | Calculated Rating | In - Service Experience<br>Less than 2% inspection findings in the last 10 years on similar models. |
|----------------------|----------------------------------|---|---|-------------------|----------|---------|---------------------------------|---|---|---|-------------------|---|
|                      |                                  |   |   | Limited           | Adequate | Special |                                 |   |   |   | AD Impact         |   |
|                      |                                  |   |   | 1                 | 2        | 3       |                                 |   |   |   |                   |   |
| Environmental Rating | Exposure to adverse environment  | 1 | 1 | 1                 | 2        |         | Environmental Protection Rating | 1 | 1 | 1 | 2                 |   |
|                      | Exposure to moderate environment | 2 | 1 | 2                 | 3        |         |                                 | 2 | 1 | 2 | 3                 |   |
|                      | No exposure                      | 3 | 2 | 3                 | 3        |         |                                 | 3 | 2 | 3 | 3                 |   |

Tasks

| Task # | Type | Description   | Initial Interval | Repeat Interval | Zonal | Access  | Remarks  |
|--------|------|---|------------------|-----------------|-------|---|--|
| 003    | GVI  | General visual inspection of external rudder surface for evidence of environmental deterioration. | 4 Yr             | 4 Yr            | Yes   | Cove panel removed                            |  |
| 004    | SDI  | Detailed inspection of rudder internal surface for evidence of environmental deterioration.       | 8 Yr             | 8 Yr            | N/A   | Rudder cove panel and panels 1, 2, 3 removed. | Requires use of boroscope to inspect honeycomb and HC/Rudder skin bonding. |

|                         |                           |             |                                    |                                |                          |                     |
|-------------------------|---------------------------|-------------|------------------------------------|--------------------------------|--------------------------|---------------------|
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Accidental Damage (Metals)

SSI NO.  
55-41-01

Item Description  
Rudder Surface

Damage Sources Evaluation

| Damage Source             | Likely | Unlikely | Possibility of Damage | Residual Strength | Visibility of Damage | Sensitivity to Damage Growth | Remarks/Damage                |
|---------------------------|--------|----------|-----------------------|-------------------|----------------------|------------------------------|-------------------------------|
| Ground handling equipment |        | x        |                       |                   |                      |                              |                               |
| Cargo handling equipment  |        | x        |                       |                   |                      |                              |                               |
| Maintenance procedure     |        | x        |                       |                   |                      |                              |                               |
| Operator's procedures     |        | x        |                       |                   |                      |                              |                               |
| Weather effects           | x      |          | 2                     |                   | 2                    |                              | Hail damage is possible       |
| Bird strike               | x      |          | 3                     |                   | 3                    |                              | Damage will be highly visible |
| Landing debris            |        | x        |                       |                   |                      |                              |                               |
| Spillage                  |        | x        |                       |                   |                      |                              |                               |
| Lightning strike          | x      |          | 3                     |                   | 1                    |                              | Entry/Exit points             |
| Other                     |        | x        |                       |                   |                      |                              |                               |

Possibility of Damage and Residual Strength

|                               |              |
|-------------------------------|--------------|
| Possibility of Damage         | 2 - Moderate |
| Residual Strength             |              |
| Possibility/Residual Strength |              |

Visibility of Damage and Sensitivity to Damage Growth

|   |         |
|---|---------|
| Visibility of Damage                        | 1 - Low |
| Sensitivity to Damage Growth                |         |
| Timely Detection (Visibility/Damage Growth) |         |

Overall

|                       |  |
|-----------------------|--|
| Overall Rating        |  |
| In-Service Experience | No evidence of lightning strike in the last 10 years of finding data                         |
| Corrosion Impact      | Yes  |
| Damage Consequence    | Hinge surface protection damaged. Possible corrosion due to pitting/erosion of hinge surface |
| Remarks               |  |

Tasks

| Task # | Type | Description  | Initial Interval | Repeat Interval | Zonal | Access                     | Remarks |
|--------|------|--|------------------|-----------------|-------|----------------------------|---------|
| 005    | GVI  | General visual inspection of rudder hinges for signs of accidental damage. | 4 Yr             | 4 Yr            | Yes   | Rudder cove panel removed. |         |
| 006    | DET  | Detailed inspection of rudder hinges for evidence of accidental damage.    | 8 Yr             | 8 Yr            | N/A   | Cove panel removed         |         |

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Accidental Damage (Non-Metals)

SSI NO.  
55-41-01

Item Description  
Rudder Surface

Damage Sources Evaluation

| Damage Source             | Likely | Unlikely | Possibility of Damage | Residual Strength | Visibility of Damage | Sensitivity to Damage Growth | Remarks/Damage              |
|---------------------------|--------|----------|-----------------------|-------------------|----------------------|------------------------------|-----------------------------|
| Ground handling equipment |        | x        |                       |                   |                      |                              |                             |
| Cargo handling equipment  |        | x        |                       |                   |                      |                              |                             |
| Maintenance procedure     |        | x        |                       |                   |                      |                              |                             |
| Operator's procedures     |        | x        |                       |                   |                      |                              |                             |
| Weather effects           | x      |          | 2                     |                   | 1                    |                              | Hail damage is possible     |
| Bird strike               | x      |          | 2                     |                   | 3                    |                              | Damage is highly visible    |
| Landing debris            |        | x        |                       |                   |                      |                              |                             |
| Spillage                  |        | x        |                       |                   |                      |                              |                             |
| Lightning strike          | x      |          | 2                     |                   | 1                    |                              | Entry/exit points are small |
| Other                     |        | x        |                       |                   |                      |                              |                             |

Possibility of Damage and Residual Strength

|                               |              |
|-------------------------------|--------------|
| Possibility of Damage         | 2 - Moderate |
| Residual Strength             |              |
| Possibility/Residual Strength |              |

Visibility of Damage and Sensitivity to Damage Growth

|   |         |
|---|---------|
| Visibility of Damage                        | 1 - Low |
| Sensitivity to Damage Growth                |         |
| Timely Detection (Visibility/Damage Growth) |         |

Overall

|                       |  |
|-----------------------|--|
| Overall Rating        |  |
| In-Service Experience | No findings  |
| Corrosion Impact      | No   |
| Damage Consequence    | Disbonding of skin composite from HC; delamination and cracks allowing humidity ingress to core. |
| Remarks               |  |

Tasks

| Task # | Type | Description   | Initial Interval | Repeat Interval | Zonal | Access                  | Remarks |
|--------|------|---|------------------|-----------------|-------|-------------------------|---------|
| 007    | GVI  | General visual inspection of rudder composite skin for evidence of accidental damage - visible damage | 4 Yr             | 2 Yr            | No    | Ladder/inspection stand |         |
| 008    | DET  | Detailed inspection of rudder composite skin for evidence of barely visible damage                    | 8 Yr             | 4 Yr            | N/A   | Ladder/inspection stand |         |

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Tasks Summary

SSI NO.  
55-00-00

Item Description  
STABILIZERS

Tasks Summary

| Task #       | Type | Description   | Initial Interval | Repeat Interval | Zonal | Access  | Remarks  |
|--------------|------|---|------------------|-----------------|-------|---|--|
| 55-41-01-001 | DET  | Detailed inspection of rudder hinges for evidence of environmental deterioration.                     | 8 Yr             | 8 Yr            | N/A   | Rudder/v stab cove panel removal required.    |  |
| 55-41-01-002 | GVI  | General visual inspection of rudder hinges for signs of environmental deterioration.                  | 4 Yr             | 4 Yr            | Yes   |   |  |
| 55-41-01-003 | GVI  | General visual inspection of external rudder surface for evidence of environmental deterioration.     | 4 Yr             | 4 Yr            | Yes   | Cove panel removed                            |  |
| 55-41-01-004 | SDI  | Detailed inspection of rudder internal surface for evidence of environmental deterioration.           | 8 Yr             | 8 Yr            | N/A   | Rudder cove panel and panels 1, 2, 3 removed. | Requires use of boroscope to inspect honeycomb and HC/Rudder skin bonding. |
| 55-41-01-005 | GVI  | General visual inspection of rudder hinges for signs of accidental damage.                            | 4 Yr             | 4 Yr            | Yes   | Rudder cove panel removed.                    |  |
| 55-41-01-006 | DET  | Detailed inspection of rudder hinges for evidence of accidental damage.                               | 8 Yr             | 8 Yr            | N/A   | Cove panel removed                            |  |
| 55-41-01-007 | GVI  | General visual inspection of rudder composite skin for evidence of accidental damage - visible damage | 4 Yr             | 2 Yr            | No    | Ladder/inspection stand                       |  |
| 55-41-01-008 | DET  | Detailed inspection of rudder composite skin for evidence of barely visible damage                    | 8 Yr             | 4 Yr            | N/A   | Ladder/inspection stand                       |  |

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Tasks Summary (Detailed)

SSI NO.  
55-00-00

Item Description  
STABILIZERS

Tasks Summary (Detailed)

| Task #       | Analysis Type | Type | Description   | Initial Interval | Repeat Interval | CPCP | Zonal | Zone | Access  | Remarks  |
|--------------|---------------|------|---|------------------|-----------------|------|-------|------|---|--|
| 55-41-01-001 | ED Metals     | DET  | Detailed inspection of rudder hinges for evidence of environmental deterioration.                     | 8 Yr             | 8 Yr            | Yes  | N/A   | 300  | Rudder/v stab cove panel removal required.    |  |
| 55-41-01-002 | ED Metals     | GVI  | General visual inspection of rudder hinges for signs of environmental deterioration.                  | 4 Yr             | 4 Yr            | Yes  | Yes   | 300  |   |  |
| 55-41-01-003 | ED Non-Metals | GVI  | General visual inspection of external rudder surface for evidence of environmental deterioration.     | 4 Yr             | 4 Yr            | No   | Yes   | 300  | Cove panel removed                            |  |
| 55-41-01-004 | ED Non-Metals | SDI  | Detailed inspection of rudder internal surface for evidence of environmental deterioration.           | 8 Yr             | 8 Yr            | No   | N/A   | 300  | Rudder cove panel and panels 1, 2, 3 removed. | Requires use of boroscope to inspect honeycomb and HC/Rudder skin bonding. |
| 55-41-01-005 | AD Metals     | GVI  | General visual inspection of rudder hinges for signs of accidental damage.                            | 4 Yr             | 4 Yr            | No   | Yes   | 300  | Rudder cove panel removed.                    |  |
| 55-41-01-006 | AD Metals     | DET  | Detailed inspection of rudder hinges for evidence of accidental damage.                               | 8 Yr             | 8 Yr            | No   | N/A   | 300  | Cove panel removed                            |  |
| 55-41-01-007 | AD Non-Metals | GVI  | General visual inspection of rudder composite skin for evidence of accidental damage - visible damage | 4 Yr             | 2 Yr            | No   | No    | 300  | Ladder/inspection stand                       |  |
| 55-41-01-008 | AD Non-Metals | DET  | Detailed inspection of rudder composite skin for evidence of barely visible damage                    | 8 Yr             | 4 Yr            | No   | N/A   | 300  | Ladder/inspection stand                       |  |

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