

October 31, 2001  
G9701-SSG-037

DOCUMENT CONTROL DESK  
UNITED STATES NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555



Reference: a) Boeing Letter G-1151-RSO-92-365 dated August 31, 1992; R.S. Orr to the NRC Operations Center  
b) NRC Letter Docket No. 99901227 dated August 12, 1992; L. J. Norrholm to R. S. Orr; Subject: Response to 10 CFR 21 Inquiry

Dear Sir or Madam:

In accordance with the Reference correspondence and 10 CFR 21, Boeing is sending the NRC the attached error notices received from our former software suppliers. Because of unknown current addresses, the following former customers were not notified:

Reactor Controls, Inc

Echo Energy Consultants

Nuclear Applications and Systems Analysis Company (Japan)

Nuclear Power Services

Error notices have been sent to our other former customers.

Very truly yours,

A handwritten signature in black ink, appearing to read "Mark Snyder", followed by a long horizontal line.

Mark S. Snyder  
Nuclear Administrator  
Mail Code 7A-43

Enclosures: GT STRUDL Program Report Forms 2001.6 through 2001.9

IE20

# GTSTRU DL Program Report Form

GPRF No.: 2001.06

DATE: 4/5/01

FROM: Computer-Aided Structural Engineering Center  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0355

## SEVERITY LEVEL:

- ☒ **URGENT** Problem results in incorrect answers which may not be apparent or job aborts and cannot be recovered within the session or job.
- ☐ **SERIOUS** Problem results in incorrect answers which are obvious or problem prevents completion of a particular user's task.
- ☐ **MINOR** Problem can be worked around or problem poses high frustration factor.
- ☐ **INFORMATIVE** Documentation error, program usage tip, user inconveniences.

Date Problem Confirmed April 4, 2001

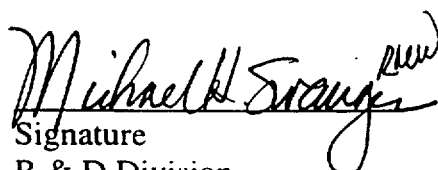
Date Notification Sent 4/6/01

Computers PC only

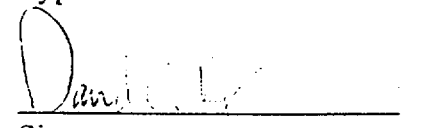
Operating System DOS, Windows NT, 95, 98, 2000, ME

Version 96.01 and later

Target Release for Correction Version 26.0

  
Signature  
R & D Division

Michael H. Swanger  
Typed or Printed Name

  
Signature  
Professional Services Division

Dani  
Typed or Printed Name

Sr. RE  
Title

4/5/01  
Date of Signature

Computer Control Manager  
Title

4/5/01  
Date of Signature

# GTSTRUDL Program Report Form

(Continued)

GPRF No.: 2001.06

DATE: 4/5/01

## DESCRIPTION:

The RIGID BODY INCIDENCES command does not detect the specification of duplicate rigid body element identifiers. Any rigid body incidence entry, whose element identifier duplicates the identifier of any previously defined member, element, or rigid body, overwrites the incidences data for the previously defined member, element, or rigid body. No message indicating this situation is given. This problem was first detected when a list of rigid body incidences included element identifiers containing nine characters, such as the following:

```
TYPE RIGID SOLID
RIGID BODY INCIDENCES
    '12345678A' 1 2 3
    '12345678B' 2 3 4
    '12345678C' 3 4 5
```

Because element identifiers are restricted to eight characters, all of these rigid body element identifiers were truncated to the identical name '12345678', and only the incidence data for the last entry were stored.

The workaround is to specify unique, valid rigid body element identifiers in the RIGID BODY INCIDENCES command. A valid identifier has eight or fewer characters, or digits in the case of pure integer identifiers.

## GTSTRUDL User Reference Manual Sections:

Rigid Bodies

Section 2.6.4.2, Volume 3, Rev. P, GTSTRUDL  
Reference Manual

# GTSTRUDL Program Report Form

GPRF No.: 2001.07

DATE: 4/12/01

FROM: Computer-Aided Structural Engineering Center  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0355

## SEVERITY LEVEL:

- ☒ **URGENT** Problem results in incorrect answers which may not be apparent or job aborts and cannot be recovered within the session or job.
- ☐ **SERIOUS** Problem results in incorrect answers which are obvious or problem prevents completion of a particular user's task.
- ☐ **MINOR** Problem can be worked around or problem poses high frustration factor.
- ☐ **INFORMATIVE** Documentation error, program usage tip, user inconveniences.

Date Problem Confirmed 4/11/01

Date Notification Sent 4/12/01

Computers All  
Operating System All

Versions All versions prior to and including Version 25

Target Release for Correction Version 26

Kenneth Will  
Signature  
R & D Division

Kenneth Will  
Typed or Printed Name

Director ASD  
Title

4/12/01  
Date of Signature

David C. Key  
Signature  
Professional Services Division

David C. Key  
Typed or Printed Name

Configuration Control Manager  
Title

4/12/01  
Date of Signature

**GTSTRUDL Program Report Form**  
(Continued)

GPRF No.: 2001.07

DATE: 4/12/01

**DESCRIPTION:**

If a loading contains JOINT TEMPERATUREs and that loading is later changed with the JOINT TEMPERATUREs deleted, the joints which contained the deleted JOINT TEMPERATUREs will be incorrectly changed to planar element joints. Subsequent analyses may produce structural instabilities. This can be checked by the PRINT JOINT COORDINATE command and checking to see if the joints are listed as PLAN-EL (planar element).

Example:

LOADING 1

JOINT TEMPERATURES

1 TO 8 CHANGE 20.

JOINT LOADS

2 3 FORCE X 100

....

CHANGES

LOADING 1

DELETIONS

JOINT TEMPERATURE

1 TO 4

...

\$

THE PRINT JOINT COORDINATE command will show that the joints have been changed to planar element (PLAN-EL)

Workaround:

Delete the loading and then redefine the loading with a new name.

Applicable Sections of the Documentation:

JOINT TEMPERATURE - SECTION 2.3.5.3 of Volume 3 of the GTSTRUDL Reference Manuals.

DETERMINE PLANAR JOINTS - SECTION 2.1.12.10 of Volume 1 of the GTSTRUDL Reference Manuals (describes PLAN-EL PLANAR joints).

PRINT JOINT COORDINATE - SECTION 2.1.14.2 of Volume 1 and Section 2.3.6 of Volume 3 of the GTSTRUDL Reference Manuals.

# GTSTRUDL Program Report Form

GPRF No.: 2001.08

DATE: 4/12/01

FROM: Computer-Aided Structural Engineering Center  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0355

## SEVERITY LEVEL:

- ☒ **URGENT** Problem results in incorrect answers which may not be apparent or job aborts and cannot be recovered within the session or job.
- ☐ **SERIOUS** Problem results in incorrect answers which are obvious or problem prevents completion of a particular user's task.
- ☐ **MINOR** Problem can be worked around or problem poses high frustration factor.
- ☐ **INFORMATIVE** Documentation error, program usage tip, user inconveniences.

Date Problem Confirmed 4/11/01

Date Notification Sent 4/12/01

Computers All  
Operating System All

Versions All versions prior to and including Version 25

Target Release for Correction Version 26

Kenneth Will  
Signature  
R & D Division

Director ASD  
Title

Kenneth Will  
Typed or Printed Name

4/12/01  
Date of Signature

David C. Key  
Signature  
Professional Services Division

Configuration Control Manager  
Title

David C. Key  
Typed or Printed Name

4/12/01  
Date of Signature

**GTSTRUDL Program Report Form**  
(Continued)

GPRF No.: 2001.08

DATE: 4/12/01

**DESCRIPTION:**

If a loading contains JOINT TEMPERATUREs and that loading is later deleted and a new loading is created with the same name, the JOINT TEMPERATUREs will still be present in the new loading.

Example:

LOADING 1  
JOINT TEMPERATURES  
1 TO 8 CHANGE 20.

....

DELETIONS  
LOADING 1  
ADDITIONS

...

LOADING 1  
JOINT LOADS  
2 3 FORCE X 10  
\$

A PRINT LOADING DATA will show that the JOINT TEMPERATUREs from the original LOADING 1 still exist in the newly defined LOADING 1. Subsequent STIFFNESS or NONLINEAR ANALYSIS commands will consider JOINT TEMPERATUREs in LOADING 1.

Workaround:

Do not define a new loading with the same name as a deleted loading which contained JOINT TEMPERATURE specifications.

You can verify that this condition did not occur by issuing the PRINT LOADING DATA command and checking that incorrect JOINT TEMPERATUREs do not appear in the output.

Applicable Sections of the Documentation:

JOINT TEMPERATURE - SECTION 2.3.5.3 of Volume 3 of the GTSTRUDL Reference Manuals.

PRINT LOADING DATA - SECTION 2.1.14.2 of Volume 1 and Section 2.3.6 of Volume 3 of the GTSTRUDL Reference Manuals.

# GTSTRUDL Program Report Form

GPRF No.: 2001.09

DATE: 7/27/01

FROM: Computer-Aided Structural Engineering Center  
Georgia Institute of Technology  
Atlanta, Georgia 30332-0355

## SEVERITY LEVEL:

- ☒ X URGENT Problem results in incorrect answers which may not be apparent or job aborts and cannot be recovered within the session or job.
- ☐   SERIOUS Problem results in incorrect answers which are obvious or problem prevents completion of a particular user's task.
- ☐   MINOR Problem can be worked around or problem poses high frustration factor.
- ☐   INFORMATIVE Documentation error, program usage tip, user inconveniences.

Date Problem Confirmed July 24, 2001

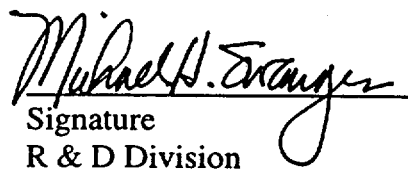
Date Notification Sent 7/27/01

Computers PC only

Operating System DOS, Windows NT, 95, 98, 2000, ME

Version 96.01 and later

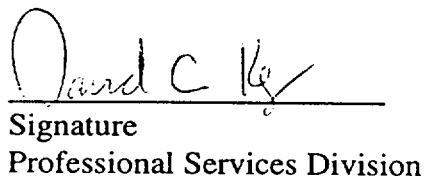
Target Release for Correction Version 26.0

  
Signature  
R & D Division

Sr. RE  
Title

Michael H. Swanger  
Typed or Printed Name

7/27/01  
Date of Signature

  
Signature  
Professional Services Division

Configuration Control Manager  
Title

David C. Key  
Typed or Printed Name

7/27/01  
Date of Signature

**GTSTRUDL Program Report Form**  
(Continued)

GPRF No.: 2001.09

DATE: 7/27/01

**DESCRIPTION:**

The presence of joint constraints – joint ties and/or rigid bodies – forces the system mass matrix to be assembled using the consistent format, including the automatic computation of consistent member and element mass matrices from the self-weight density of the members and elements, regardless of whether or not the INERTIA OF JOINTS LUMPED/CONSISTENT command had been given.

As a work-around when using joint constraints and you do not wish the member and element self-weight consistent mass to be computed and assembled into the system mass matrix, then specify a 0.0 value for the DENSITY constant for the members and elements.

**GTSTRUDL User Reference Manual Sections:**

|                               |  |
|-------------------------------|--|
| Joint Constraints             | Section 2.6.4, Volume 3, Rev. Q, GTSTRUDL Reference Manual   |
| Inertia Specification Command | Section 2.4.3.1, Volume 3, Rev. Q, GTSTRUDL Reference Manual |