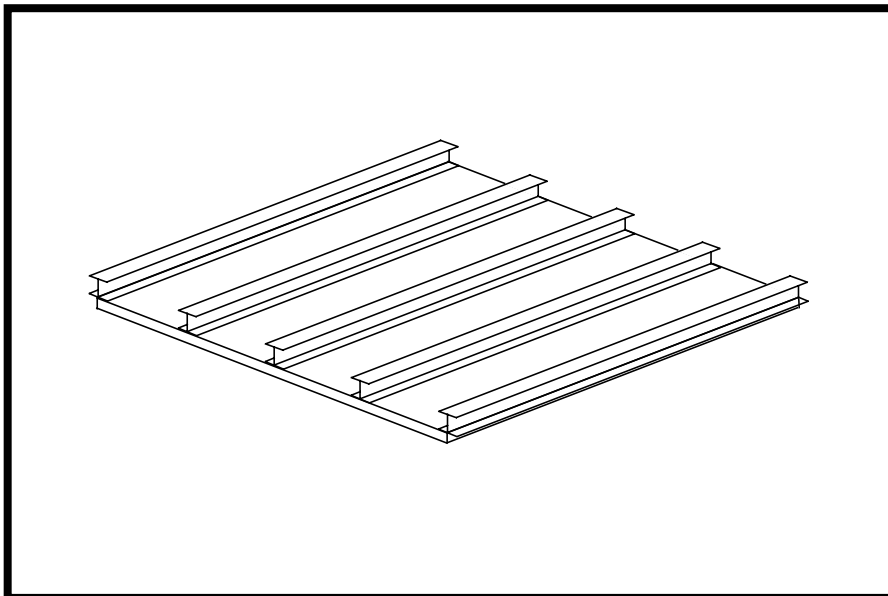

LESSON 15

Restarting a Linear Static Analysis of a Simply-Supported Stiffened Plate



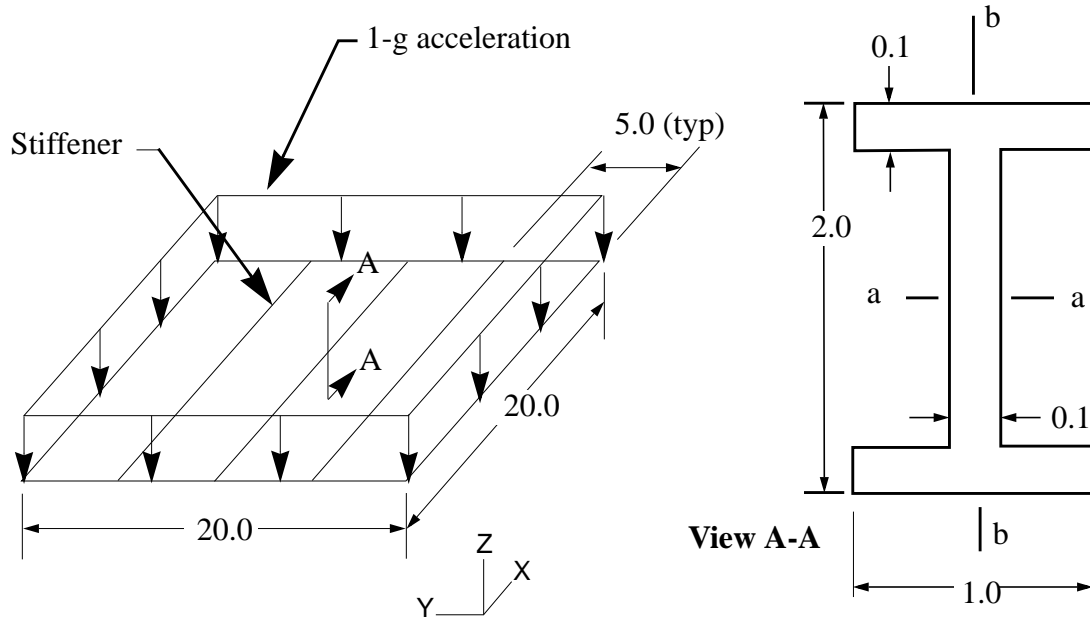
Objectives:

- Restart a previous MSC/NASTRAN Job and request outputs for a new load condition
- In this exercise, we are performing a restart by adding a new loading condition of 1-g gravity load in the negative z-direction.



Model Description:

The model used for this exercise is identical to the model used for Lesson 8.



Elastic Modulus:	10.3E6 psi
Poisson Ratio:	0.3
Density:	0.101 lbs/in³
Plate Thickness:	0.1 in
Bar cross sectional area:	0.38 in²
I_{aa}:	0.2293 in⁴
I_{bb}:	0.0168 in⁴
J:	0.0013 in⁴

Exercise Procedure:

1. The input file you will be working with is called **lesson15_work.bdf**. This input file is identical to solution input file for Exercise 8.
2. Submit this file to the MSC/NASTRAN solver for analysis. To do this, find an available xterm window and at the prompt enter:

nastran lesson15_work.bdf

NOTE: **scr=yes** is not used for this exercise; here, we need our MSC/NASTRAN database and related files to perform a restart.

Monitor the run using the UNIX **ps** command.

3. When the analysis has completed successfully, use your preferred text-editor to create a Restart input file called **restart_lesson15.bdf** with additional output requests for a new gravitational load. **DO NOT DELETE ANY OF FILES FROM THE FIRST SUBMITTAL.**
4. Input file items that you will need to consider:

Entry	Comments
FMS	
ASSIGN	Which database should you restart from?
RESTART	What version should you use?
Case Control	
SUBCASE	We want to specify a new load condition. How should we go about doing so? Use 20 as the new SUBCASE identification number.
LOAD	We want to specify a new load condition. How should we go about doing so?
DISPLACEMENT, STRESS	We wish to extract displacements & stresses for the new load condition. How to do we specify this?
Bulk Data (PARAMs)	
GRAV	How do you specify a gravitational load in the -z direction?

5. After you created your Restart file, submit this file to the MSC/NASTRAN solver for analysis. To do this, find an available xterm window and at the prompt enter:

nastran restart_lesson15.bdf scr=yes

Monitor the run using the UNIX **ps** command.

- 5a. When the run is completed, edit the **restart_lesson15.f06** file and search for the word **FATAL**. If none exists, search for the word **WARNING**. Determine whether or not existing **WARNING** messages indicate modeling errors.
- 5b. While still editing **restart_lesson15.f06**, search for the word:

D I S P L A C E (spaces are necessary)

What are the components of the displacement vector for **GRID 83** for the new **SUBCASE 20** (translation only)?

disp X = _____
disp Y = _____
disp Z = _____

Search for the word:

S T R E S S (spaces are necessary)

What is the axial stress for **CBAR 146** for the new **SUBCASE 20**?

axial stress = _____

Search for the word:

Q U A D (spaces are necessary)

What are the centroidal Von Mises stresses for **CQUAD4 77** for the new **SUBCASE 20**?

-(thk/2): stress = _____
+(thk/2): stress = _____

-
6. Finally, visualize the results in MSC/PATRAN. Import **both** model & results into a **new** MSC/PATRAN database via the **restart_lesson15.op2** results file.

◆ **Analysis**

Action:

Read Output2

Object:

Result Entities

Method:

Translate

Select Results File...

Filter

Selected Results File:

select the desired .op2 file

OK

Apply

When translation is completed and the Heartbeat turns green, bring up the **Results** form.

◆ **Results**

Action:

Create

Object:

Quick Plot

Choose the desired result case in the **Select Result Cases** list and select the result(s) in the **Select Fringe Result** list and/or in the **Select Deformation Result** list. And hit **Apply** to view the result(s) in the viewport.

If you wish to reset your display graphics to the state it was in before you began post-processing your model, remember to select the broom icon.



Reset Graphics

Quit MSC/PATRAN when you have completed this exercise.