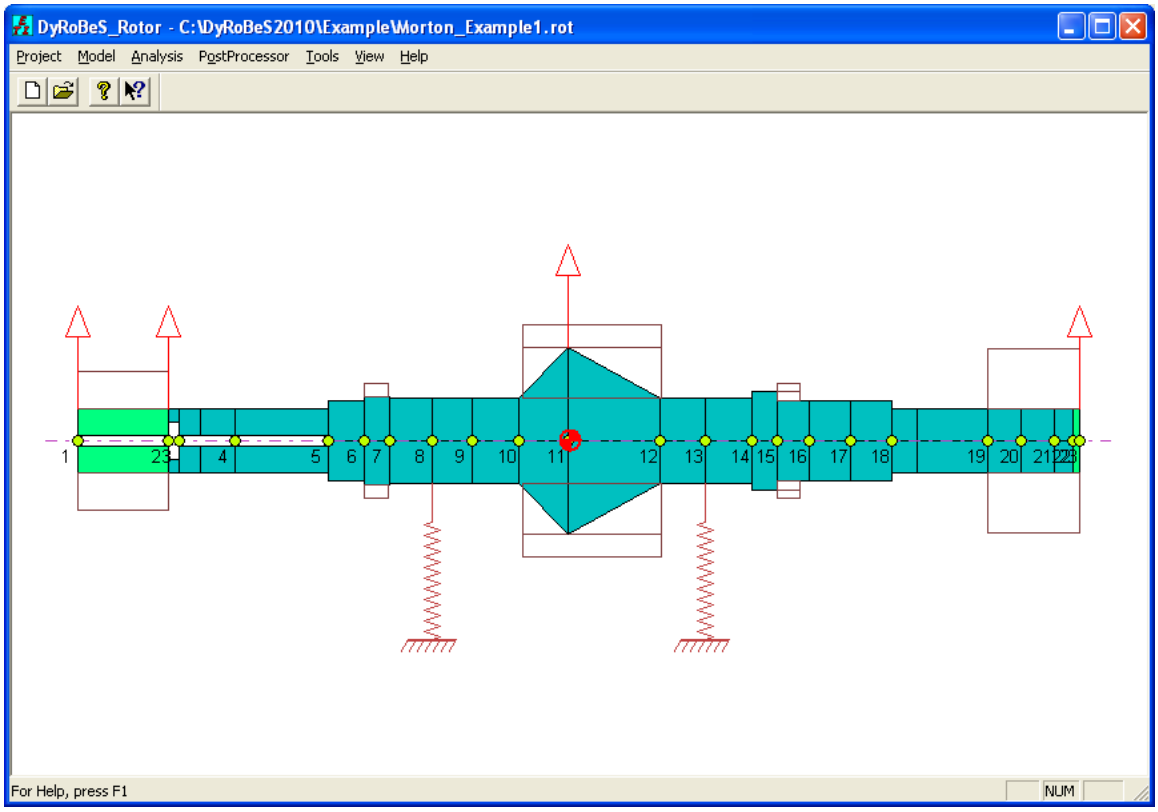
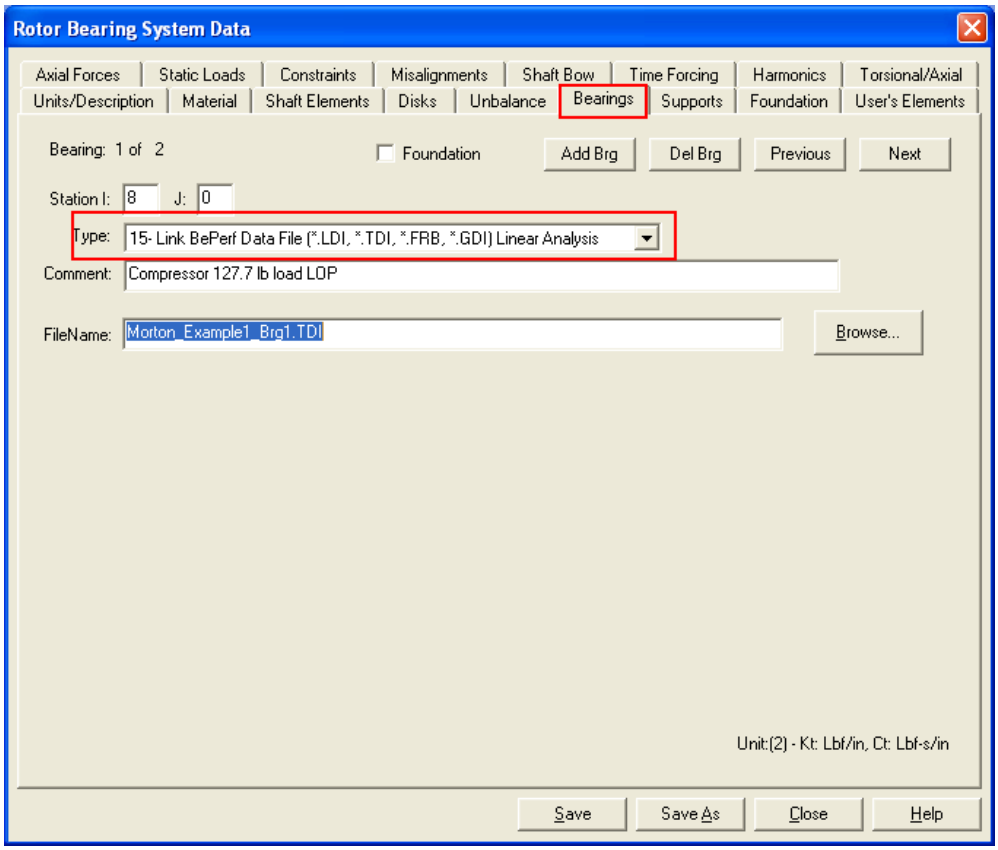
**Improvements for Ver 20.10** **February 16, 2018**

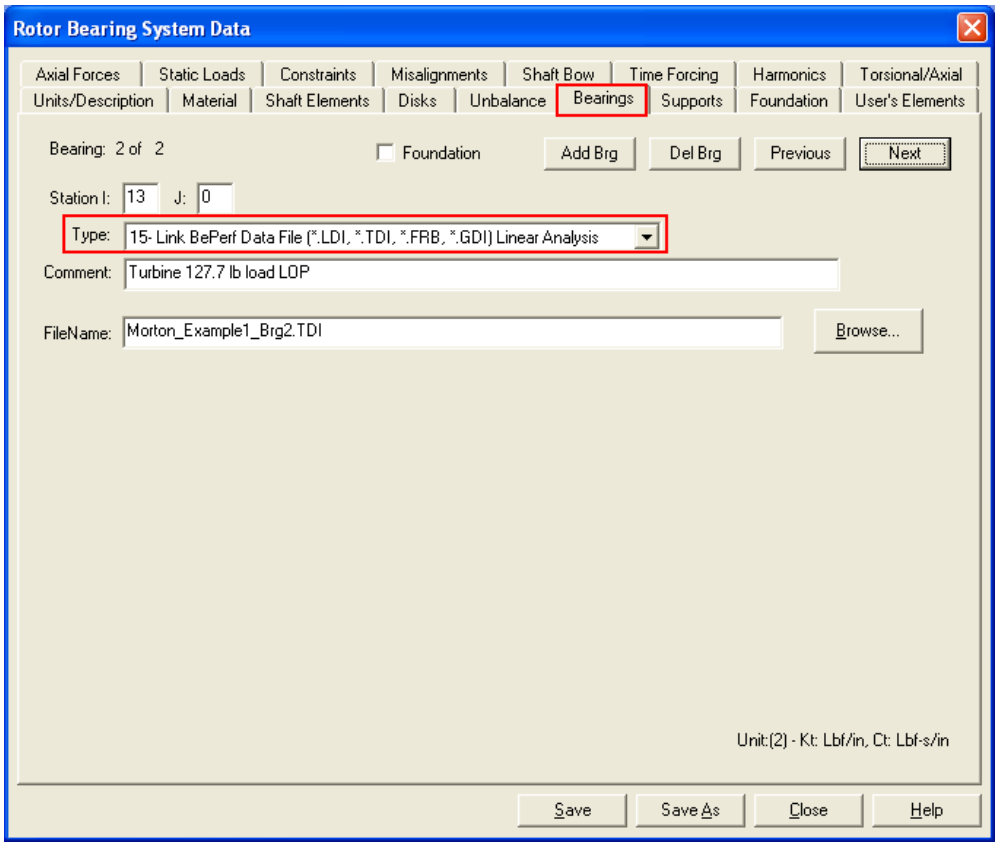
- Add Analysis Type 13 – Morton Effect
- Add Analysis Type 14 – Multiple Analyses for the same rotor file
- Enhance PostProcessor Graphics in the Time Transient Analysis – Frequency Domain

In this release note, we will present some examples to illustrate the use of these new features. The first example is shown below. Although this expander example is mainly used to demonstrate the Morton effect, it is also used to demonstrate other features.

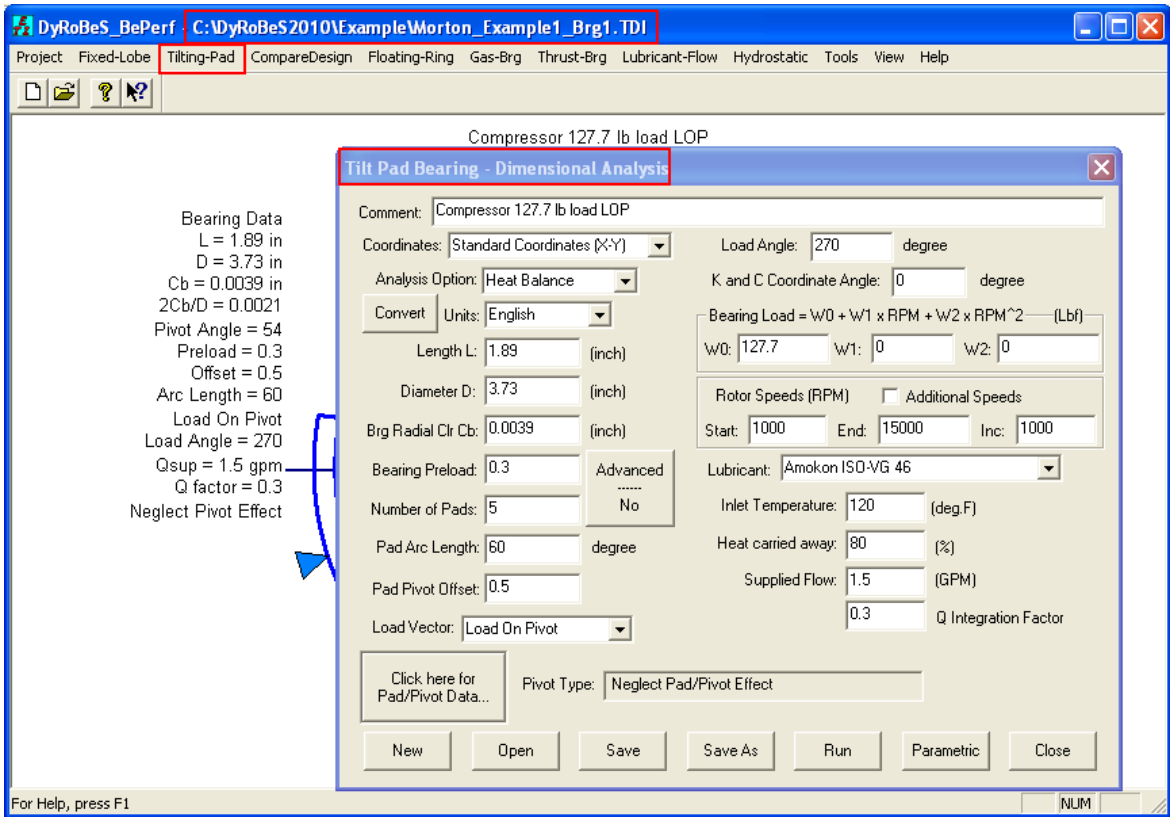


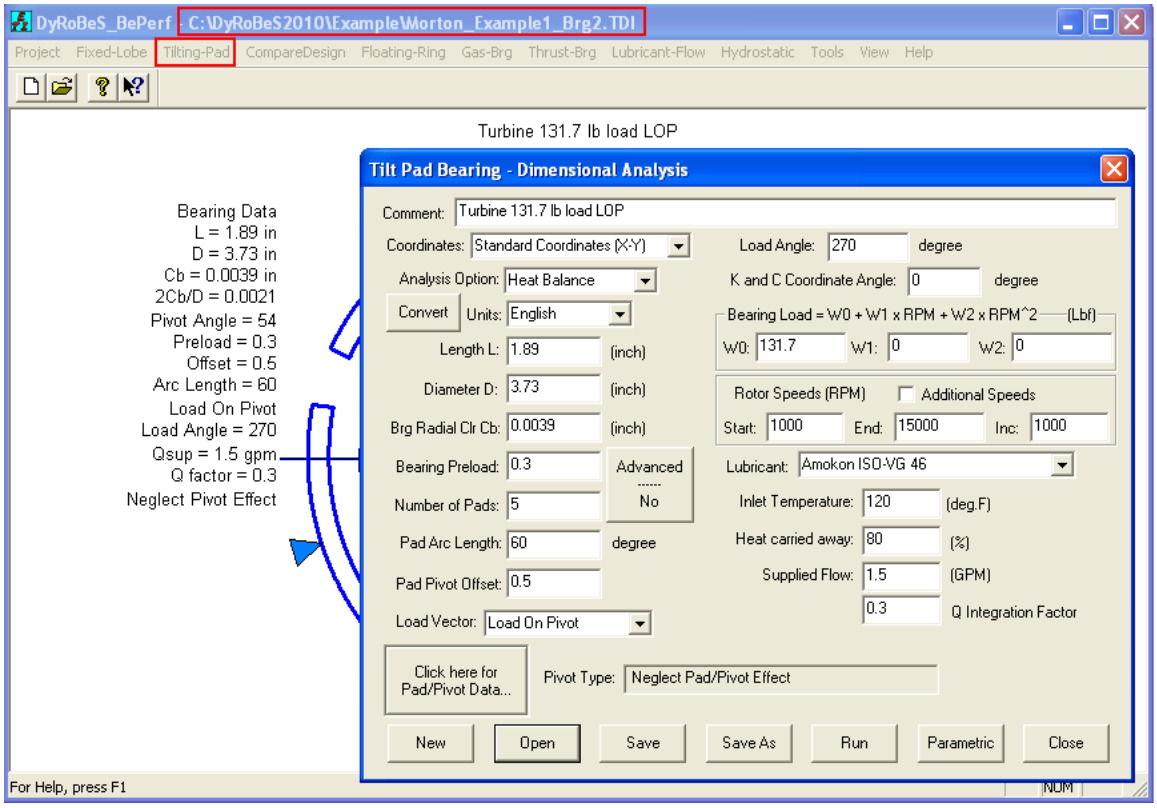

In this example, the bearing data is read from the file created by using BePerf, i.e., bearing type 15 – Link the BePerf data file. Note that this bearing type is for the linear analysis only. The program will automate the bearing linearization process internally and prepare the linearized coefficients to be used in the rotordynamic analysis. Four bearing files, or four bearing types, can used in this option:
*.LDI – Fixed Lobe Bearings
*.TDI – Tilting Pad Bearings
*.FRB – Floating Ring Bearings
*.GDI – Gas Bearings


Rotor Bearing System Data
Axial Forces
Static Loads
Constraints
Misalignments
Shaft Bow
Time Forcing
Harmonics
Torsional/Axial
Units/Description
Material
Shaft Elements
Disks
Unbalance
Bearings
Supports
Foundation
User's Elements
Bearing: 1 of 2
Foundation
Add Brg
Del Brg
Previous
Next
Station I: 8
J: 0
Type: 15- Link BePerf Data File (*.LDI, *.TDI, *.FRB, *.GDI) Linear Analysis
Comment: Compressor 127.7 lb load LOP
FileName: Morton_Example1_Brg1.TDI
Browse...
Unit:(2) - Kt: Lbf/in, Ct: Lbf-s/in
Save
Save As
Close
Help


Rotor Bearing System Data
Axial Forces
Static Loads
Constraints
Misalignments
Shaft Bow
Time Forcing
Harmonics
Torsional/Axial
Units/Description
Material
Shaft Elements
Disks
Unbalance
Bearings
Supports
Foundation
User's Elements
Bearing: 2 of 2
Foundation
Add Brg
Del Brg
Previous
Next
Station I: 13
J: 0
Type: 15- Link BePerf Data File (*.LDI, *.TDI, *.FRB, *.GDI) Linear Analysis
Comment: Turbine 127.7 lb load LOP
FileName: Morton_Example1_Brg2.TDI
Browse...
Unit:(2) - Kt: Lbf/in, Ct: Lbf-s/in
Save
Save As
Close
Help

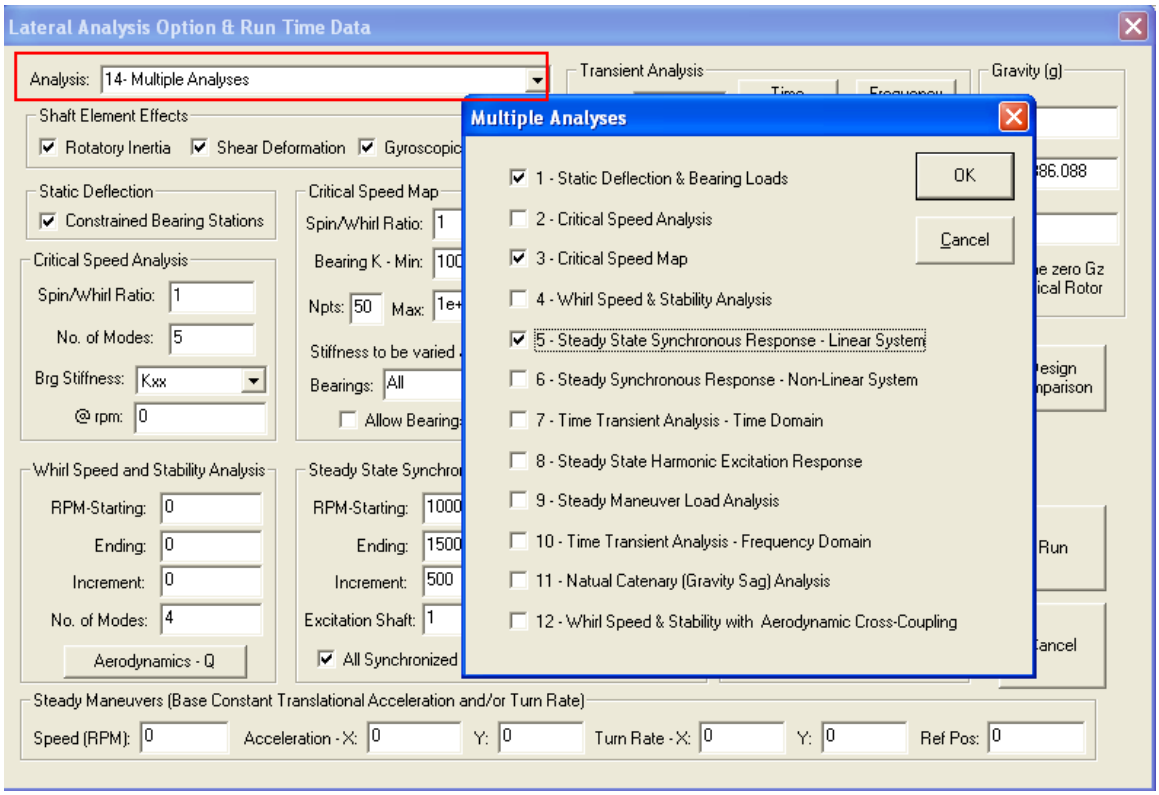
Again, these two files were created using BePerf:



It is strongly recommended that you analyze the bearing using BePerf first to ensure the bearing performance, such as minimum film thickness, maximum temperature, etc., meet the design criteria before performing any rotordynamics analysis.

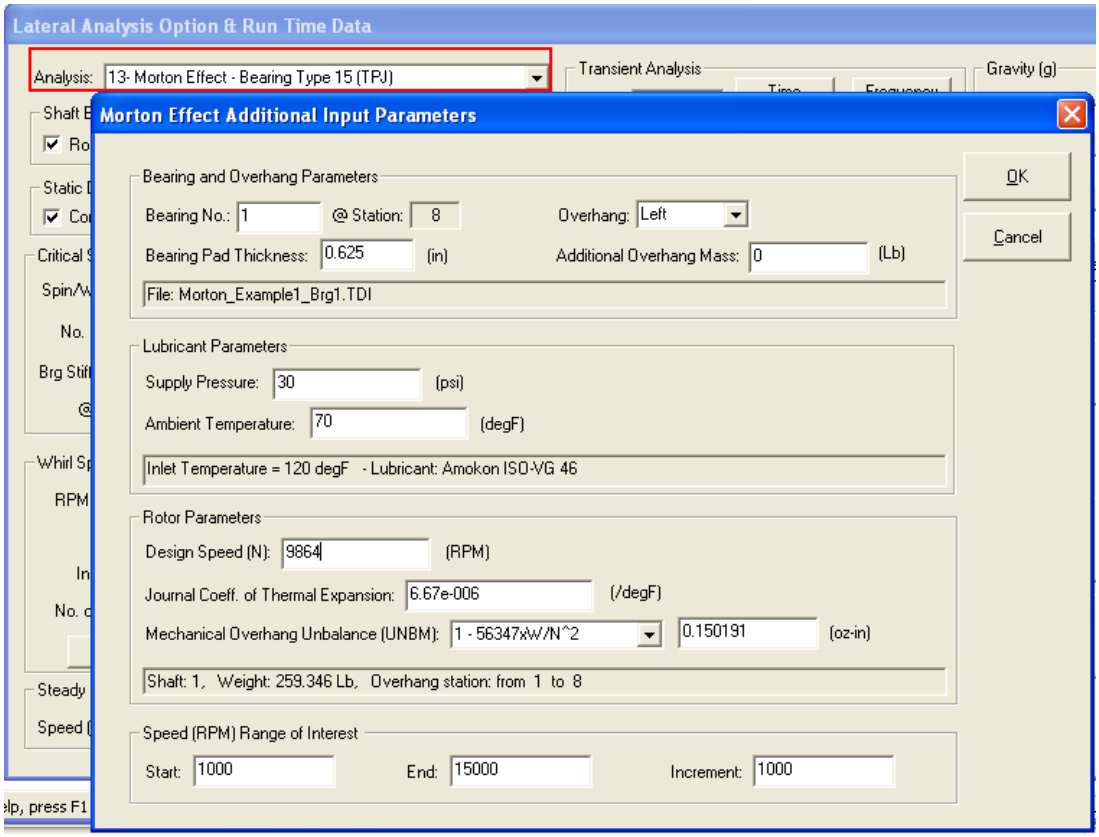
To demonstrate the multiple analysis option, go to Analysis – Lateral Vibration – Analysis type 14 as shown below. Check the analysis you would like to analyze and Click OK. Then Click Run.




Once the analysis is done, you may use the postprocessor to view the analysis results as if they were analyzed individually. Note that if you use Bearing type 15, there are several intermediate files created with "_design.*" after the bearing file name. *.brg are the linearized bearing coefficients used in the rotordyminic analysis, others are associated output files, which can be used for verification purposes.

To demonstrate the Morton Analysis – Analysis Type 13, go to Analysis – Lateral Vibration – Analysis type 13 as shown below. For more details on the Morton Analysis, please see User Manual Morton Analysis Program by Dr. R. G. Kirk. Several notes are summarized below:

1. Currently, only Tilting Pad Bearing (*.TDI) is considered.
2. Morton Effect was observed for overhung rotors, so when selecting a bearing under study, either LEFT or RIGHT overhang must also be specified.
3. Since Motor Analysis study the thermal growth in the shaft, the Hear Balance must be specified in the bearing file (*.TDI).




To view the results – PostProcessor – Morton Effect. Again, for more information, please see the User's Manual.