Errors Corrected in the released versions of MYSTRAN

Version 14.0 (~9/15//22) has the following errors corrected

1) The ELAS values in the *-ALL-ELEM-TEST.DAT file were being overwritten.

Version 13.2 (~9/1//21) has the following errors corrected

1) In subroutine OFP3_ELFE_1D a wrong variable was used for BAR length causing errors in engineering forces for BAR elements
2) In subroutine PRESSURE_DATA_PROC variable NPDAT should have been initialized at the beginning of each subcase processed
3) Offsets were calculated in such a fashion that the offset values for the last grid in an element were used for all elements
4) The BUSH coord transformation matrix TE was calculated wrong. The rows & cols were interchanged

Version 13.0 (7/28/21) has the following errors corrected

When running a buckling problem in a model with an RBE2, MYSTRAN stopped with a fatal error reporting that GMN was not allocated. Code to check the allocation status of GMN and allocating it if it isn't, was added.

Version 12.4 (07/05/21) has the following errors corrected

1) The MIN4T version of the QUAD4 element has the error corrected for orthotropic materials (4 sub-triangles material orientation fixed)
2) Fix coding issue in CORD_PTOC where: Index variable ‘i’ redefined in procedure ‘param_prtcord_output’ called from within a DO loop in the main procedure

Version 12.2 (4/26/21) has the following errors corrected

1) BUSH element code completely rewritten as the BUSH code was nowhere near correct

2) Variable IOFF should be 9 but was 8 (supposed to be the offset into CCELDT to get to last BUG request)

3) CETEMP(I,J) = 'N' is used to indicate certain elements have no temperature load capability. Only the ELASi elements were set to 'N'. However, BUSH and PLOTEL should have also been set.

4) Calculation of BUSH element engineering forces was wrong

5) In subroutine WRITE_FIJFIL, MAX_STRESS_POINTS, a dimension of the SEi, STEi matrices was not written to file F24FIL

Version 12.1 (2/12/21) has the following errors corrected

1) A dummy variable as not initialized in 4 subroutines which eventuall caused an error:
OFP3_STRE_NO_PCOMP, OFP3_STRE_NO_PCOMP, OFP3_STRE_NO_PCOMP, OFP3_STRE_NO_PCOMP,

2) RCV values defined on a continuation entry of bulk data entry PUSH would be ignored and 1.0 values used for the 4 entries on RCV

3) BUSHOFF was not written to unformatted file on unit L1G

Version 12.0 (9/10/20) has the following errors corrected

For error number 1305, the check on I1 should have been if I1 > NCORD + 1 but, instead, was I1 > NCORD

Version 11.2 (9/10/20) has the following errors corrected

1) Correction due to array PS not being allocated (this error was on in MYSTRAN for a short time due to a recent change in the location of the PS allocation. That allocation was moved back to it's position earlier and that fixed the problem)

2) Zero shear flexibility was causing a divide by zero in subroutine TPLT2 which is part of the MIN4T version of the QUAD4 element as well as the TRIA3 element.

Version 11.2 (9/10/20) has the following error NOT corrected but with work-around

1) The default QUAD4 element (QUAD4TYP = 'MIN4T') has an error for ***orthotropic or anisotropic material properties***. That version of the QUAD4 is made up of 4 non-overlapping TRIA3 elements. Those TRIA3 elements, as used in the MIN4T QUAD4 element only, do not have their material axes oriented in the QUAD4 material axis directions. The work-around is to:

a) Insert a PARAM, QUAD4TYP, MIN4 into the Bulk Data File to use the alternate QUAD4. This option should only be used if the QUAD4 elements are nearly rectangular, or
b) Use TRIA3 elements

This is not an issue for QUAD4 elements with isotropic material properties

Version 11.0 (6/16/20) has the following errors corrected

1) The check on CELAS1,2 for valid displacement components in fields 5 and7 was incorrect. A value of 0 (or blank) was allowed. Allowable components are only 1-6

2) An error in subr WRITE_GRD_PRT_OUTPUTS (only for buckling problems and when PARAM, DEBUG, 200 was in the BDF with value > 0) caused MYSTRAN to crash due to an incorrect index in writing header info.

Version 10.20 (3/7/20) has the following errors corrected

1) An index in a coordinate transformation matrix for anisotropic and orthotropic material properties was incorrect (error corrected in subr ROT_AXES_MATL_TO_LOC)

Version 10.10 (2/7/20) has the following errors corrected

1) The differential stiffness matrix, KED, was not being transformed from local to basic to global. This resulted in errors for all buckling and differential stiffness runs if the local element cooddinate system for model was not the same as the global coordinate system (which would be true for all models that were not 1 dimensional at least). Error corrected in subr ELMTLB.f90 – added code for OPT(6))

2) No data was being written to the Femap neutral file (.NEU) for any subcase data past the first subcase (error corrected in subr LINK9)

3) If grid point force balance was requested in a buckling or differential stiffness solution, MYSTRAN would stop with an error indicating the load vector PG_COL was not allocated. This has been fixed (error corrected in subr LINK9)

4) An error in subr WRITE_GRD_PRT_OUTPUTS (only for buckling problems and when output to filename.ANS was requested) caused MYSTRAN to crash due to an incorrect index in writing header info

Version 9.03 (7/15/19) has the following errors corrected

1) Default value for PSOLID(I,3) = 0 in subr BD_PSOLID was wrong. The default value should be -1 (designating no coordinate system) to differentiate it from a defined coordinate system ID (where 0 would mean the basic system). This was causing MYSTRAN to rotate the material matrix, ES, resulting in errors in the stiffness matrix.

2) When PARAM, PRTSCP, 1 was used there was an error in the explanation of the output that was written to the f06 file. Bit positions 7 and 8, in that explanation, were reversed

Version 9.02 (6/4/19) has the following errors corrected

1) Under certain circumstances strains requested in Case Control were not being written out. This is corrected in version 9.02

Version 9.00 (3/1/19) has the following errors corrected

1) The strains for PSHELL plate elements were only output for values calculated at the center (e.g., CORNER was not working)

Version 8.03 (6/28/18) has the following errors corrected

1) There was no code for ELAS2,3,4 elements for FEMAP output to the NEU file for element engineering forces (only ELAS1 elements were coded)

Version 8.02 (3/9/18) has the following errors corrected

1) There was no code for MAT9 for several items (mass density, coefficients of thermal expansion and reference temperature)

Version 8.01 (10/9/14) has the following errors corrected

1) When using the QUAD4 (PARAM QUAD4TYP = MIN4T), and with PARAM MIN4TRED = MIN4T, there would be a singularity when trying to reduce the 5th (internal) central node from the QUAD if there was no transverse shear flexibility specified for the element. This could occur if fields 7, 8 of the PSHELL were blank or, in the case of composites, no G1Z or G2Z were specified on the MAT8 entry for the QUAD.

Version 7.01 (10/9/14) has the following errors corrected

1) The following elements had incorrect stresses output to the NEU FEMAP neutral file: BUSH, ELAS1, ELAS2, ELAS3, ELAS4, ROD and BAR

2) Femap displacements were displayed incorrectly. The Femap NEU (neutral file) should have had displacements in basic coordinates but they were in global coordinates.

Version 6.36 (1/25/12) has the following errors corrected

1) A format line in the source code was not compatible with the write statement that used it. This resulted in an ungraceful fortran crash with no MYSTRAN error code.

Version 6.35 (11/25/11) has the following errors corrected

1) The Inverse Power method of eigenvalue extraction could converge to the negative of the actual eigenvalue if the corresponding eigenvector had its maximum number appearing both as a positive and as a negative value.

Version 6.34 (11/17/11) has the following errors corrected

1) The transverse shear stresses for the Mindlin plate elements (TRIA3 and QUAD4) were incorrectly calculated. The PHI_SQ shear correction factor should have been used in the SE3 stress recovery matrices, not in the FCONV factor used to get transverse shear stress resultants from the stresses themselves

2) There was no explicit code to calculate the shear correction factor PHI_SQ for the MIN4T form of the QUAD4 element which is made up of 4 non-overlapping TRIA3's, Thus, the PHI_SQ for that element was the value from the 4th (last) TRIA3 of which it was made.

3) Wrong equations used for calculating the PLY_A, B, D matrices when recovering stresses for composite individual plies (subr SHELL_ABD_MATRICES). This resulted in wrong stresses in individual plies for composite elements

4) A matrix used in the standard form of eigenvalue analyses, matrix ALL, was not allocated at the time it was attempted to be referenced.

Version 6.33 (2/1/11) has the following error corrected

1) This coding error would cause a run to abort if PARAM SETLKTK = 4 since LTERM_KGG is undefined.

2) Craig-Bampton runs (SOL 31) fail due to a code error in which array UG_COL is attempted to be allocated when it is already allocated..

Version 6.32 (10/11/10) has the following error corrected

1) Several solid element connection entries, for elements with mid-side nodes, were not being processed the same in the 2 stages of Bulk Data processing (subroutines LOADB0, LOADB).

Version 6.30 (7/29/10) has the following errors corrected

1) Large field PLOAD2 and TEMPD were not being processed.

Version 6.23 (7/18/10) has the following errors corrected

1) ELASi, BUSH and SHEAR elements were not set up for SOL 31 (CB model generation) resulting in a fatal crash in SOL 31 when these elements were used and had output requests for OTM's

Version 6.22 (7/13/10) has the following errors corrected

1) Small field cards not being read properly when last field of one entry and 1st field of next entry were the same except for an + in column 1 of one of those entries.

Version 6.21 (6/17/10) has the following errors corrected

1) Large field cards not being read properly when last field of 1st entry and 1st field of 2nd entry were the same except for an * in column 1 of one of those entries.

Version 6.20 (6/9/10) has the following errors corrected

1) Fix an error in the Craig-Bampton synthesis CB (SOL 31) runs if the individual runs used NASTRAN names instead of MYSTRAN names for OUTPUT4 matrix requests.

2) Fixed code which caused an abort when matrix GOA was null and subroutine READ_MATRIX_1 was called to read it from a disk file

Version 6.12 (2/18/10) has the following errors corrected

1) Calculation of the size of arrays for the mass and stiffness linked list arrays could be in error due to a problem in the subroutine that returns the number of grids for an element. The result could be a fatal error similar to the following:

```
*ERROR 1624: PROGRAMMING ERROR IN SUBROUTINE ESP
             TOO MANY NON-ZERO TERMS IN THE STIFFNESS MATRIX. LIMIT
             LTERM_KGG = 165168
```

Version 6.11 (1/4/10) has the following errors corrected

1) The stress and strain recovery for the CSHEAR element was in error. Besides reporting the correct shear stress and strain there were also nonzero, incorrect, values printed for normal stresses and strains.

2) Fix some errors and inconsistencies with the FEMAP neutral file regarding 2D plate elements (including CSHEAR)

Version 6.10 (12/22/09) has the following errors corrected

1) The default for parameters MKLFAC21,31,61,62,63 should have been "POSDEF" but were "INDEF". This may cause some runs to have incorrect answers when SOLLIB = IntMKL is used

2) If plate element offsets are specified there is a fatal error in the element force and stress calculations due to an incorrect subscript in the stress recovery matrices.

Version 6.02 (11/11/09) has the following errors corrected

1) The default for parameter MKLMATST should have been "SYM" but was "NONSYM". This causes runs to have incorrect answers when SOLLIB = IntMKL is used

Version 6.01 (2/16/09) has the following errors corrected

1) Problems that had PCOMP and regular shell elements in the B.D deck aborted.

2) Dimensioning of some arrays for RBE3 elements was incorrect causing an abort

3) Dimensioning of an array containing independent grids on MPC's and rigid elements was incorrect causing an abort

4) Incorrect internal property ID's in problems containing both composite and regular shell elements

5) Array FCONV was not initialized each time different element forces were recovered from element stresses resulting in potentially incorrect element force output.

Version 5.32 (7/8/08) has the following errors corrected

1) Error in property routine for CUSERIN elements (Bulk Data PUSERIN) when the input was tab delimited.

Version 5.31 (6/10/08) has the following errors corrected

1) Incorrect dimension for array OFFSET caused some problems to quit

2) Total model mass used in output of modal effective mass (and the % of the total mass) were incorrect for SOL 3 (MODES)

3) Incorrect degree of freedom table caused jobs to fail if there were AUTOSPC degrees of freedom (DOF's) but no other single point constrained DOF's

Version 5.30 (5/18/08) has the following errors corrected

Equations for the RBE3 element (added in version 5.20) had an incorrect index for one term.

Version 5.23 (4/29/08) has the following errors corrected

1) Problems using PENTA and TETRA elements failed with error message number 1954 (wrong dimension of arrays OFFDIS, OFFSET) when these arrays should not have even been used.

Version 5.22 (4/23/08) has the following errors corrected

1) Corrections to the way INPUTT4 matrices were read so as to be compatible with NASTRAN

2) Errors in dimensioning some arrays for the CUSERIN element

Version 5.10 (11/1/07) has the following errors corrected

1) Error in the reduction from G-set to N-set load vectors when there are loads on the M-set. May cause fatal crash

2) Error in the reduction from F-set to A-set load vectors when there are loads on the O-set. May cause fatal crash

Version 5.00 (9/30/07) has the following errors corrected

1) Code to set number of super diags depending on whether K or M had larger BW was wrong for MGIV method of eigenvalue extraction. This did not cause any problem unless the mass matrix had a larger bandwidth than the stiffness matrix which is unusual.

2) Code to calculate modal effective mass for SOL 3 runs was incorrect. This only seemed to affect results when the global coord systems were not the same for all grids

3) Equivalent thermal loads for plate elements with PSHELL properties were calculated wrong. The membrane loads needed to be multiplied by the membrane thickness (TM) and the bending loads by the section moment of inertia (IB)

4) Engineering forces for QUAD4K and TRIA3K were not being written out

5) Fatal failure in subroutine TPLT2 when all elements were TRIA3's

6) Errors in transverse shear forces/stresses for QUAD4, TRIA3

7) For Craig-Bampton analyses, the text file for stresses was incorrect

Version 4.05 (4/17/07) has the following errors corrected

1) Code to set number of super diags depending on whether K or M had larger bandwidth (BW) was wrong for MGIV eigen extraction method. Only problem was in the unlikely event that BW of M > BW of K

2) Code to calculate modal efective mass in SOL 3 was wrong. This only seemed to affect results when the global coord systems were not the same for all grids

Version 4.03 (2/4/07) has the following errors corrected

1) Plate thickness defined on CTRIA3 did not work

2) Only MAT1 was allowed for 3D solid elements. Change code so that MAT9 is valid also

3) Incorrect calculation of NU21 in a subroutine that calculates material matrices for plate elements. Also caused an error in another term in the membrane material matrix.

4) Incorrect material density used for MAT2

5) In the calculation od 3D solid elements material matrices, some matrix sizes in a matrix multiplication were 3x3 but should have been 6x6. This caused a serious error in the material matrix, ES, for 3D solids and perhaps resulting in a singular stiffness matrix.

Version 4.02 (2/1/07) has the following errors corrected

1) An array was not completely initialized resulting in erratic behavior

2) Strains were not being calculated for shell elements that were not composite (i.e. ones not using PCOMP)

3) Output for PARAM PRTSTIFD is incorrect for matrix diagonal terms (the only effert is on the informational matrix output)

Version 4.01 (12/22/06) has the following errors corrected

1) If elements had a material orientation angle (MATANGLE on the CQUAD4, CTRIA3 Bulk Data connection entries) that was nonzero, the membrane material matrices were transformed from material axes to element axes incorrectly. (the transformation was done twice instead of only once)

Version 2.11 (06/27/06) and 2.12 has the following errors corrected

1) Fix error in the calculation of the coordinate transformation matrix from local to basic coordinates for the ROD element

2) Error in the reduction from F-set to A-set load vectors when there are loads on the O-set. May cause fatal crash

3) Modal particiption factors and modal effective mass (Case Control requests MPFACTOR, MEFFMAS) are not being calculated unless Case Control has a SPCFORCE = ALL request

4) RBGLOBAL matrix used for stiffness matrix equilibrium checks was left with all zeros instead of calculated values resulting in the equilibrium checks not being correct.

5) Incorrect calculation of reduced loads on the A-set if there were omitted DOF's and if the O-set had applied loads

6) Modal effective mass and modal participation factors not being calculated in SOL 3 unless SPCFORCE = ALL in Case Control

7) Effect of offsets on BAR not included in the calculation of BAR forces. This will give erroneous BAR forces and invalidate the grid point force balance calculation

Version 2.10 (05/23/06) has the following errors corrected

1) Fix an error in the dimensioning of arrays that do the elimination of M-set degrees of freedom (DOF's). This only caused an error when there were more M-set DOF's than N-set DOF's

Version 2.08 (04/16/06) has the following errors corrected

1) Fix an error in the output of some data to the BUG output file

2) The stiffness matrix for the bending portion of the new QUAD4 element (based on 4 TRIA3 elements) had an error if the elements were warped

3) A SPC Bulk Data entry may be ignored if a new one with a different ID followed it

Version 2.07 (02/11/06) has the following errors corrected

1) Use of Bulk Data PARAM SPARSTOR NONYM results in a programming error and job failure. A work-around is not to use this parameter (use SPARSTOR SYM instead)

Version 2.06 (01/19/06) has the following errors corrected

1) Error in alocating memory for a mass array J_MFF

Version 2.05 (07/31/05) has the following errors corrected

1) Possible incorrect reporting of quad element geometry errors

2) Wrong Gauss locations for numerical integration of QUAD4

3) Possible rejection of a Bulk data comment entry if it had commas and it followed a Bulk Data entry that could have a continuation entry

4) Bulk data entries in comma delimited format would not allow continuation entries

Version 2.04 (05/15/05) has the following errors corrected

1) Incorrect fatal error with no message printed when MAT8 was in the Bulk Data deck.

2) Incorrect thermal load vectors calculated under some circumstances

3) Incorect indication of strains due to R.B. motion in subr BCHECK_2D.

4) No plate offsets would be processed for CTRIA3 causing a programming error message

5) Offsets for arrays PPE, PTE were being processed twice

Version 2.03 (02/13/05) has the following errors corrected

1) Several arrays in eigenvalue analyses were not allocated with the correct amount of memory. Depending on the problem, this could result in a fatal error when those arrays were used. Under many circumstances, the amount of memory allocated would have been enough and the problem would have executed without error.

2) Enforced displacements (nonzero SPC) with negative displacement value in fields 5 and/or 8 of the Bulk Data SPC entry were not handled correctly. This caused a fatal error 904 when MYSTRAN attempted to read filename.L1H (filename = name of DAT file submitted to MYSTRAN). Positive enforced displacements worked fine.

Ve3,rsion 2.02 (11/12/04) has the following errors corrected

1) Arrays with more than about 262,000 rows could not be sorted (due to a programming error). This error has been in probably since the original version 1.00

Version 2.01 (09/10/04) has the following errors corrected

1) Incorrect calculation of BAR element coordinate transformation matrix from local element coordinates to basic coordinates. This error was in version 1.00 - 2.00 but did not exhibit itself under all conditions.

2) The number of grids for an element (ELGP) could be incorrect resulting in a fatal error 1900 (undefined grid). This error was introduced in version 2.00 and corrected in version 2.01

Version 2.00 (09/01/04) has the following errors corrected

There have been several errors corrected since the release of Version 1.02. The more serious of them are:

1) Error in mass matrix generation. The wrong number of grids may be used for some elements.

2) Element pressure load array not transformed from local element coordinate system to basic coordinate system.

3) Element temperature and pressure arrays not initialized before calculating them. The error makes the thermal or pressure on all elements in a range that do not have the load defined as being equal to the load on the last element defined.

4) Geometry check on CW/CCW node ordering for quad elements is incorrect.

5) Serious error in calculation of stiffness matrix for the membrane quad when it is warped > MXWARP. Only the upper triangle of the stiffness matrix is calculated (therefore, all zeros below diagonal). This is only an error if the quads are warped (warning messages indicate which quads are warped > MXWARP).

6) Mass matrix not multiplied by WTMASS parameter somewhere. This was causing incorrect mass matrices when input units were weight and PARAM WTMASS was present.

7) Element temperature array DT was not calculated under some circumstances so that the thermal stress recovery matrices STEi had DT from prior calls to this subr making the thermal stress recovery matrices wrong.

8) Mass matrix not processed for offsets on BAR, ROD.