The EER Database and its Web Interface

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THE EER DATABASE AND ITS WEB INTERFACE

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SUMMARY

The EER database was created to store the data from the PJ00874 series of tests and to present this data in a concise and easy to access format. The data is organized in phases which are organized into series containing multiple runs. All of the runs in each series are done under the same conditions. The database is set up in the same way with one table for the runs and one for the series. The database is made up of three main components: the SQL Server Database the DLL file and the web page. The database stores all of the data from the rows and series. The DLL file transforms data from a format recognizable by the webpage and a format recognizable by the database and vice versa. A diagram of the entire system can be seen in Appendix A.

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Table of Contents

1. Introduction

The EER database was created to store the data from the PJ00874 series of tests and to present this data in a concise and easy to access format. The data is organized In phases which are organized into series containing multiple runs. All of the runs in each series are done under the same conditions. The database is set up in the same way with one table for the runs and one for the series. The database is made up of three main components: the SQL Server Database the DLL file and the web page. The database stores all of the data from the rows and series. The DLL file transforms data from a format recognizable by the webpage and a format recognizable by the database and vice versa. A diagram of the entire system can be seen in Appendix A.

2. Background

The database is intended to store the data from a series of experiments done on lifeboats done between 2000 and 2003. The experiments involved deploying the lifeboat models under different conditions such as: height, deployment system, weather system, etc. There are plans to expand this database to include other experiments and eventually make it accessible to people outside of NRC. This would require the implementation of security features to ensure that data is not altered.

3. Database

The database was created under SQL Server and is stored on the ODIN server. It stores all of the information that is displayed on the web page. The database is organized with two tables per phase: one holds the data for all the series and the other holds the data for

all the runs. Each entry in both tables is identified by a unique sequential ID number assigned at the time the entry was created. This ID number is automatically assigned by SQL server. The database also keeps track of when the entry was created and last modified.

4. DLL File

The DLL file is written and compiled in Visual Basic 6.0. It can be found along with its source code in the shared directory \\odin\wwweer$\internal\component. There is one class for each phase. Each of these classes have identical code except for the names of the variables. The function of the DLL is to convert the information from the webpage into a format that the database can understand and vice versa. The webpage passes variables directly to the DLL file which converts them to SQL strings that are sent to the database. These SQL strings query the database. The DLL converts the data returned from the queries into ADO objects which can be passed back to the webpage. In order to communicate with the database it must use the COM+ interface which will be discussed in the next section. In order to use the DLL file the it must first be registered with the local computer and COM+. An example of the code from one phase of the DLL file can be seen in appendix B.

5. Web Interface

The web interface is accessible on the local intranet at “http:\\odin\eer”. The functions of this interface are: adding new runs/series, modifying the data in existing rows, Searching the database and displaying statistics. All of the information displayed on the website comes from the database. The web interface accepts an input from the user. This input is

then sent to the DLL file which queries the database and returns the data in the form of a ADO object. The data from this object is then displayed on the web page.

6. COM+ Package

The COM+ package is built into windows 2000 and facilitates communications between programs and databases. It is a part of the IIS(Internet Information Systems) package that can be installed from the control panel. It allows the programmer to specify the location of the database, the login information and the type of database. This means that in the future the maintenance of the database will be easier. If the network is changed the programmer will not have to recompile the DLL file to update the system, they will just need to change the connection string in COM+. COM+ also simplifies the connection process. The COM+ object automatically connects upon construction so the DLL only needs to call the constructor function and the rest is done automatically. A disadvantage to this component is that the programmer has to reregister the DLL file every time it is changed. This increases the development time but the time saved in maintenance greatly outweighs the increased development time.

7. DTS and Importing Data

7.1 DTS Routines

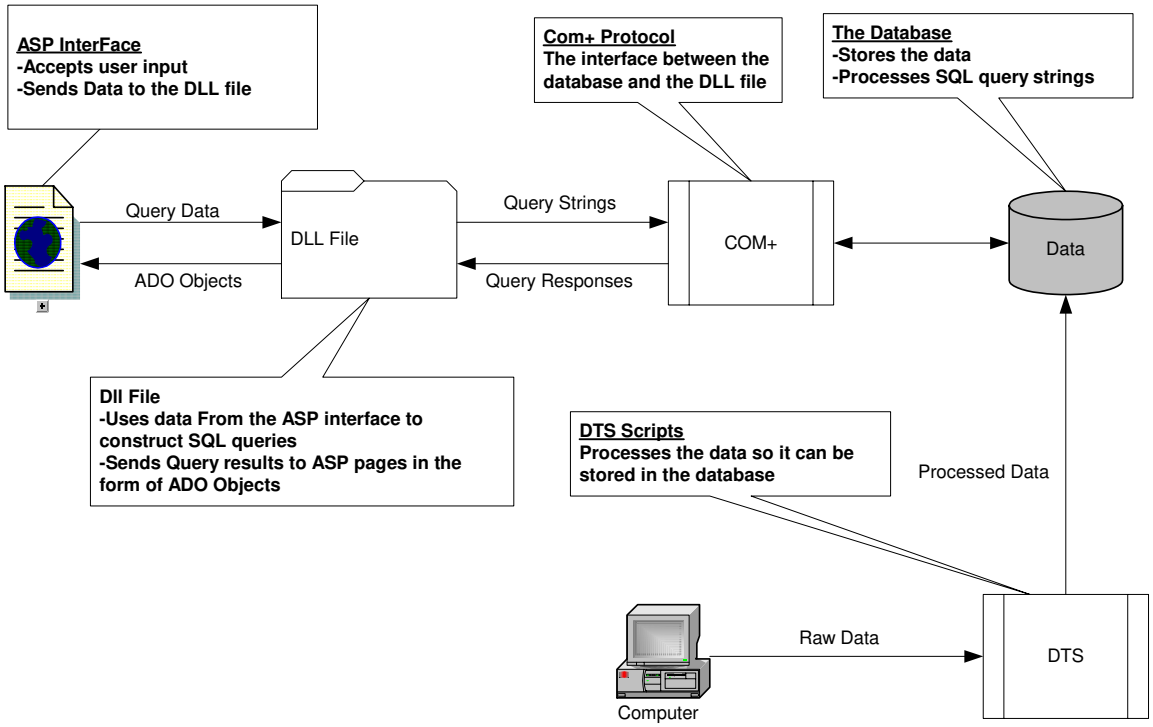
Although data can be inserted into the database through the web interface it would be very tedious to input all of the data using this method. In order to input the large amounts of data in the database we need another tool called Data Transformation Services(DTS). DTS is a package built into SQL server 2000 that allows the manipulation of large amounts of data. It is a user-friendly graphical language that uses SQL script to

manipulate data. The data is stored in a comma separated format on \\odin\eer$\. The comma separated format is a native format of both DTS and Visual Basic so it is a natural choice. A sample of the SQL code used to transform the data can be seen in Appendix C.

7.2 Inputting Data

The data to be converted by DTS originally came from Excel spreadsheets or IGOR .pxp files that were compiled during the testing phase. The data in the IGOR files is the raw data from the experiments and needs heavy processing before entry into the database. The data in the excel spreadsheets is already processed and only needs to be reformatted to fit in the database. This formatting was done using VBA (Visual Basic for Applications) a package built into Excel. An example of the formatting needed can be seen in appendix D. An example of the code used to process the data can be seen in appendix E.

Appendix A


ASP InterFace
-Accepts user input
-Sends Data to the DLL file
Com+ Protocol
The interface between the database and the DLL file
The Database
-Stores the data
-Processes SQL query strings
Query Data
ADO Objects
DLL File
Query Strings
Query Responses
COM+
Data
Dll File
-Uses data From the ASP interface to construct SQL queries
-Sends Query results to ASP pages in the form of ADO Objects
DTS Scripts
Processes the data so it can be stored in the database
Processed Data
Raw Data
DTS
Computer

Appendix B

```
Option Explicit
Implements IObjectConstruct  'from COM+ services type library


Private Sub IObjectConstruct_Construct(ByVal pCtorObj As Object)
    '*** Get the constructor string from COM+
    gsConnString = pCtorObj.ConstructString
End Sub

'************************************************************************
' METHOD: getSeriesInfo
'************************************************************************

Public Function getSeriesInfo(ByVal strSeriesID As String) As ADODB.Recordset

On Error GoTo ErrorHandler

   Dim rsSeries
   Set rsSeries = New ADODB.Recordset

   lngRetCode = initializeDB()

   strSQL = "select * from Phase0Series where SeriesID = " & strSeriesID

   rsSeries.Open strSQL, dbNRC, adOpenStatic, adLockReadOnly

   Set getSeriesInfo = rsSeries

   Exit Function

ErrorHandler:
   Set getSeriesInfo = rsSeries
   strDesc = Err.Description
   If Err.Number <> 0 Then
      Open "C:\Temp\NRCLog.dat" For Append Shared As #1
      Write #1, CStr(Now), "nrcPh0.getSeriesInfo", getSeriesInfo, strDesc, strSQL
      Close #1
   Else
      Set getSeriesInfo = rsSeries
   End If

End Function
```

```
'*************************************************************************
' METHOD: getRunInfo
'*************************************************************************

Public Function getRunInfo(ByVal strRunID As String) As ADODB.Recordset

On Error GoTo ErrorHandler

   Dim rsRun
   Set rsRun = New ADODB.Recordset

   lngRetCode = initializeDB()

   strSQL = "select * from Phase0Run where RunID = " & strRunID

   rsRun.Open strSQL, dbNRC, adOpenStatic, adLockReadOnly

   Set getRunInfo = rsRun

   Exit Function

ErrorHandler:
   Set getRunInfo = rsRun
   strDesc = Err.Description
   If Err.Number <> 0 Then
      Open "C:\Temp\NRCLog.dat" For Append Shared As #1
      Write #1, CStr(Now), "nrcPh0.getRunInfo", getRunInfo, strDesc, strSQL
      Close #1
   Else
      Set getRunInfo = rsRun
   End If

End Function

'*************************************************************************
' METHOD: listRunsForSeries
'*************************************************************************

Public Function listRunsForSeries(ByVal strSeriesID As String) As ADODB.Recordset

Dim rsRunsForSeries

On Error GoTo ErrorHandler

   Set rsRunsForSeries = New ADODB.Recordset
```

```
    lngRetCode = initializeDB()

    strSQL = "select * from Phase0Run where SeriesID = " & strSeriesID & " order by
RunName"

    rsRunsForSeries.Open strSQL, dbNRC, adOpenStatic, adLockReadOnly

    Set listRunsForSeries = rsRunsForSeries

    Exit Function

ErrorHandler:
    Set listRunsForSeries = rsRunsForSeries
    strDesc = Err.Description
    If Err.Number <> 0 Then
        Open "C:\Temp\NRCLog.dat" For Append Shared As #1
        Write #1, CStr(Now), "nrcPh0.listRunsForSeries", listRunsForSeries, strDesc,
strSQL
        Close #1
    Else
        Set listRunsForSeries = rsRunsForSeries
    End If

End Function

'**********************************************************************
' METHOD: listAllSeries
'**********************************************************************


Public Function listAllSeries() As ADODB.Recordset


Dim rsSeries
Dim strSeriesName As String

On Error GoTo ErrorHandler

    Set rsSeries = New ADODB.Recordset

    lngRetCode = initializeDB()

    strSeriesName = "%"

    strSQL = "select Phase0Series.SeriesID,Phase0Series.SeriesName from Phase0Series "
    strSQL = strSQL & "where SeriesName like '" & strSeriesName & "' "
```

```
    strSQL = strSQL & "order by SeriesName"
    rsSeries.Open strSQL, dbNRC, adOpenStatic, adLockReadOnly


    Set listAllSeries = rsSeries

    Exit Function

ErrorHandler:
    Set listAllSeries = rsSeries
    strDesc = Err.Description
    If Err.Number <> 0 Then
        Open "C:\Temp\NRCLog.dat" For Append Shared As #1
        Write #1, CStr(Now), "nrcPh0.listAllSeries", listAllSeries, strDesc, strSQL
        Close #1
    Else
        Set listAllSeries = rsSeries
    End If

End Function


'**********************************************************************
' METHOD: listSeries
'**********************************************************************


Public Function listSeries(ByVal strSeriesName As String, ByVal strWeatherType As
String, _
                    ByVal strLaunchConfiguration As String) As ADODB.Recordset


Dim rsSeries

On Error GoTo ErrorHandler

    Set rsSeries = New ADODB.Recordset

    lngRetCode = initializeDB()

    strSeriesName = Replace(strSeriesName, "*", "%")

    If strSeriesName = "" Then
        strSeriesName = "%"
    End If
```

```
   strSQL = "select Phase0Series.SeriesID,Phase0Series.SeriesName, Phase0Run.RunID,
Phase0Run.RunName from Phase0Run INNER JOIN Phase0Series ON
Phase0Run.SeriesID = Phase0Series.SeriesID "
   strSQL = strSQL & "where SeriesName like '" & strSeriesName & "' "
   If strWeatherType <> 0 Then
      strSQL = strSQL & "and WeatherType = '" & CInt(strWeatherType) & "' "
   End If
   If strLaunchConfiguration <> 0 Then
      strSQL = strSQL & "and LaunchConfiguration = '" & CInt(strLaunchConfiguration)
& "' "
   End If

   strSQL = strSQL & "order by SeriesName"
   rsSeries.Open strSQL, dbNRC, adOpenStatic, adLockReadOnly


   Set listSeries = rsSeries

   Exit Function

ErrorHandler:
   Set listSeries = rsSeries
   strDesc = Err.Description
   If Err.Number <> 0 Then
      Open "C:\Temp\NRCLog.dat" For Append Shared As #1
      Write #1, CStr(Now), "nrcPh0.listSeries", listSeries, strDesc, strSQL
      Close #1
   Else
      Set listSeries = rsSeries
   End If

End Function

'*********************************************************************
' METHOD: updateSeries
'*********************************************************************

Public Function updateSeries(ByVal strSeriesID As String, _
                  ByVal strSeriesName As String, ByVal strWeatherType As String, _
                  ByVal strLaunchConfiguration As String, ByVal strComments As String)
As Long


On Error GoTo ErrorHandler
```

```
    lngRetCode = initializeDB()

    strSQL = "update Phase0Series set "
    strSQL = strSQL & "SeriesName = '" & strSeriesName & "'"
    strSQL = strSQL & ", WeatherType = " & strWeatherType
    strSQL = strSQL & ", LaunchConfiguration = " & strLaunchConfiguration
    strSQL = strSQL & ", Comments = '" & strComments & "'"
    strSQL = strSQL & " where SeriesID = " & strSeriesID


    dbNRC.Execute strSQL



Exit Function

ErrorHandler:
    updateSeries = Err.Number
    strDesc = Err.Description
    If Err.Number <> 0 Then
        Open "C:\Temp\NRCLog.dat" For Append Shared As #1
        Write #1, CStr(Now), "nrcPh0.updateSeries", updateSeries, strDesc, strSQL
        Close #1
    Else
        updateSeries = -1
    End If

End Function

'**********************************************************************
' METHOD: newSeries
'**********************************************************************

Public Function newSeries(ByRef strSeriesID As Variant, _
                    ByVal strSeriesName As String, ByVal strWeatherType As String, _
                    ByVal strLaunchConfiguration As String, ByVal strComments As String)
As Long

On Error GoTo ErrorHandler

    lngRetCode = initializeDB()

    strSQL = "insert into
Phase0Series(SeriesName,WeatherType,LaunchConfiguration,Comments) "
```

```
    strSQL = strSQL & "values('" & strSeriesName & "'," & strWeatherType & "," &
strLaunchConfiguration
    strSQL = strSQL & ",'" & strComments & "')"

    dbNRC.Execute strSQL

    strSQL = "SELECT SeriesID FROM Phase0Series WHERE SeriesName = '" &
strSeriesName & "' Order by SeriesID DESC"

    Dim rsSeries
    Set rsSeries = New ADODB.Recordset
    rsSeries.Open strSQL, dbNRC, adOpenStatic, adLockReadOnly
    strSeriesID = rsSeries!SeriesID
    rsSeries.Close
    Set rsSeries = Nothing


Exit Function

ErrorHandler:
    newSeries = Err.Number
    strDesc = Err.Description
    If Err.Number <> 0 Then
        Open "C:\Temp\NRCLog.dat" For Append Shared As #1
        Write #1, CStr(Now), "nrcPh0.newSeries", newSeries, strDesc, strSQL
        Close #1
    Else
        newSeries = -1
    End If

End Function

'**********************************************************************
' METHOD: deleteSeries
'**********************************************************************

Public Function deleteSeries(ByVal strSeriesID As String) As Long

On Error GoTo ErrorHandler

    lngRetCode = initializeDB()

    strSQL = "DELETE FROM Phase0Run WHERE SeriesID = " & strSeriesID
    dbNRC.Execute strSQL

    strSQL = "DELETE FROM Phase0Series WHERE SeriesID = " & strSeriesID
```

```
    dbNRC.Execute strSQL


Exit Function

ErrorHandler:
    deleteSeries = Err.Number
    strDesc = Err.Description
    If Err.Number <> 0 Then
        Open "C:\Temp\NRCLog.dat" For Append Shared As #1
        Write #1, CStr(Now), "nrcPh0.deleteSeries", deleteSeries, strDesc, strSQL
        Close #1
    Else
        deleteSeries = -1
    End If
End Function

'************************************************************************
' METHOD: deleteRun
'************************************************************************

Public Function deleteRun(ByVal strRunID As String) As Long

On Error GoTo ErrorHandler

    lngRetCode = initializeDB()

    strSQL = "DELETE FROM Phase0Run WHERE RunID = " & strRunID
    dbNRC.Execute strSQL


Exit Function

ErrorHandler:
    deleteRun = Err.Number
    strDesc = Err.Description
    If Err.Number <> 0 Then
        Open "C:\Temp\NRCLog.dat" For Append Shared As #1
        Write #1, CStr(Now), "nrcPh0.deleteRun", deleteRun, strDesc, strSQL
        Close #1
    Else
        deleteRun = -1
    End If
End Function
```

```
'**********************************************************************
' METHOD: getStats
'**********************************************************************


Public Function getStats(ByVal strSeriesName As String, ByVal strWeatherType As
String, _
                    ByVal strLaunchConfiguration As String) As ADODB.Recordset


Dim rsStats

On Error GoTo ErrorHandler

   Set rsStats = New ADODB.Recordset

   lngRetCode = initializeDB()

   'star * is the wildcard character used on the frontend.  replace it with a % so sql
recognizes it.
   strSeriesName = Replace(strSeriesName, "*", "%")

   'if nothing is entered in the series name search criteria, use a % by itself so it won't
limit the results to
   'series with out a name (wich should never occur because name is mandatory)
   If strSeriesName = "" Then
      strSeriesName = "%"
   End If

   'sample for testing in sql query analyzer:
   'SELECT     AVG(r.SplashDownData-0) AS LaunchToSplashAvg,
MAX(r.SplashDownData-0) AS LaunchToSplashMax, MIN(r.SplashDownData-0) AS
LaunchToSplashMin
   'FROM       Phase0Run r, Phase0Series s
   'Where r.SeriesID = s.SeriesID
   'and        s.seriesname like '%'
   'and        (s.WaveSteepness = 2)

   strSQL = "select AVG(r.SplashDownData-0) AS LaunchToSplashAvg,
MAX(r.SplashDownData-0) AS LaunchToSplashMax, MIN(r.SplashDownData-0) AS
LaunchToSplashMin, STDEV(r.SplashDownData-0) AS LaunchToSplashStdev "
   strSQL = strSQL & "AVG(r.DavitFallsReleaseData - r.SplashDownVMS) AS
SplashtoDavitAvg, MAX(r.DavitFallsReleaseData - r.SplashDownVMS) AS
SplashtoDavitMax, MIN(r.DavitFallsReleaseData - r.SplashDownVMS) AS
SplashtoDavitMin, STDEV(r.DavitFallsReleaseData - r.SplashDownVMS) AS
SplashtoDavitStdev, "
```

```
    strSQL = strSQL & "AVG(r.DavitFallsReleaseData-r.LaunchStartVMS) AS
LaunchtoDavitAvg, MAX(r.DavitFallsReleaseData-r.LaunchStartVMS) AS
LaunchtoDavitMax, MIN(r.DavitFallsReleaseData-r.LaunchStartVMS) AS
LaunchtoDavitMin, STDEV(r.DavitFallsReleaseData-r.LaunchStartVMS) AS
LaunchtoDavitStdev, "
    strSQL = strSQL & "from Phase0Run r, Phase0Series s "
    strSQL = strSQL & "where r.SeriesID = s.SeriesID "
    strSQL = strSQL & "and s.SeriesName like '" & strSeriesName & "' "
    'on the front end, if no wavesteepness is selected from the drop down on the search
page
    'then a value of zero 0 is passed into this function
    'so if it's anything but zero 0 include it as a condition of the sql query
    If strWeatherType <> 0 Then
        strSQL = strSQL & "and s.WeatherType = '" & CInt(strWeatherType) & "' "
    End If
    If strLaunchConfiguration <> 0 Then
        strSQL = strSQL & "and s.LaunchConfiguration = '" &
CInt(strLaunchConfiguration) & "' "
    End If

    'strSQL = strSQL & "order by s.SeriesName"
    rsStats.Open strSQL, dbNRC, adOpenStatic, adLockReadOnly

    Set getStats = rsStats

    Exit Function

ErrorHandler:
    Set getStats = rsStats
    strDesc = Err.Description
    If Err.Number <> 0 Then
        Open "C:\Temp\NRCLog.dat" For Append Shared As #1
        Write #1, CStr(Now), "nrcPh0.getStats", getStats, strDesc, strSQL
        Close #1
    Else
        Set getStats = rsStats
    End If

End Function

'**********************************************************************
' METHOD: newRun
'**********************************************************************
```

```
'Public Function newRun(ByRef RunID As Variant, ByVal SeriesID As String, ByVal
RunName As String, ByVal WaveFile As String, ByVal TimeToComplete As String,
ByVal RunComments As String, ByVal FrontEndDeletesIGORPoints As String, _
'               ByVal SplashDownData As String, ByVal DavitFallsReleaseData As
String, ByVal TagLineReleaseData As String, ByVal PayoutRate As String, ByVal
DavitLoadsInboard As String, ByVal DavitLoadsOutboard As String, _
'               ByVal TagLineatSplash As String, ByVal BoomBaseMaxLoadData As
String, ByVal BoomBaseMaxLoadDataIGORPoints As String, ByVal BoomAngleStart
As String, ByVal BoomAngleMin As String, ByVal BoomAngleRelease As String, _
'               ByVal SplashOnWave As String, ByVal Impact As String, ByVal
BoundaryCrossingDangerIGORPoints As String, ByVal
BoundaryCrossingSplashIGORPoints As String, ByVal
BoundaryCrossingSafeIGORPoints As String, _
'               ByVal TEMPSCTravelDistanceSpashDanger As String, ByVal
TEMPSCTravelDistanceSpashtoSplash As String, ByVal
TEMPSCTravelDistanceSpashtoRescue As String, ByVal WaveHeight As String, ByVal
WavePeriod As String, _
'               ByVal WindSpeedB1 As String, ByVal WindSpeed2 As String, ByVal
WindSpeed3 As String, ByVal WindSpeed4T As String, ByVal WavePhaseStartT1 As
String, ByVal WavePhaseEndT2 As String, ByVal StartofLaunchCoordinatesX0 As
String, _
'               ByVal StartofLaunchCoordinatesY0 As String, ByVal
StartofLaunchCoordinatesZ0 As String, ByVal StartofLaunchCoordinatesD0 As String,
ByVal SplashDownCoordinatesX1 As String, _
'               ByVal SplashDownCoordinatesY1 As String, ByVal
SplashDownCoordinatesZ1 As String, ByVal SplashDownCoordinatesD1 As String,
ByVal TaglineReleaseCoordinatesX2 As String, _
'               ByVal TaglineReleaseCoordinatesY2 As String, ByVal
TaglineReleaseCoordinatesZ2 As String, ByVal TaglineReleaseCoordinatesD2 As
String, ByVal TaglineReleaseCoordinatesPitch As String, _
'               ByVal TaglineReleaseCoordinatesRoll As String, ByVal
SetbackCoordinatesX3 As String, ByVal SetbackCoordinatesY3 As String, ByVal
SetbackCoordinatesZ3 As String, ByVal SetbackCoordinatesD3 As String, _
'               ByVal SetbackCoordinatesPitch As String, ByVal
SetbackCoordinatesRoll As String, ByVal ProgressiveSetbackCoordinatesX4 As String,
ByVal ProgressiveSetbackCoordinatesY4 As String, _
'               ByVal ProgressiveSetbackCoordinatesZ4 As String, ByVal
ProgressiveSetbackCoordinatesD4 As String, ByVal
ProgressiveSetbackCoordinatesPitch As String, ByVal
ProgressiveSetbackCoordinatesRoll As String, _
'               ByVal LoweringPhaseX As String, ByVal LoweringPhaseY As String,
ByVal LoweringPhaseZ As String, ByVal LoweringPhaseYAWrms As String, ByVal
LoweringPhasePITCHrms As String, _
'               ByVal LoweringPhaseROLLrms As String, ByVal LoweringPhaseAccX
As String, ByVal LoweringPhaseAccY As String, ByVal LoweringPhaseAccZ As String,
ByVal LoweringPhaseT1 As String, ByVal LoweringPhaseT2 As String, _
```

```
'                   ByVal SplashDownAccX As String, ByVal SplashDownAccY As String,
ByVal SplashDownAccZ As String, ByVal SplashDownTz1 As String, ByVal
SplashDownTz2 As String, ByVal SplashDownPhaseYAW As String, _
'                   ByVal SplashDownPhasePITCH As String, ByVal
SplashDownPhaseROLL As String, ByVal AccelerationsMotionsDuringSailawayAccX
As String, ByVal AccelerationsMotionsDuringSailawayAccY As String, _
'                   ByVal AccelerationsMotionsDuringSailawayAccZ As String, ByVal
AccelerationsMotionsDuringSailawayTZ1 As String, ByVal
AccelerationsMotionsDuringSailawayTZ2 As String, ByVal
AccelerationsMotionsDuringSailawayYAW As String, _
'                   ByVal AccelerationsMotionsDuringSailawayPITCH As String, ByVal
AccelerationsMotionsDuringSailawayROLL As String) As Long

Public Function newRun(ByRef strRunID As Variant, ByVal strRunInfo As String) As
Long

On Error GoTo ErrorHandler

   lngRetCode = initializeDB()

   strSQL = "insert into
Phase0Run(SeriesID,RunName,Comments,TimeToComplete,WaveFile,LaunchStartVM
S,"
   strSQL = strSQL &
"LaunchStartIGORPoint,SplashDownVMS,SplashDownIGORPoint,DavitFallsReleaseDa
ta,DavitFallsReleaseDataIGORPoint,TagLineReleaseIGORPoint,"
   strSQL = strSQL &
"SplashonaWave,VideoSplash,BoundaryCrossingDangerIGORPoints,BoundaryCrossing
SafeIGORPoints,TEMPSCTravelDistanceSplashtoDanger,TEMPSCTravelDistanceDang
ertoSafe,AccelerationsDuringLoweringMin,"
   strSQL = strSQL &
"AccelerationsDuringLoweringMean,AccelerationsDuringLoweringMax,AccelerationsD
uringLoweringStdDev,AccelerationsDuringSailAwayMin,AccelerationsDuringSailAway
Mean,AccelerationsDuringSailAwayMax,AccelerationsDuringSailAwayStdDev,"
   strSQL = strSQL &
"StartofLaunchCoordinatesX0,StartofLaunchCoordinatesY0,StartofLaunchCoordinatesZ
0,SplashDownCoordinatesX1,SplashDownCoordinatesY1,SplashDownCoordinatesZ1,Se
tbackCoordinatesX2,"
   strSQL = strSQL &
"SetbackCoordinatesY2,SetbackCoordinatesZ2,WaveHeightUpstream,WaveHeightBeam
,WindSpeed) "
   strSQL = strSQL & "values(" & strRunInfo & ")"

'   strSQL = "insert into
Phase0Run(SeriesID,RunName,WaveFile,TimeToComplete,Comments,FrontEndDeletes
IGORPoints,SplashDownData,"
```

```
'    strSQL = strSQL &
"DavitFallsReleaseData,TagLineReleaseData,PayoutRate,DavitLoadsInboard,DavitLoad
sOutboard,"
'    strSQL = strSQL &
"TagLineatSplash,BoomBaseMaxLoadData,BoomBaseMaxLoadDataIGORPoints,Boom
AngleStart,BoomAngleMin,"
'    strSQL = strSQL &
"BoomAngleRelease,SplashOnaWave,Impact,BoundaryCrossingDangerIGORPoints,Bou
ndaryCrossingSplashIGORPoints,"
'    strSQL = strSQL &
"BoundaryCrossingSafeIGORPoints,TEMPSCTravelDistanceSpashDanger,TEMPSCTra
velDistanceSpashtoSplash,"
'    strSQL = strSQL &
"TEMPSCTravelDistanceSpashtoRescue,WaveHeight,WavePeriod,WindSpeedB1,Wind
Speed2,WindSpeed3,WindSpeed4T,"
'    strSQL = strSQL &
"WavePhaseStartT1,WavePhaseEndT2,StartofLaunchCoordinatesX0,StartofLaunchCoor
dinatesY0,StartofLaunchCoordinatesZ0,"
'    strSQL = strSQL &
"StartofLaunchCoordinatesD0,SplashDownCoordinatesX1,SplashDownCoordinatesY1,S
plashDownCoordinatesZ1,"
'    strSQL = strSQL &
"SplashDownCoordinatesD1,TaglineReleaseCoordinatesX2,TaglineReleaseCoordinates
Y2,TaglineReleaseCoordinatesZ2,"
'    strSQL = strSQL &
"TaglineReleaseCoordinatesD2,TaglineReleaseCoordinatesPitch,TaglineReleaseCoordin
atesRoll,SetbackCoordinatesX3,"
'    strSQL = strSQL &
"SetbackCoordinatesY3,SetbackCoordinatesZ3,SetbackCoordinatesD3,SetbackCoordinat
esPitch,SetbackCoordinatesRoll,"
'    strSQL = strSQL &
"ProgressiveSetbackCoordinatesX4,ProgressiveSetbackCoordinatesY4,ProgressiveSetba
ckCoordinatesZ4,"
'    strSQL = strSQL &
"ProgressiveSetbackCoordinatesD4,ProgressiveSetbackCoordinatesPitch,ProgressiveSetb
ackCoordinatesRoll,"
'    strSQL = strSQL &
"LoweringPhaseX,LoweringPhaseY,LoweringPhaseZ,LoweringPhaseYAWrms,Lowerin
gPhasePITCHrms,LoweringPhaseROLLrms,"
'    strSQL = strSQL &
"LoweringPhaseAccX,LoweringPhaseAccY,LoweringPhaseAccZ,LoweringPhaseT1,Lo
weringPhaseT2,SplashDownAccX,"
'    strSQL = strSQL &
"SplashDownAccY,SplashDownAccZ,SplashDownTz1,SplashDownTz2,SplashDownPh
aseYAW,SplashDownPhasePITCH,"
```

```
'    strSQL = strSQL &
"SplashDownPhaseROLL,AccelerationsMotionsDuringSailawayAccX,AccelerationsMot
ionsDuringSailawayAccY,"
'    strSQL = strSQL &
"AccelerationsMotionsDuringSailawayAccZ,AccelerationsMotionsDuringSailawayTZ1,
AccelerationsMotionsDuringSailawayTZ2,"
'    strSQL = strSQL &
"AccelerationsMotionsDuringSailawayYAW,AccelerationsMotionsDuringSailawayPITC
H,AccelerationsMotionsDuringSailawayROLL)"


    dbNRC.Execute strSQL

    Dim RunInfoArray, strRunName
    RunInfoArray = Split(strRunInfo, ",")
    strRunName = RunInfoArray(1)
    'Counter = UBound(RunInfoArray)

    'For x = 0 To Counter
     '   strValue = RunInfoArray(x)
    'Next

    strSQL = "SELECT RunID FROM Phase0Run WHERE RunName = " & strRunName
& " Order by RunID DESC"

    Dim rsRun
    Set rsRun = New ADODB.Recordset
    rsRun.Open strSQL, dbNRC, adOpenStatic, adLockReadOnly
    strRunID = rsRun!RunID
    rsRun.Close
    Set rsRun = Nothing


Exit Function

ErrorHandler:
    newRun = Err.Number
    strDesc = Err.Description
    If Err.Number <> 0 Then
        Open "C:\Temp\NRCLog.dat" For Append Shared As #1
        Write #1, CStr(Now), "nrcPh0.newRun", newRun, strDesc, strSQL
        Close #1
    Else
        newRun = -1
    End If
```

```
End Function

'*************************************************************************
' METHOD: updateRun
'*************************************************************************

Public Function updateRun(ByVal strRunID As String, ByVal strRunInfo As String) As
Long


On Error GoTo ErrorHandler

   lngRetCode = initializeDB()

   strSQL = "update Phase0Run set " & strRunInfo & " where RunID = " & strRunID


   dbNRC.Execute strSQL



Exit Function

ErrorHandler:
   updateRun = Err.Number
   strDesc = Err.Description
   If Err.Number <> 0 Then
      Open "C:\Temp\NRCLog.dat" For Append Shared As #1
      Write #1, CStr(Now), "nrcPh0.updateRun", updateRun, strDesc, strSQL
      Close #1
   Else
      updateRun = -1
   End If

End Function
```

Appendix C

```
DECLARE @SeriesName varchar(10)
DECLARE @RunNumber varchar(3)
DECLARE @PlotName varchar(50)
DECLARE @PlotValue nvarchar(20)
DECLARE @P0SeriesIDCheck int
DECLARE @P0RunIDCheck int

DECLARE @P0SeriesID nvarchar(5)

DECLARE @MySQL nvarchar(200)
DECLARE @TableName nvarchar(20)

SET @TableName = 'Phase0Run'

DECLARE Import_Cursor CURSOR FOR
SELECT SeriesName, RunNumber, PlotName, PlotValue FROM dbo.ImportData
OPEN Import_Cursor
FETCH NEXT FROM Import_Cursor INTO @SeriesName, @RunNumber, @PlotName,
@PlotValue

        WHILE @@FETCH_STATUS = 0
        BEGIN

        SET @P0SeriesIDCheck = (select SeriesID from Phase0Series where SeriesName =
@SeriesName)

                IF isnull(@P0SeriesIDCheck,0) = 0
                BEGIN
                insert into Phase0Series
                        (
                        SeriesName,
                        WeatherType,
                        LaunchConfiguration,
                        Orientation,
                        Clearance,
                        Height,
                        Payload
                        )
                values
                        (
                        @SeriesName,
                        right(@SeriesName,1),
                        0,
                        1,
                        1,
                        1,
                        1
```

```
                    )
                END

        SET @P0SeriesID = (select SeriesID from Phase0Series where SeriesName =
@SeriesName)
        SET @P0RunIDCheck = (select RunID from Phase0Run where SeriesID = @P0SeriesID
and RunName = @RunNumber)

                IF isnull(@P0RunIDCheck,0) = 0
                BEGIN
                SET @MySQL = 'INSERT INTO dbo.' + @TableName + ' (' + 'SeriesID,
RunName, ' + rtrim(@PlotName) + ')' +
                space(1) + 'values' + space(1) + '(' + @P0SeriesID + ', ' + "" + @RunNumber + ""
+ ', ' + @PlotValue + ')'

                EXEC (@MySQL)
                UPDATE dbo.Phase0Run SET DateTimeStampCreate = getdate() WHERE
SeriesID = @P0SeriesID and RunName = @RunNumber
                END

                ELSE
                BEGIN
                SET @MySQL = 'UPDATE dbo.' + @TableName + ' SET ' + @PlotName + ' = '
+ @PlotValue + ' FROM ' +
                @TableName + ' WHERE ' + ' SeriesID ' + ' = ' + @P0SeriesID + ' AND ' +
'RunName' + ' = ' + @RunNumber

                EXEC (@MySQL)
                UPDATE dbo.Phase0Run SET DateTimeStampModify = getdate() WHERE
SeriesID = @P0SeriesID and RunName = @RunNumber
                END


        FETCH NEXT FROM Import_Cursor INTO @SeriesName, @RunNumber,
@PlotName, @PlotValue
        END



CLOSE Import_Cursor
DEALLOCATE Import_Cursor
```

Appendix D

Series Name	Run Number	WindSpeed	Impact	SplashDownVMS
700	001	8.13245	Y	82.58
900	003	1.76349	N	45.87

Becomes

“SeriesName”, “RunNumber”, “PlotName”, “PlotValue”
“700”, “001”, “WindSpeed”, 8.13245
“700”, “001”, “Impact”, 1
“700”, “001”, “SplashDownVMS”, 82.58
“900”, “003”, “WindSpeed”, 1.76349
“900”, “003”, “Impact”, 0
“900”, “003”, “SplashDownVMS”, 45.87

Appendix E

```
Sub ExportFile()
'
' ExportFile Macro
' Macro recorded 6/28/2005 by David Goosney
'
' Keyboard Shortcut: Ctrl+Shift+G
'
    Dim SeriesName As String
    Dim RunName As String
    Dim ValueName As Variant
    Dim tempStr As String
    Dim tempValue As Variant


    Dim i As Integer

    ValueName = Array("LaunchStartVMS", "", "LaunchStartIGORPoint", "SplashDownVMS", _
        "SplashDownIGORPoint", "DavitFallsReleaseData", "DavitFallsReleaseDataIGORPoint",
"ReleaseVideo", "", _
        "", "", "", "SplashonaWave", "VideoSplash", _
        "PayoutRate", "DeltarandDeltarSumDeletes", "", "BoundaryCrossingDangerIGORPoints",
"", _
        "BoundaryCrossingSplashIGORPoints", "", "BoundaryCrossingSafeIGORPoints",
"TEMPSCTravelDistanceSplashtoDanger", "TEMPSCTravelDistanceDangertoSplash", _
        "TEMPSCTravelDistanceDangertoSafe", "", "", "", "Impact", _
        "WavePhaseStartT1", "WavePhaseEndT2", "", "", "WaveAmplitude", _
        "WavePeriod", "WaveSteepness", "WindSpeed", "StartofLaunchCoordinatesX0",
"StartofLaunchCoordinatesY0", _
        "StartofLaunchCoordinatesZ0", "StartofLaunchCoordinatesD0",
"SplashDownCoordinatesX1", "SplashDownCoordinatesY1", "SplashDownCoordinatesZ1", _
        "SplashDownCoordinatesD1", "SetbackCoordinatesX2", "SetbackCoordinatesY2",
"SetbackCoordinatesZ2", "SetbackCoordinatesD2", _
        "SetbackCoordinatesIGORPoints", "", "", "", "", _
        "", "", "", "", "", "", _
        "SplashDownAccX", "SplashDownAccY", "SplashDownAccZ", "", "SetBackAccX", _
        "SetBackAccY", "SetBackAccZ", "", "ImpactAccX", "ImpactAccY", _
        "ImpactAccZ", "", "SailAwayAccX", "SailAwayAccY", "SailAwayAccZ", _
        "", "MiscAccX", "MiscAccY", "MiscAccZ", "", _
        "AccelerationsMotionsDuringSailawayLoweringPhaseAccX",
"AccelerationsMotionsDuringSailawayLoweringPhaseAccY",
"AccelerationsMotionsDuringSailawayLoweringPhaseAccZ",
"AccelerationsMotionsDuringSailawayLoweringPhaseX",
"AccelerationsMotionsDuringSailawayLoweringPhaseY", _
        "AccelerationsMotionsDuringSailawayLoweringPhaseYAW",
"AccelerationsMotionsDuringSailawayAccX", "AccelerationsMotionsDuringSailawayAccY",
"AccelerationsMotionsDuringSailawayAccZ", "AccelerationsMotionsDuringSailawayX", _
```

```
        "AccelerationsMotionsDuringSailawayY", "AccelerationsMotionsDuringSailawayZ",
"AccelerationsMotionsDuringSailawayYAW", "AccelerationsMotionsDuringSailawayPITCH",
"AccelerationsMotionsDuringSailawayROLL", _
        "DavitLoadsInboard", "DavitLoadsOutboard")



    Open "c:\PhaseOneData.dat" For Append As #1

    SeriesName = ActiveCell.Value
    ActiveCell.Offset(1, 0).Select
    Do While (ActiveCell.Value <> Empty)
        RunName = ActiveCell.Value
        For i = LBound(ValueName) To UBound(ValueName)
            ActiveCell.Offset(0, 1).Select
            tempStr = ActiveCell.Value
            Select Case tempStr
                Case "N", "calm"
                    tempValue = 0
                Case "Y", "C"
                    tempValue = 1
                Case "T"
                    tempValue = 2
                Case "U"
                    tempValue = 3
                Case "D"
                    tempValue = 4
                Case Else
                    tempValue = ActiveCell.Value
            End Select

            If ValueName(i) <> "" And tempStr <> "" And tempStr <> "-" Then
                Write #1, SeriesName, RunName, ValueName(i), tempValue
            End If
        Next
        ActiveCell.Offset(1, -UBound(ValueName) - 1).Select
    Loop

    Close #1
End Sub
```