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Science and Utilization

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**Payload Data Library
User's Guide**

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INTERNATIONAL SPACE STATION

PAYLOAD DATA LIBRARY
USER'S GUIDE

D683-35473-01

JULY 30, 2001

Boeing Defense & Space Group
Missiles & Space Division
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ABSTRACT

This User's Guide for the International Space Station (ISS) Payload Data Library (PDL) documents the information necessary for approved users to utilize the PDL application. It provides an overview of the PDL architecture as well as system requirements for the different platforms supported. In addition, instructions are included for navigation through the system, entering data, and generating output reports.

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SECTION 1, INTRODUCTION

1.1 SYSTEM OVERVIEW

The Payload Data Library (PDL) is an electronic database system developed to support the Engineering and Operations Integration (E&OI) personnel in collecting and managing payload data. The primary function of PDL is to provide a convenient method for collection, processing, managing, and distribution of payload information necessary for payload complement integration and for preparation of integration requirements reports. PDL is configured as a Web Enabled system utilizing Oracle software and is accessible to the user via the Internet. The user may obtain a user account and password, by accessing the PDL Home Page on the World Wide Web (WWW) at <http://pdl.hosc.msfc.nasa.gov>.

Interfacing between PDL and other ISS databases is accomplished by using data file transfers over various data networks as defined in the applicable Interface Control Document.

1.2 SYSTEM REQUIREMENTS

The PDL web client software is compatible with Internet Explorer 5, Netscape 4, Windows '95, Windows NT, and Mac workstations the level of a PowerPC and higher. See the sub-sections below for specific platform system requirements.

1.2.1 IBM-PC

A minimum system configuration to run this web client software on an IBM-PC compatible computer is Windows 95, or Windows NT with an 80486 processor (266 MHz), 64 MB RAM, an 800 x 600 resolution color monitor with 16 colors, 10 MB of available disk space, Internet Explorer 5 (strongly recommend), Netscape 4, and a 56 K modem (recommend DSL or Cable Modem or Ethernet connection). The PDL software operation cannot be guaranteed if your system does not meet these minimum requirements.

1.2.2 Macintosh-PowerPC

A minimum system configuration to run this web client software on a Macintosh is a PowerPC processor using Mac OS System 8.X, 64 MB RAM, an 800 x 600 resolution color monitor, 10 MB of available disk space, Internet Explorer 5, and a 56 K modem (recommend DSL or Cable Modem or Ethernet connection). *NOTE: Netscape can't be used on the Mac because of problems with setting up the Java plug-in.* The PDL software operation cannot be guaranteed if your system does not meet these minimum requirements.

1.2.3 Plug-Ins

The following plug-ins are required to run the web-client software:

- a. J-Initiator – Internet Java applets for PC Users
- b. MacOS Runtime for Java (MRJ)– Internet Java applets for Mac Users
- c. Adobe Acrobat Reader – For displaying documents in PDF format
- d. Decompression Software (i.e., STUFF-IT EXPANDER) - For decompressing files in G-ZIP format

1.3 WEB ENABLED TECHNOLOGY USED IN PDL

The PDL database uses Web Enabled technology to implement a user-friendly, quick-response data collection and management system. Figure 1-1 depicts the PDL Web Enabled configuration.

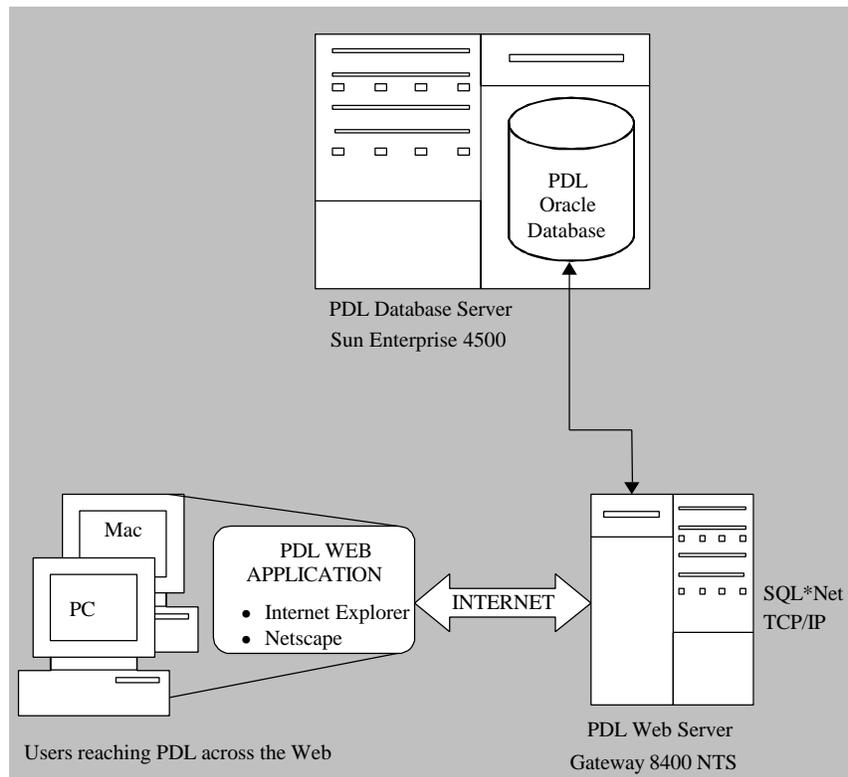


FIGURE 1-1 WEB ENABLED TECHNOLOGY IN THE PDL

Although a detailed understanding of this technology is not necessary to use the PDL, you may find the following information useful.

The web server for the PDL system is a Gateway 8400 NTS and the database server portion of the PDL system is a Sun Enterprise 4500. Both machines are located at the Marshall Space Flight Center (MSFC) in Huntsville, Alabama. The Oracle Relational Database Management System (RDBMS) runs on this server and will be kept up to date with the latest version of the database. The data that you enter into the PDL will be stored, managed, distributed, and archived on this server. Daily-automated backups ensure that your data is not lost as the result of any anomaly in server operations.

The PDL web client system is an application that is launched from the PDL Home Page on the web. After entering your user ID and password, your computer is then connected to the PDL server. The web client application will allow you to retrieve and update data stored on the server. To ensure that the latest data is available to all users, no data is stored on your local computer.

1.4 USER REQUIREMENTS

The PDL web client application utilizes a Graphical User Interface (GUI) to provide an easy and consistent means of manipulating data; however, an understanding of the following functions associated with a GUI is required:

- A. Using system browsers for navigation
- B. Using a mouse and a pull-down menu.
- C. Using a Navigation Tree.

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SECTION 2, GUIDELINES

2.1 PAYLOAD BREAKDOWN COMPONENTS

All data collected within the PDL is divided into data sets for easy navigation. These data sets are currently defined as Integration Agreement, ICD/PVP, CDH, Configuration, EVA, EVR, Grnd Data Srvc, KSC Support, KSC Technical, Operations, and Training. Figure 2-1 depicts an example of the payload data set breakdown components.

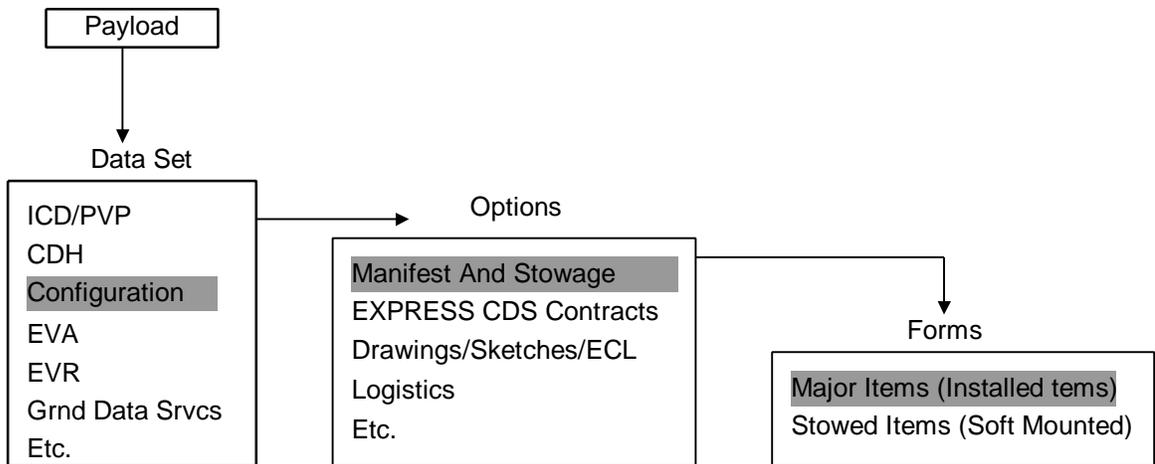


FIGURE 2-1 PAYLOAD BREAKDOWN COMPONENTS

2.2 PAYLOAD IDS

The PDL uses the parameter format specified by the User Mission Database (UMDB) for payload identification number definition. The UMDB parameter format is:

AAAnnn.mmB

AA- This is the two letter code that represents the payload owner. The first digit specifically represents the partner (N = NASA, J = NASDA, E = ESA, C = CSA), and the second digit specifically represents the organization (C = Commercial, for example). So ESA, Commercial organization, would be EC for the first two digits.

nnn- This is a three digit number, generated automatically by the UMDB, which represents the 'nth' payload of this type. So the first payload of type EC would be EC001; the second would be EC002, etc.

mm- This is a two digit number, generated automatically by the UMDB, which represents a subpayload. The first time a payload record is created, this number is 00. If another subpayload is created in the UMDB, then a new payload record is created with the same payload ID, but this number is incremented by one to 01. The next subpayload created in the UMDB will be 02.

B- This one digit character can be one of the following: "A" for attached payloads or "P" for pressurized payloads. This character is automatically assigned when the payload is created as an attached or pressurized payload.

2.3 DATA DISTRIBUTION

There are several end users that utilize payload information collected in the PDL. These end users will receive information via database exports or File Transfer Protocols (FTP). An Interface Control Document (ICD) between PDL and the end users will specify the format of the data to be transferred and the method of transfer. The following documents define the planned interfaces with the PDL:

- A. SSP 50189A - Interface with the JSC User Mission Database and the JSC Tactical Planning System.
- B. D683-21415-1 - Interface with the MSFC Payload Software Integration and Verification Database.
- C. ICD-3-60056B - Interface with the MSFC Huntsville Operations Support Center (HOSC) Command/Telemetry Database.
- D. SSP 50298 - Interface with the JSC Vehicle Master Database.
- E. Interface with the KSC Operations and Maintenance Requirements and Specifications (Document number not currently assigned).
- F. Interface with the ESA Columbus Payload Database (Interface not currently defined).
- G. Interface with the National Space Development Agency of Japan (Interface not currently defined).
- H. Interface with the Russian Space Agency Database (Interface not currently defined).

SECTION 3, USING THE PAYLOAD DATA LIBRARY

All figures included in this section are from the web client application using the PC and Internet Explorer 5. Not every screen is documented in this section, only screens that provides the overall functionality of PDL.

3.1 STARTING THE WEB CLIENT APPLICATION

Users who already possess a PDL account can run the web-based version of the PDL client. The PDL website can be accessed through the Internet at the address: <http://pdl.hosc.msfc.nasa.gov>. The web page is displayed as shown in Figure 3-1. The left side of the PDL web page contains a menu tree, which is always displayed when the PDL web site is up. Some menu items can be expanded to show additional choices. Additional uses of the PDL website are addressed in Section 4 of this document.

Once expanded the *Web Client* menu item displays the *Getting Started*, *Run PC Web App* and *Run Mac Web App* options. To launch the web client you must first download Oracle's J-Initiator or Mac OS Runtime for Java (MRJ) plug-ins. These Java plug-ins can be found under the *Software* menu item on the menu tree. The J-Initiator is a plug-in for either Internet Explorer or Netscape Navigator for the PC, and MRJ is the plug-in for the Mac. Once you have the plug-in, you can click on the *Run PC Web App* or *Run Mac Web App* option to launch the web application depending on the platform you are on.

The plug-ins and the web client are discussed in more details in Sections 4.1.1 and 4.2.1, respectively.

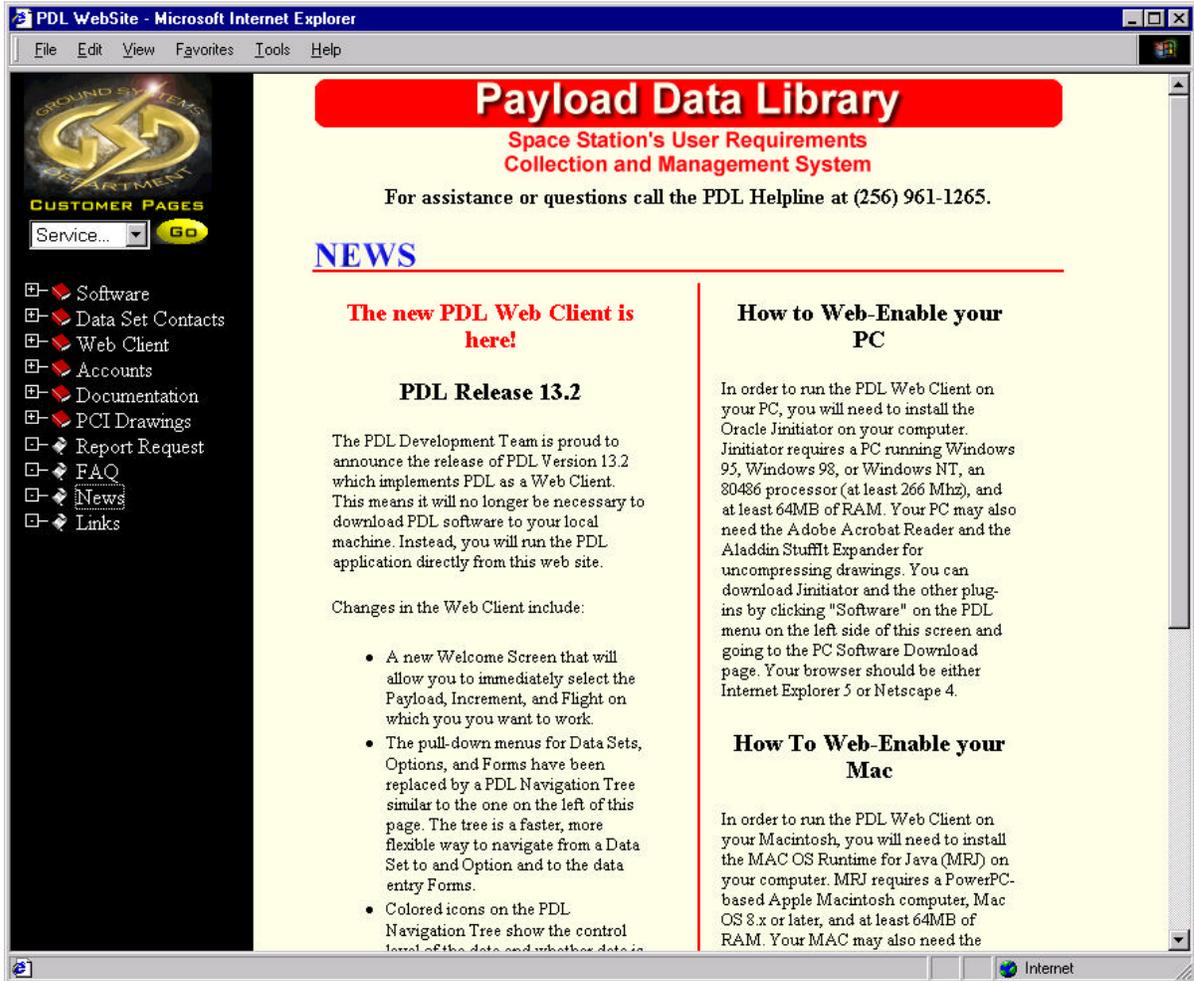


FIGURE 3-1 PDL WEB PAGE

3.2 LOGGING ON

After successfully launching the appropriate web client, the first screen asks you to log on to the PDL server. This screen, shown in Figure 3-2, consists of two fields (*Username* and *Password*) and three buttons (*Exit*, *Change Password*, and *Logon*). Clicking the *Exit* button exits the PDL web application, while the *Logon* button attempts to log onto the PDL Server using the *Username* and *Password* entered. You will also find the PDL Help Line telephone number on this screen.

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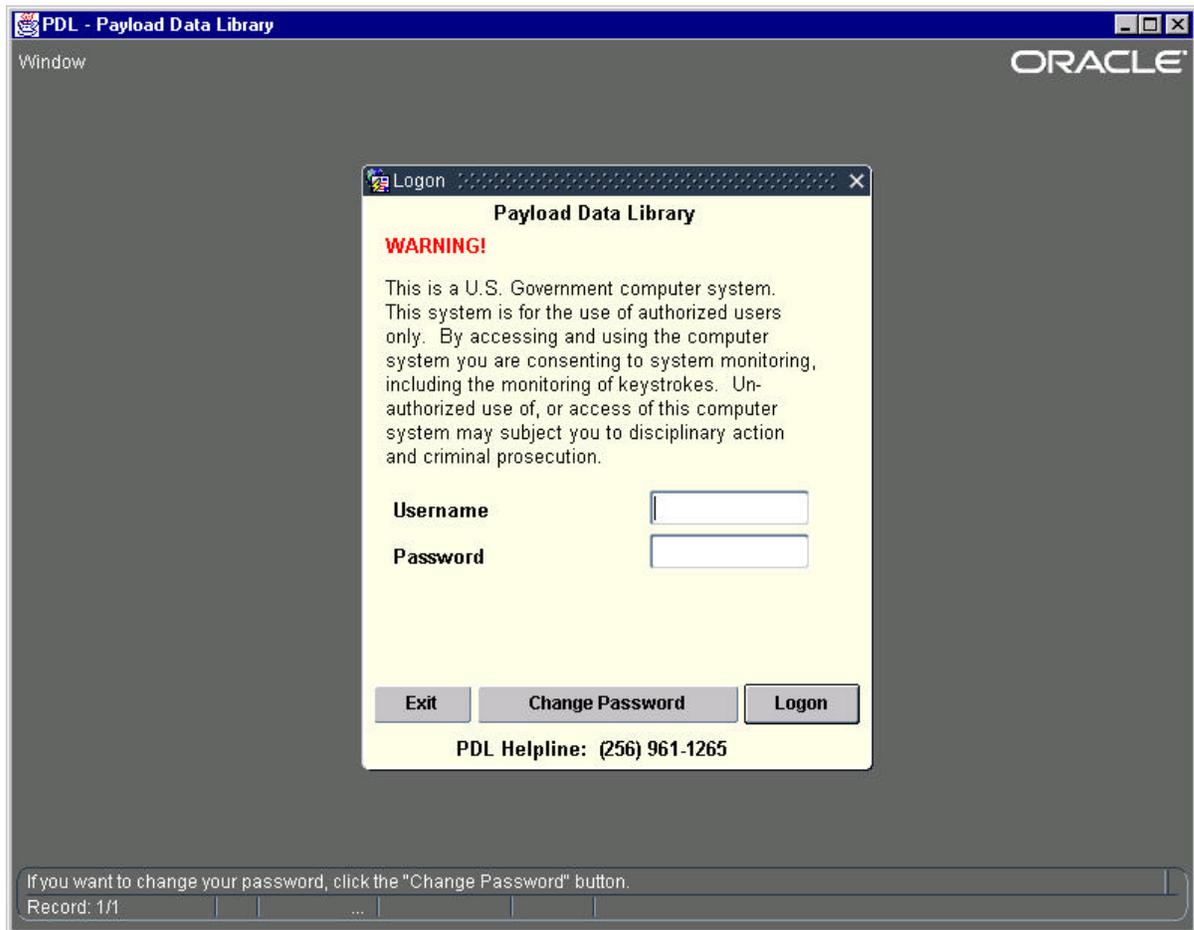


FIGURE 3-2 LOGGING ON

The first time you access PDL, use the temporary password assigned upon account approval. You must enter a new password within three logons. Your new password must not begin with a number and should be alphanumeric not exceeding 30 characters. You are required to change your password every 60 days. The system will display a reminder message 14 days prior to your current password expiration. To change or enter a new password, click the *Change Password* button. Figure 3-3 shows the logon screen in the change-password mode. Two new fields (*New Password* and *Verify New Password*) and a new button (*No Change*) appears. If you decide not to change your password, click the *No Change* button to return to the first Logon Screen. Otherwise, enter your new password in both of these fields and click the *Logon* button to change the password and connect to the PDL server. Use the tab key or the mouse to move the cursor from field to field on the screen.

Each user is given access privileges to certain areas of PDL based upon their account profile. There are three different levels at which an account may be established. They are Private, Integrated, and Controlled. The Private level is used by the Payload Developers to initially enter data describing a payload. For accounts at this level, all data sets, options, and forms are enabled; however, a user is only granted write privileges for the disciplines indicated in the user's account profile. At the Integrated level, only options that have been promoted from the Private level will be enabled. A user is only allowed to change, promote, and/or demote discipline data as determined by the user's account profile. The controlled level is used by Configuration Management personnel. At this level, data can only be changed via a directive approved by a data set controlling authority such as a Control Board or Panel.

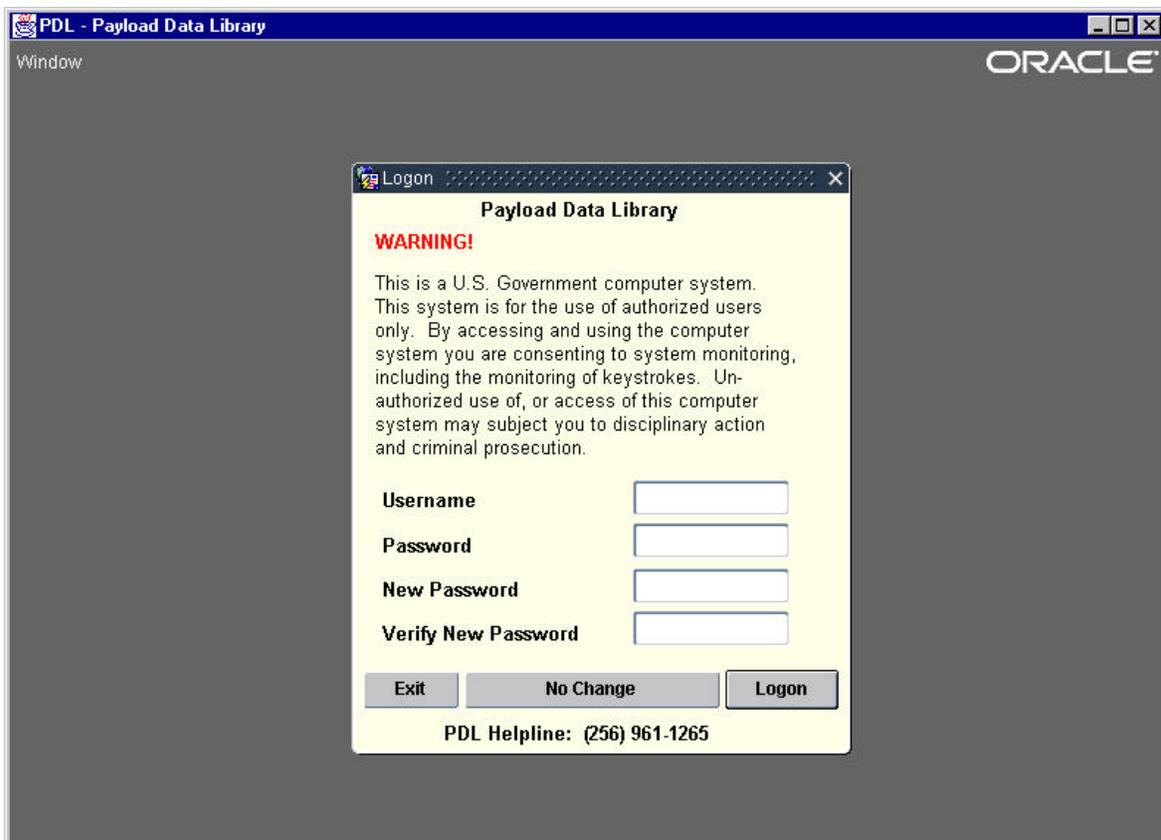


FIGURE 3-3 CHANGING A PASSWORD

3.3 SELECTING A PAYLOAD, FLIGHT, AND INCREMENT

Once you have successfully logged on to the PDL Server the PDL Payload Selection Screen, shown in Figure 3-4 appears and is easily recognized by the Payload Types (*ALL*, *EXPRESS*, *PRESSURIZED*, *WORF*) radio button selections, the *Payload*, *Increment*, *Flight*, and *KSC Processing Type* pop-list selections. The *KSC Processing Type* is for KSC Support Only. The *Launch Date* and *Launch Minus From Today* fields are automatically populated based on the previous selection of the payload, increment, and/or flight.

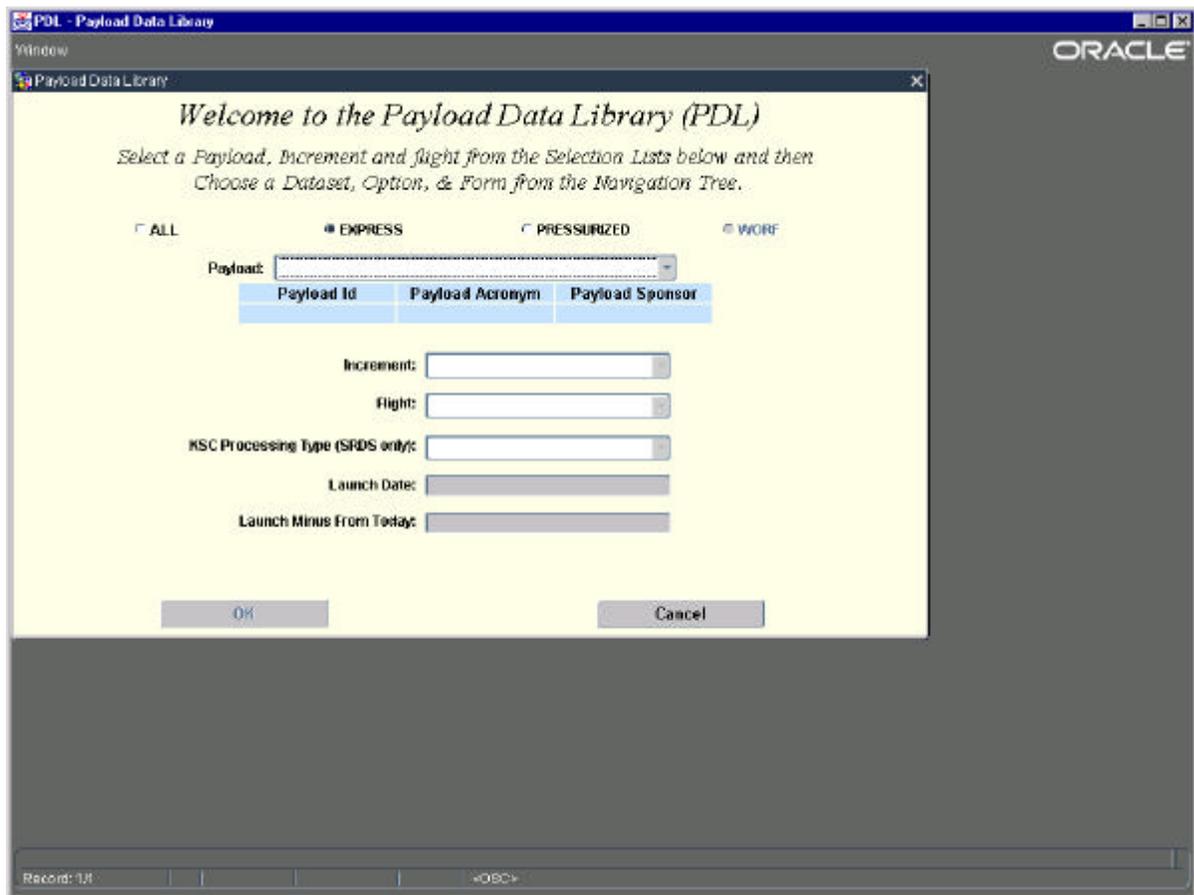


FIGURE 3-4 PDL PAYLOAD SELECTION SCREEN

To select a payload, select the payload type (*EXPRESS*, *PRESSURIZED*, *WORF*) then move the cursor to the *Payload* selection pop-list box. Click and hold to expand the list. When the *ALL* is selected, the *Payload* selection pop-list will display all of the available

payloads. Move the cursor to the desired payload and release. When the new payload is selected, the *Payload ID*, *Payload Acronym*, and *Payload Sponsor* fields are automatically displayed below the *Payload* selection pop-list. The *Increment*, *Flight*, and *KSC Processing Type* can be selected in the same manner as described. Once a payload and all other applicable information (i.e., increment and flight) have been selected as shown in Figure 3-5, click the *OK* button and you are ready to begin your selection of the Dataset, Option and Form from the Navigation Tree.

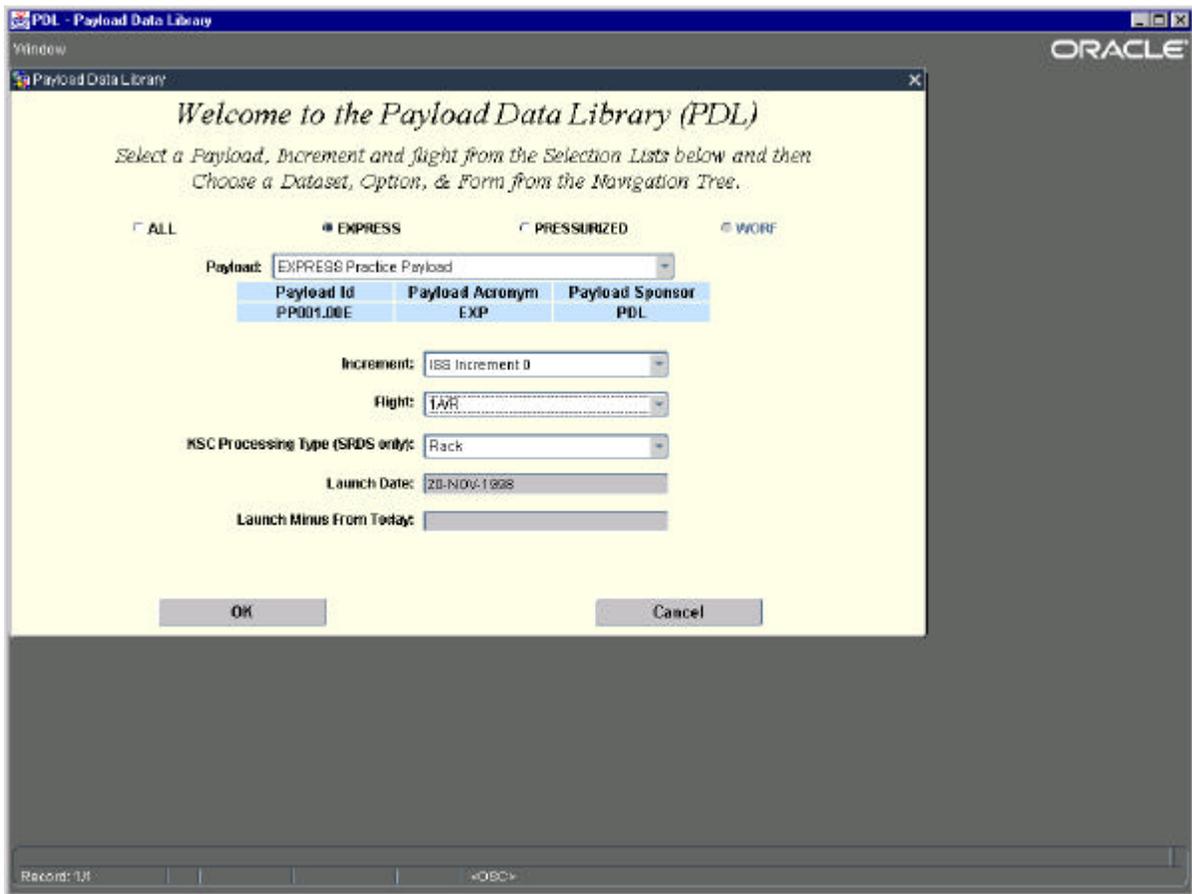


FIGURE 3-5 PAYLOAD, INCREMENT, AND FLIGHT SELECTION

3.4 UNDERSTANDING THE MAIN MENU SYSTEM

After successfully selecting a payload, flight and/or increment, the PDL web application main menu bar is displayed at the top of the screen as in Figure 3-6. The PDL web application main menu bar consists of *File*, *Edit*, *Help*, and *Window* menus. These menus are discussed in the following subsections in greater detail.

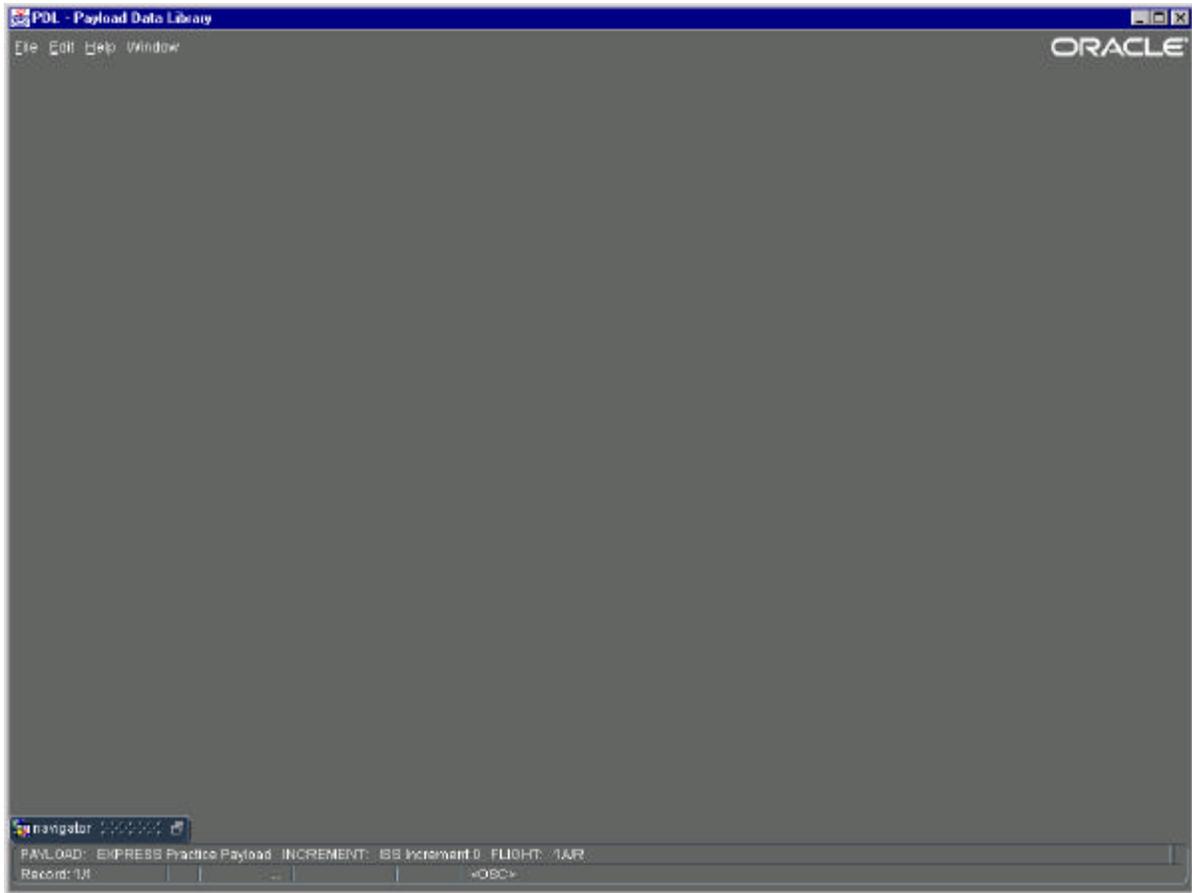


FIGURE 3-6 PDL MAIN MENU SYSTEM

3.4.1 File Menu Selections

The pull-down items under the *File* menu include *Payload Criteria*, *User Profile*, *Reports*, *My RTF Reports*, *My ASCII Reports*, *Address Book*, *Promote/Demote*, and *Quit* as shown in Figure 3-7A. If a form is active and displayed then the File menu will display *User Profile*, *Rebuild Tree*, *Address Book*, *Print*, and *Quit* as shown in Figure 3-7B. These menu selections are discussed in more detail in the following subsections.

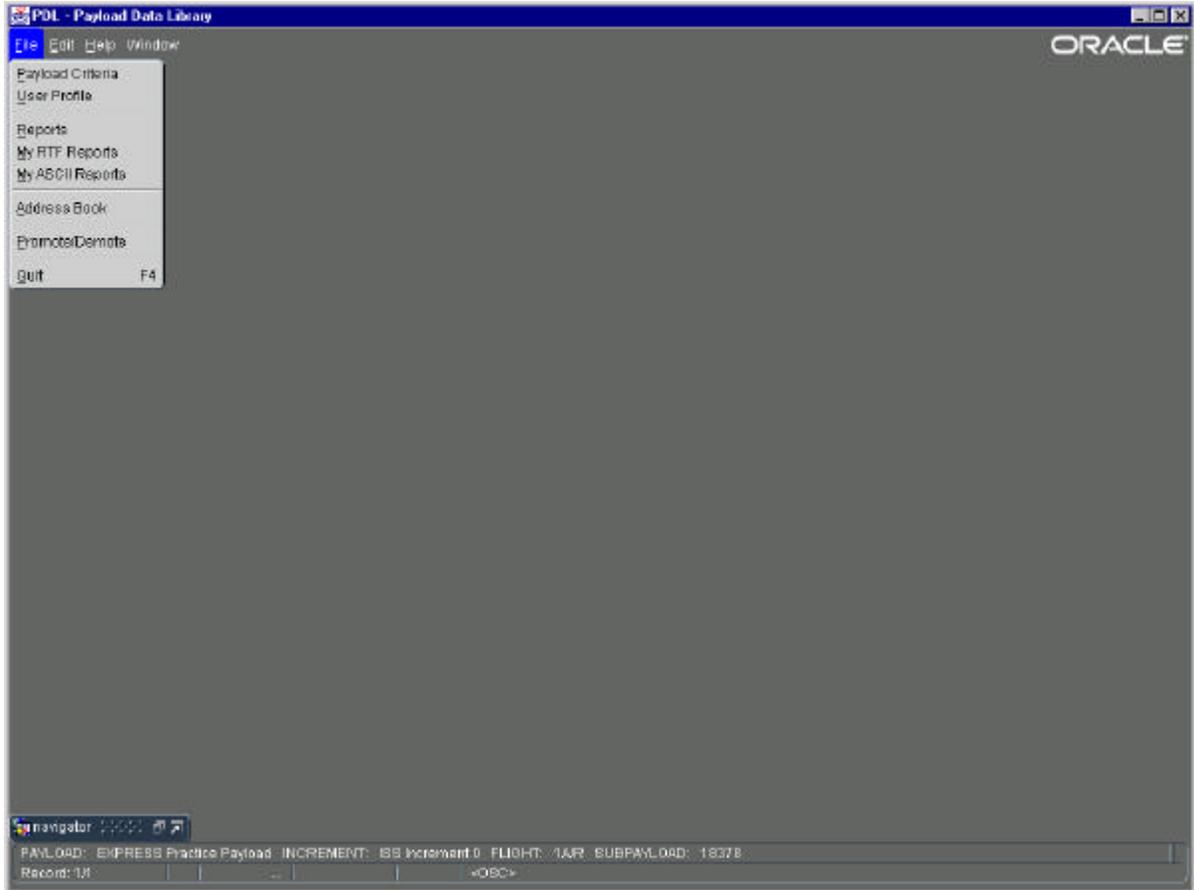


FIGURE 3-7A FILE MENU SELECTIONS

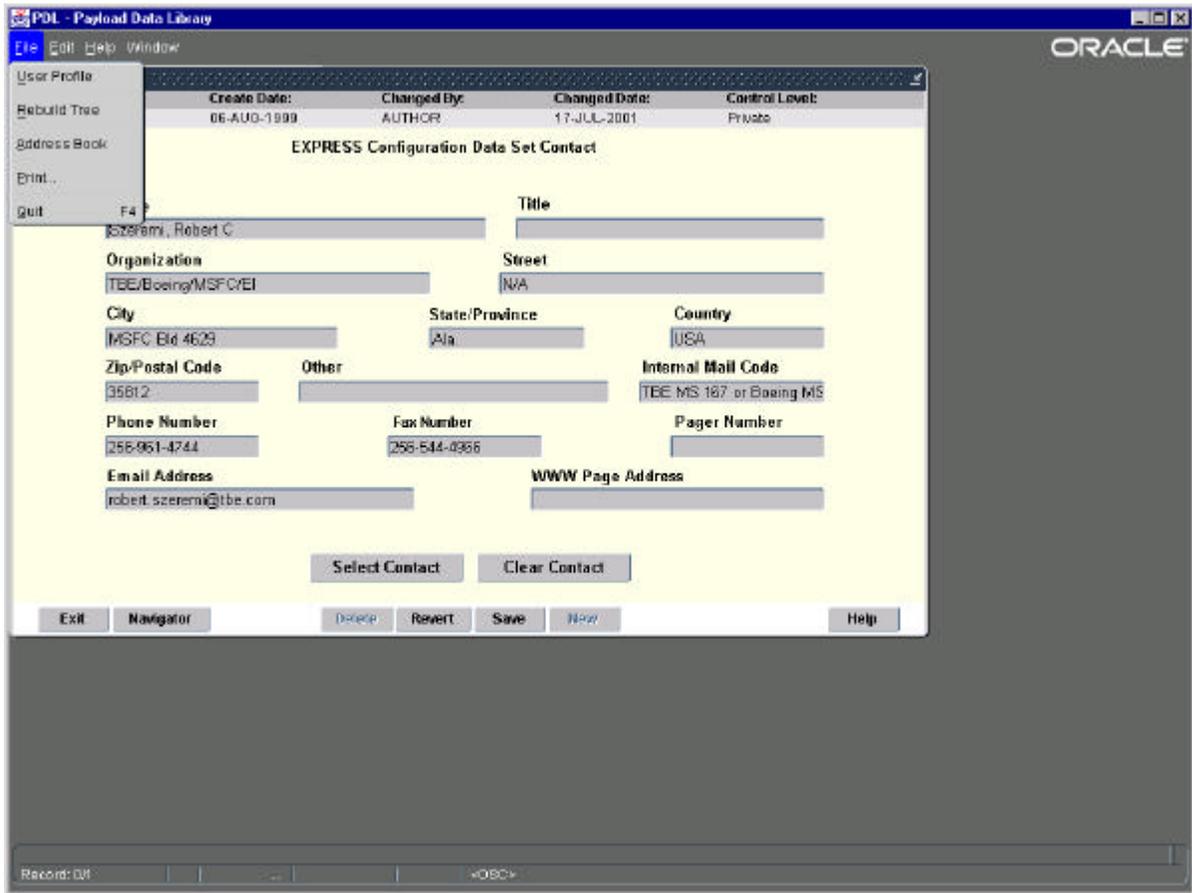


FIGURE 3-7B FILE MENU SELECTIONS WITH AN ACTIVE FORM

3.4.1.1 Payload Criteria

The *Payload Criteria* menu selection item will redisplay the Payload Selection Screen as shown in Figure 3-4.

3.4.1.2 User Profile

The *User Profile* menu selection item allows the User the ability to change their profile. The User's Profile Screen as shown in Figure 3-8 will appear. The screen displays your access to payload and data set information. This access is determined by the data you provided in the account request form. There are three sections on this screen. The *User Profile* section displays your access to payload and data set information. This access is

determined by the data you provided in the account request form. The *PDL System Messages* section is used to send individualized messages to you from the PDL DBA. The *What's New* section displays information messages of general interest such as payloads and flights that have been added to the PDL database. At the bottom of the screen are two buttons, the *Edit Address Info* button and the *Continue* button. The *Continue* button will return to the previous screen.

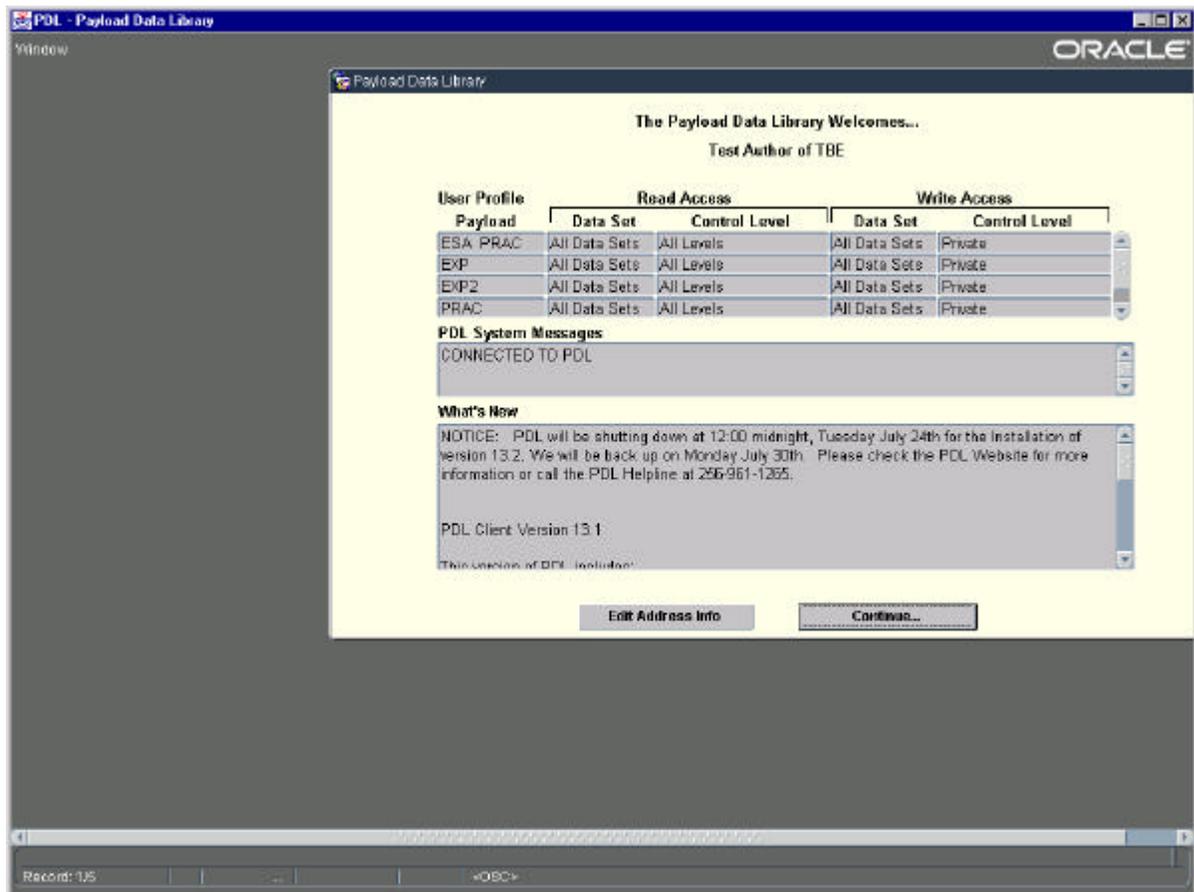


FIGURE 3-8 USER PROFILE SCREEN

When you click the *Edit Address Info* button, the *Contacts Information Screen* appears with your current account information as shown in Figure 3-9. If the data for your account has changed, correct it and click the *Save* button. To add a new contact, click the *New* button and enter the new information. After you are finished, click the *Save* button. The

information is stored for later reference. You may use the *Find* button to locate another contact. When you click this button, the Address Book pop-up as shown in Figure 3-10 allows you to either select a contact from a list or enter a name in the *Find* box. Use the “%” symbol as a wildcard character. Click the *Find* button to begin the search. Click *OK* when finished. The contact information for the name selected is displayed. After saving all changes, click the *Exit* button to return to the previous screen. To delete a record of information from the Contacts Information click on the *Delete* button. A message will be displayed to confirm deletion. The *Clear* button will remove all information within each field on the form.

The screenshot shows a window titled "PDL - Payload Data Library" with a menu bar (File, Edit, Help, Window) and the Oracle logo in the top right. The main window is titled "CONTACTS" and contains a form titled "CONTACTS INFORMATION". The form has the following fields:

- First Name, MI, Last Name, Title
- Organization, Street
- City, State/Province, Country
- Zip/Postal Code, Other, Internal Mail Code
- Phone Number, Fax Number, Pager Number
- Email Address, WWW/Page Address

At the bottom of the form are buttons for Find, New, Delete, Clear, Save, and Exit. The status bar at the bottom of the window displays the message "FRM-40350: Query caused no records to be retrieved." and "Record: 1/1".

FIGURE 3-9 CONTACTS INFORMATION SCREEN

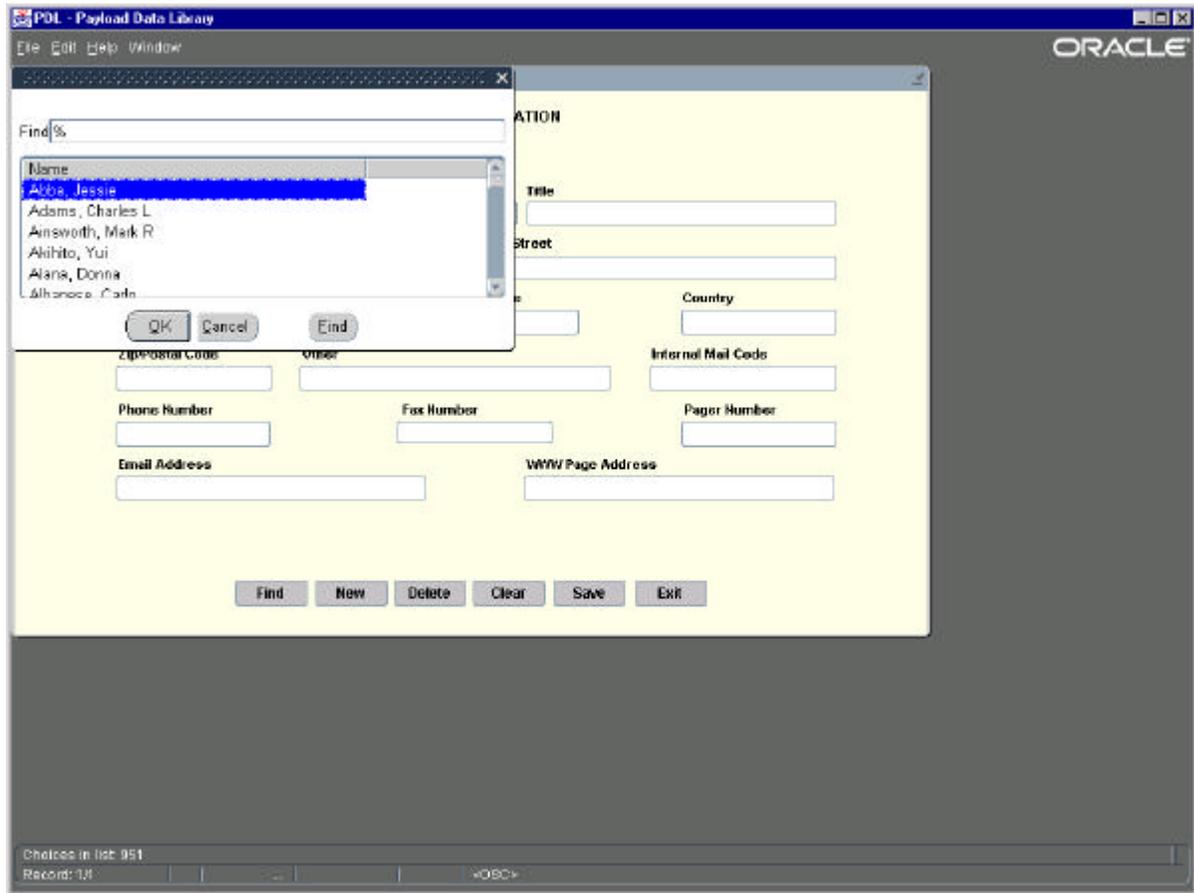


FIGURE 3-10 ADDRESS BOOK POP-UP

3.4.1.3 *Rebuild Tree*

The *Rebuild Tree* menu selection item will rebuild the Navigation Tree and update any information pertaining to the dataset(s). Refer to Section 3.5 below for discussions on the Navigation Tree.

3.4.1.4 *Reports*

Reports may be generated in two ways within the PDL. First, the user may select *Reports* from the *File* menu (*Note: If a Form is active, dismiss the Form in order to see the Reports menu selection item*). The Report Selection screen will appear as shown in Figure 3-11. This method is generally used for generation of summarized reports. Select the

Payload, *Dataset*, and the specific *Report* to be generated. Select the appropriate *Increment*, *Payload Operation Performance (POP)*, *Flight*, *Sub-element*, *Sort (1st, 2nd, 3rd)*, *Course*, *Timeframe*, and *Location*, if applicable. The final selection is the *Destination* of the report. The user may select one of the following: *Previewer*, *ASCII Text (.txt)*, or *MS WORD (.rtf)*. The *Previewer* destination will immediately open the *Adobe Acrobat Reader* application and display the report. The user may print or save the report to their local machine. The *ASCII Text* destination will save the report in *ASCII* format and store the report in *My ASCII Report* accessible under the *File Menu* (See Section 3.4.1.6 for more details). Finally, the *MS WORD* destination will save the report in *RTF* format and store the report in *My RTF Report* accessible via the *File Menu* (See Section 3.4.1.5 for more details). Both the *ASCII* and *RTF* destinations will display a dialog box as shown in Figure 3-12 indicating the name of the report and the hyperlink where it can be found. After the selections are complete, click the *Run Report* button to generate the report. Use the *Exit* button to return to the previous screen.

The second report generation method is detailed in Section 3.4.1.9.

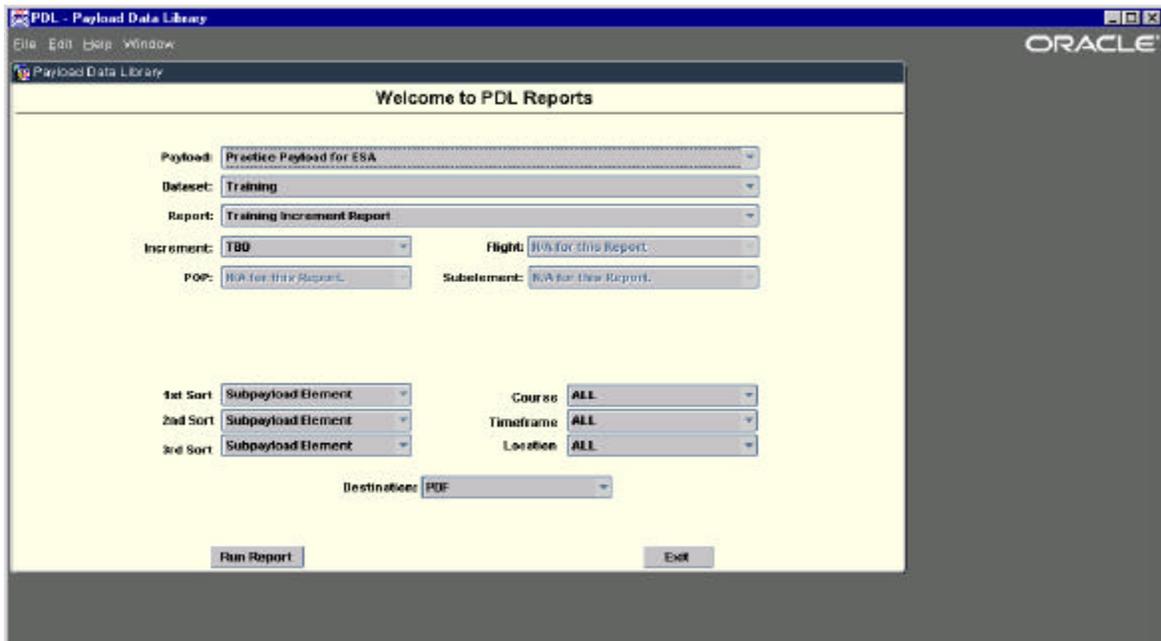


FIGURE 3-11 REPORT SELECTION SCREEN

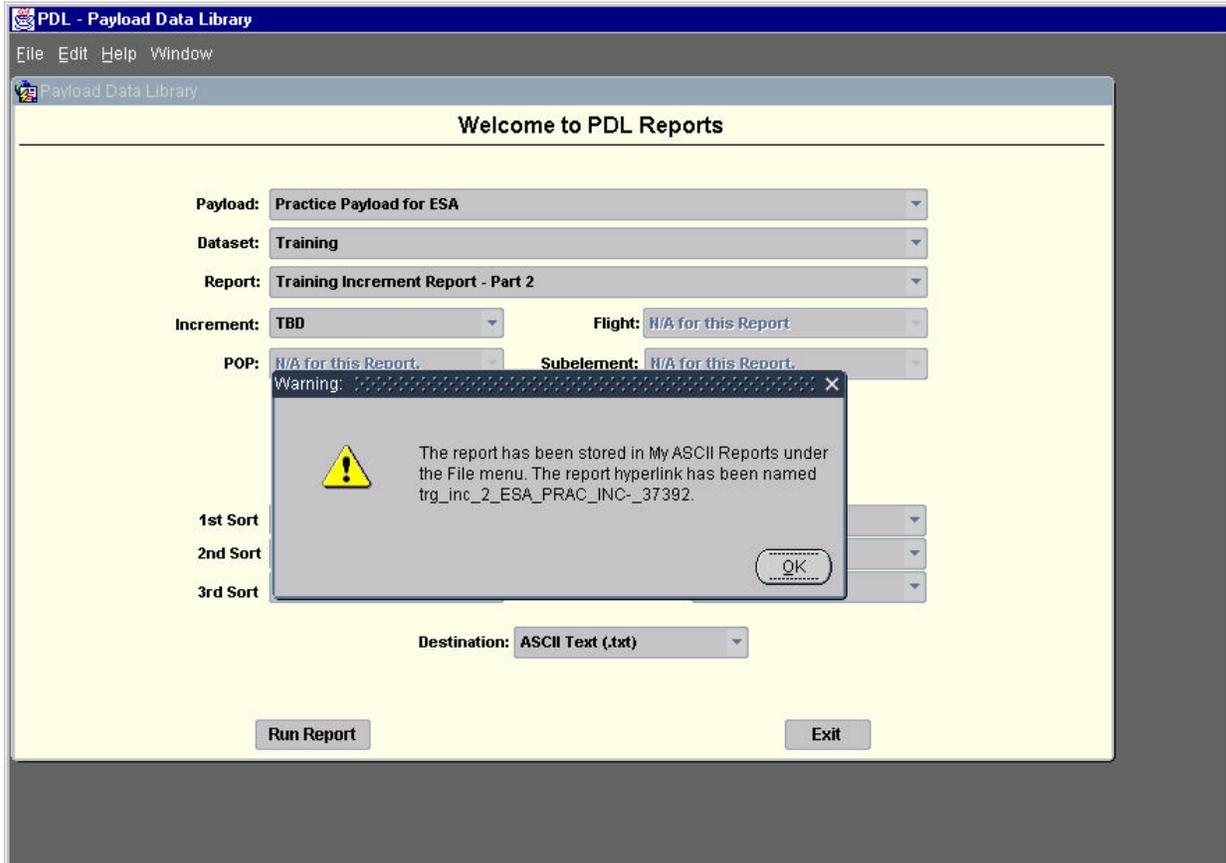


FIGURE 3-12 REPORT DIALOG BOX

3.4.1.5 My RTF Reports

The *My RTF Reports* menu item allows the User to access their RTF formatted reports generated through the *Reports* option described in Section 3.4.1.4 above. These reports can be downloaded from the web server to the User's computer for easy access by clicking on the appropriate file name as shown in Figure 3-13.

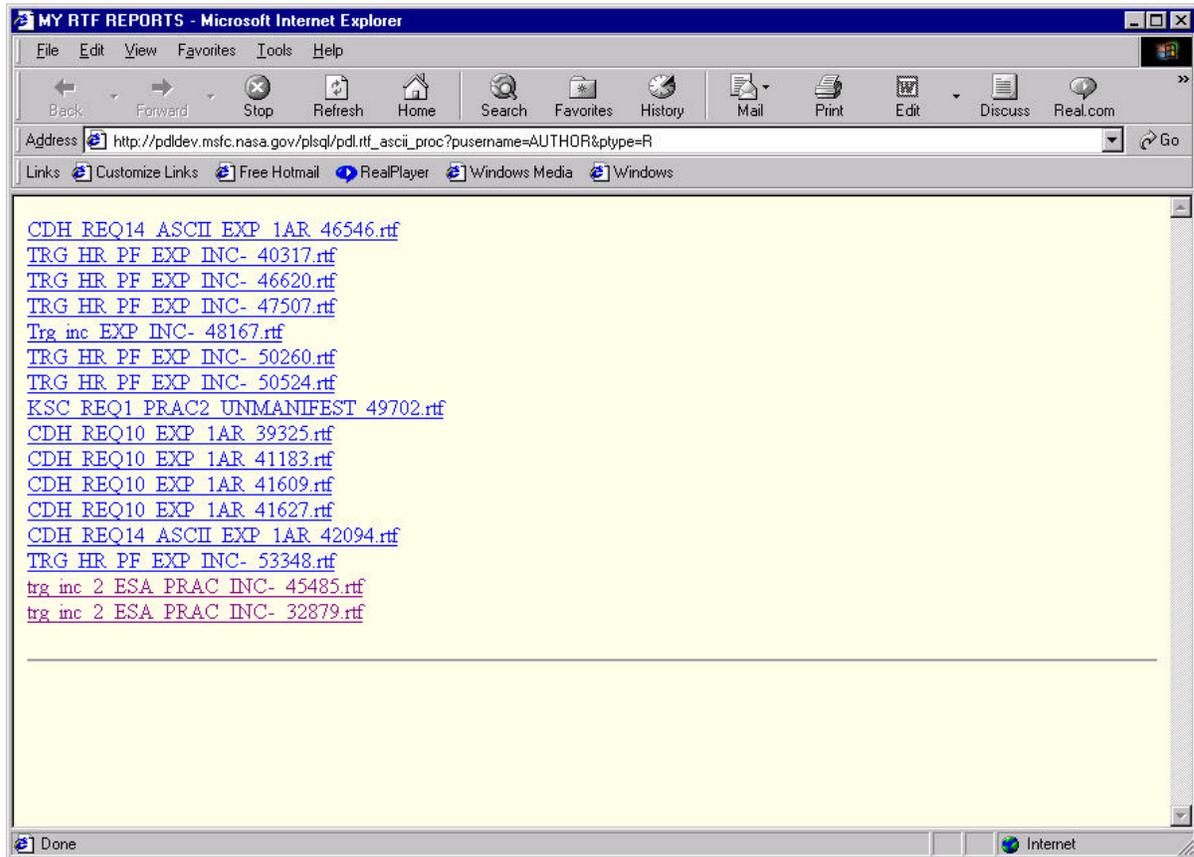


FIGURE 3-13 REPORT FILES

3.4.1.6 *My ASCII Reports*

The *My ASCII Reports* menu item allows the User to access their ASCII formatted reports generated via the *Reports* option described in Section 3.4.1.4 above. These reports can be downloaded from the web server to the User's computer for easy access by clicking on the appropriate file name similar to the format shown in Figure 3-13 but with a .txt extension

3.4.1.7 *Address Book*

The Address Book is discussed in Section 3.4.1.2 above and is displayed in Figure 3-10.

3.4.1.8 *Promote/Demote*

The *Promote/Demote* menu item is a critical component in the PDL process. It is used to electronically exchange payload and integration data between the Payload Developers, integrators, data set, and configuration management teams, therefore prior to promoting or demoting, verify that all forms have been filled in and the data in all forms is accurate.

There are three major data control levels in this process: Private, Integrated, and Baselined. Within the integrated level, there are four sub-levels. These sub-levels are submitted, preliminary, final, and draft. These levels are used by the integration engineers and data set managers during the review process to document the maturity of the data.

The Payload Developer can promote private data to the integrated-submitted level. Once this activity has taken place, the PD can only review it but will not be able to change it. Authorized personnel at the integration level have the ability to both promote and demote data to all sub-levels of the integrated level and demote back to the private level. The configuration manager can promote integrated-draft data to the baseline level. Once the data has been baselined, it can no longer be promoted or demoted.

To access the Promote/Demote screen shown in Figure 3-14, select the *Promote/Demote* from the *File* menu of the PDL Main Menu.

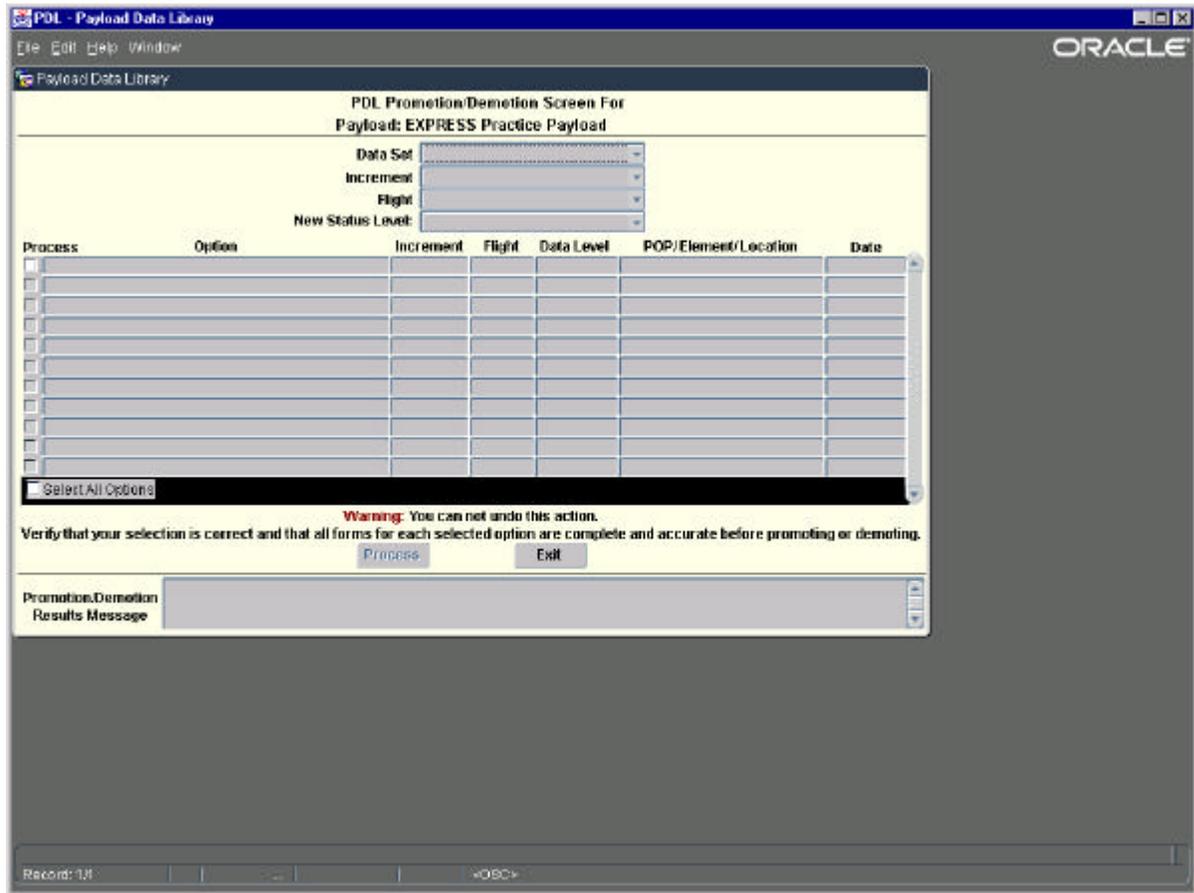


FIGURE 3-14 PROMOTE/DEMOTED SCREEN

The top of the screen displays the name of the specific payload whose data is being promoted/demoted. To change the payload, use the *Exit* button to return to the PDL Main Menu screen. Select *File* then the *Payload Criteria* menu item and the Payload Selection Screen as shown in Figure 3-4 will appear. You then can select another payload from the payload selection pop-list and re-select *Promote/Demote* from the *File* menu. Once the correct payload has been chosen, select a specific *Dataset*, *Increment*, and *Flight* from the appropriate pop-lists on the Promote/Demote Screen. Note: If the option being promoted/demoted is not increment or flight-specific these selections do not have to be made. As a result of the selections, option titles are displayed. Click in the *Process* check box to the left of the option title(s) to select the options to be promoted/demoted. Select the *New Status Level* and click the *Process* button. This process may take a few minutes. When the process

is finished, the data resides at the selected level and a list of the options that were processed is displayed in the message box.

3.4.1.9 *Print*

From any form within the PDL the User may select *Print* under the *File* menu to generate a report for that particular form if one exists or default to a screen capture/print of the form and populated data.

3.4.1.10 *Quit*

The *Quit* menu selection item exits the PDL web application.

3.4.2 *Edit Menu Selections*

The *Edit* menu selections allow the user to perform functions such as *Cut*, *Copy*, *Paste* and *Edit* as shown in Figure 3-15 when manipulating the fields on the form.

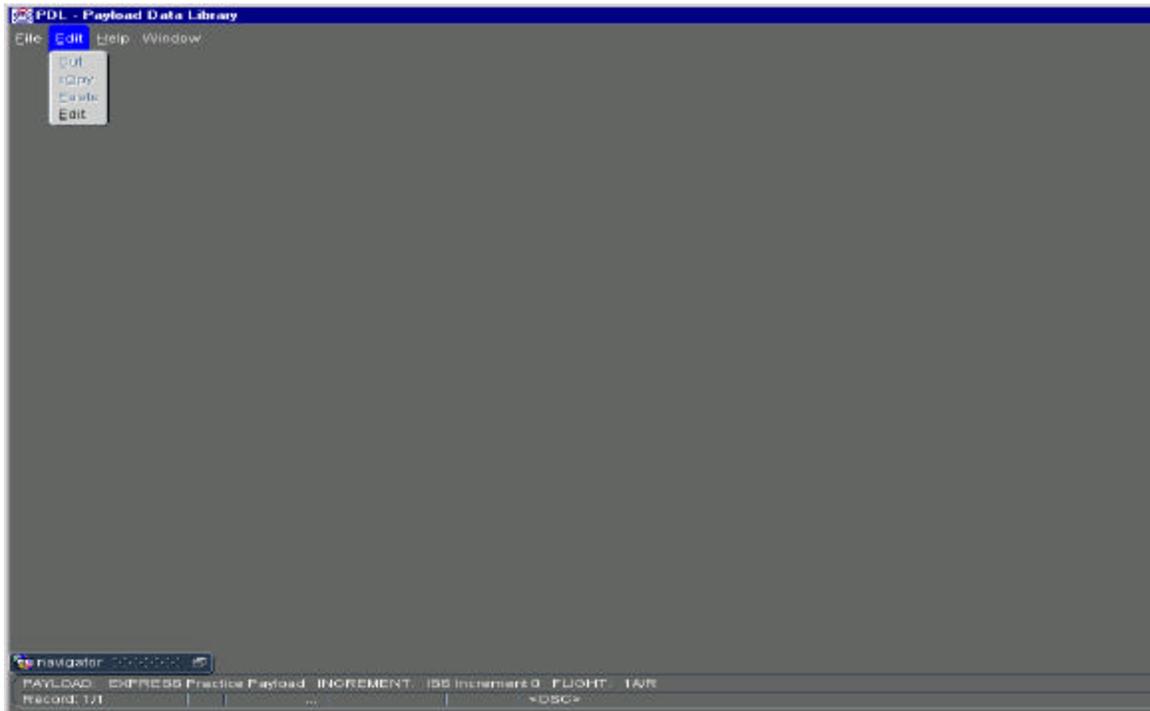


FIGURE 3-15 EDIT MENU SELECTIONS

3.4.2.1 *Cut*

The *Cut* menu selection item removes selected information (selected by highlighting with the left mouse button) and places it into memory (Clipboard) for future use.

3.4.2.2 *Copy*

The *Copy* menu selection item copies (but does not remove) selected information and places it into memory (Clipboard).

3.4.2.3 *Paste*

The *Paste* menu selection item inserts the Clipboard contents at the cursor position.

3.4.2.4 *Edit*

Selecting the *Edit* menu selection item while in a text enterable field will activate a text editor as shown in Figure 3-16 that will allow the user to insert into and/or modify the text field.

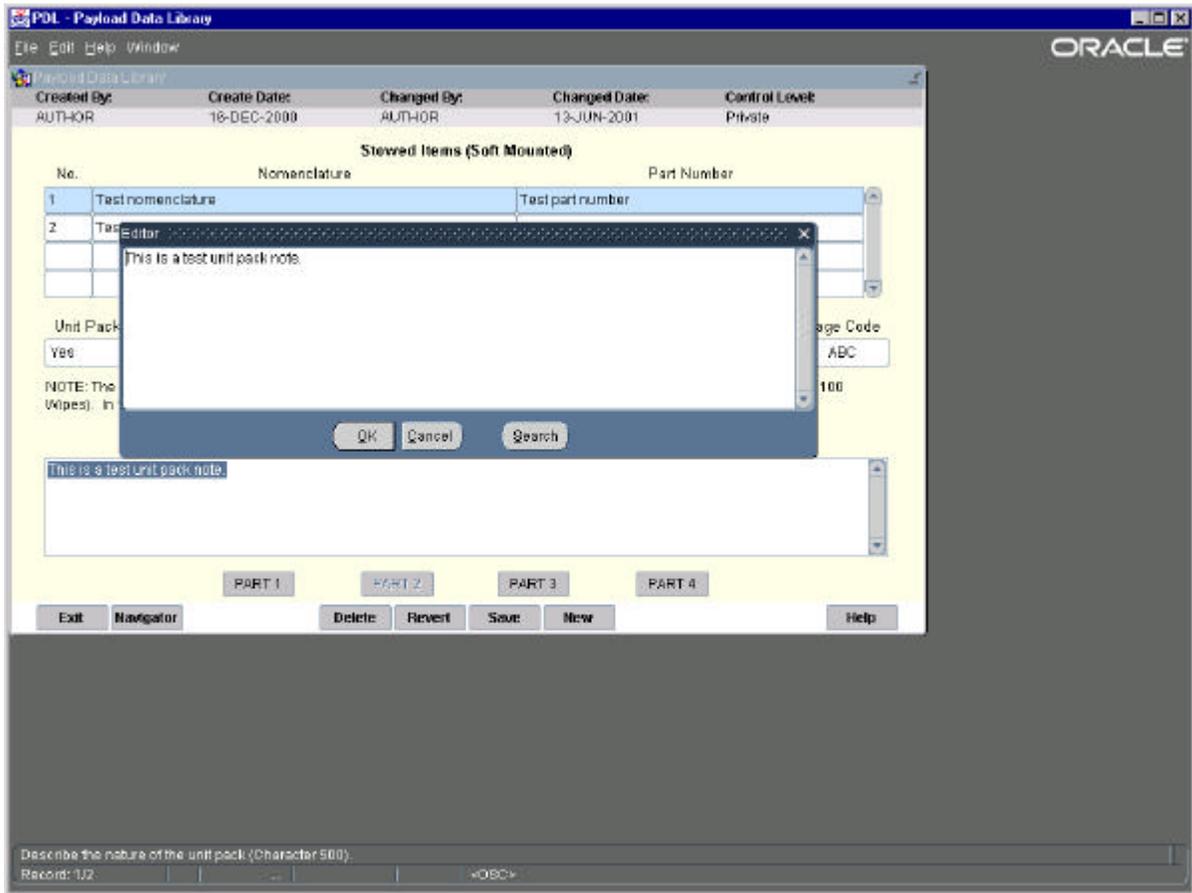


FIGURE 3-16 TEXT EDITOR

3.4.3 Help Menu Selections

In addition to the Help button on the lower right corner of a form screen as you will see discussed later in this document, the *Help* menu allows you to access help information, as shown in Figure 3-17. The selectable items under the *Help* menu include *General*, *On Forms*, *News*, *Problem Reports*, and *Blank Book*. These are discussed in more detail in the following sub-sections.

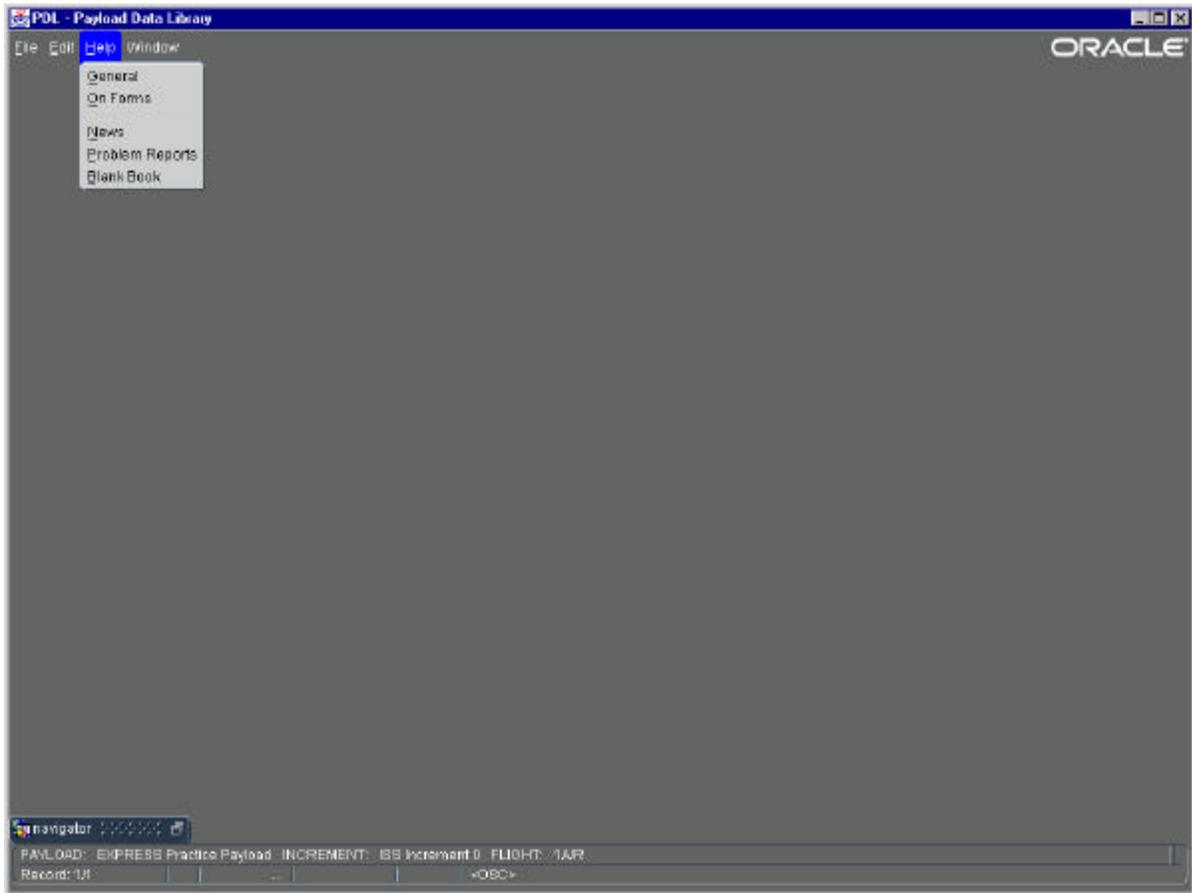


FIGURE 3-17 HELP MENU SELECTIONS

3.4.3.1 *General*

To access general help, select *General* from the *Help* menu. Enter a keyword in the text box and click the *Find* button. A list of matching items displays in the first scroll box. Items in the list contain the keyword in the title or in the help text. Select an item from this box and the associated option title, form title, field title, and help text will be displayed (See Figure 3-18). Click *Exit* when finished.

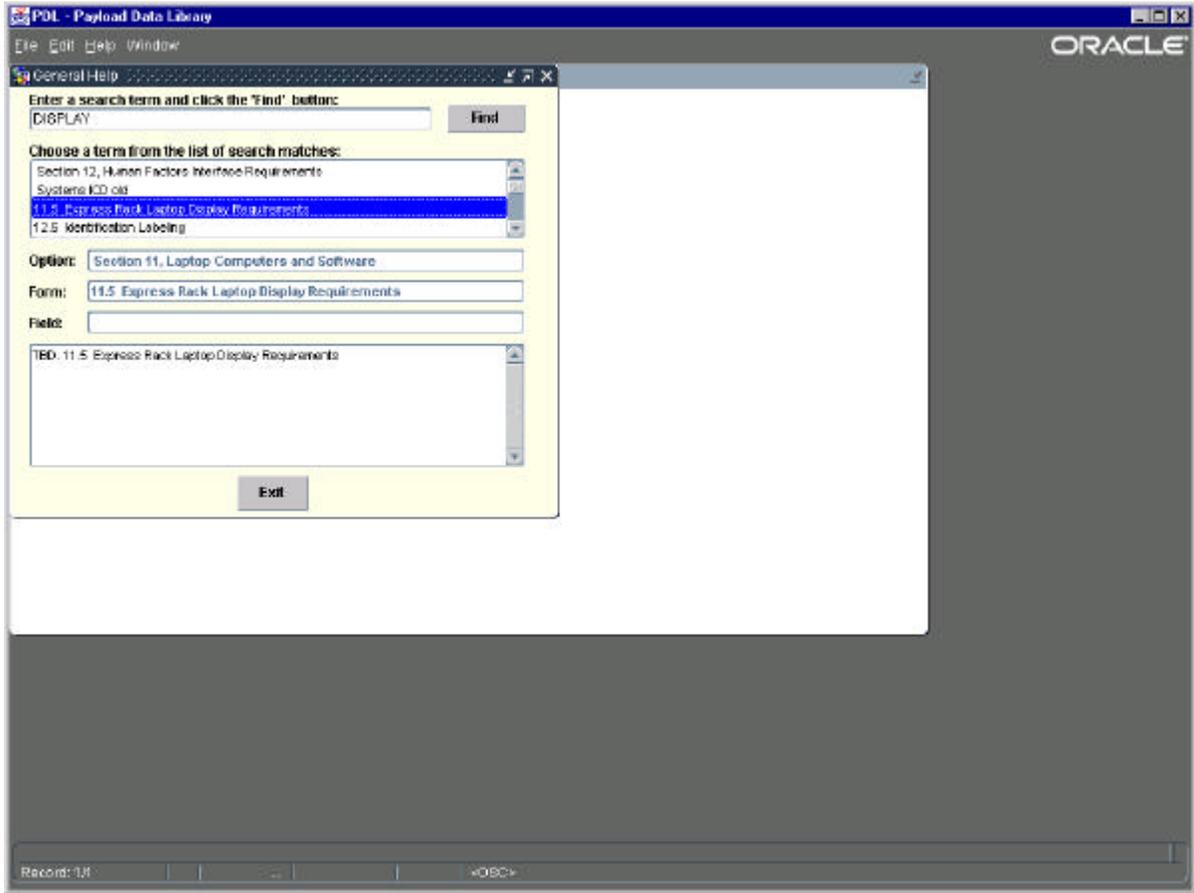


FIGURE 3-18 VIEWING GENERAL HELP

3.4.3.2 *On Forms*

To access form-specific help, select *On Forms* from the *Help* menu. All PDL options are displayed. Note: This is not data set specific. Selecting an option displays help for that option and a list of forms for the selected option (see Figure 3-19).

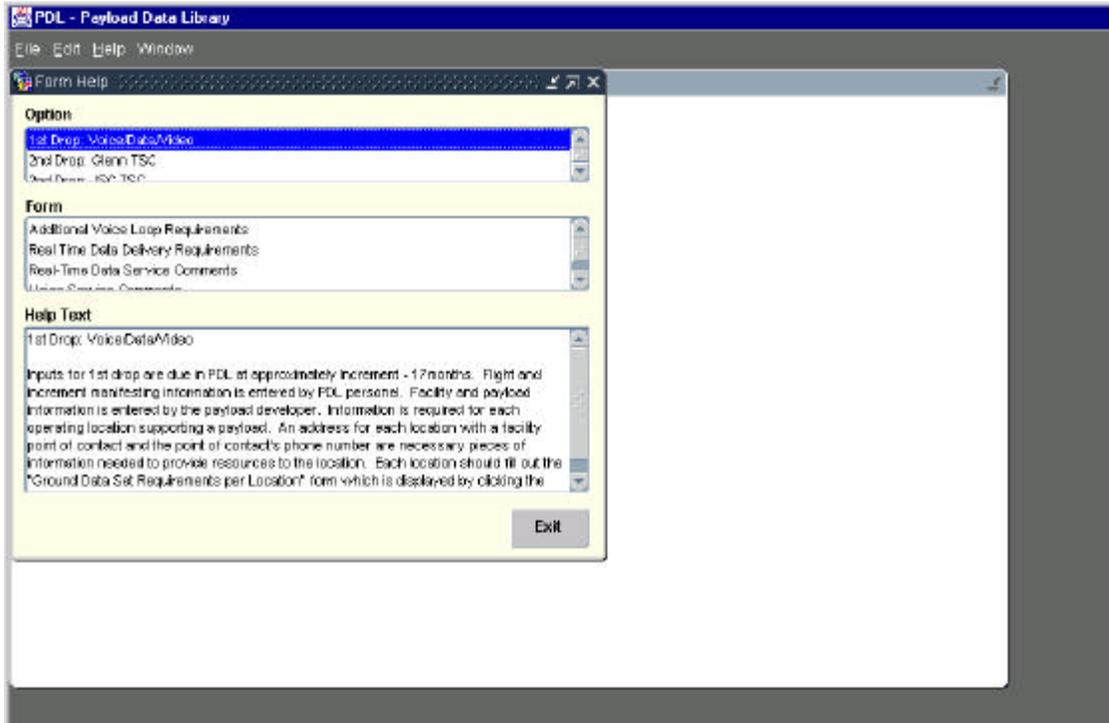


FIGURE 3-19 VIEWING OPTION-SPECIFIC HELP

If the user selects a form, the Option Help is replaced by Form Help. See Figure 3-20. Click *Exit* when finished.

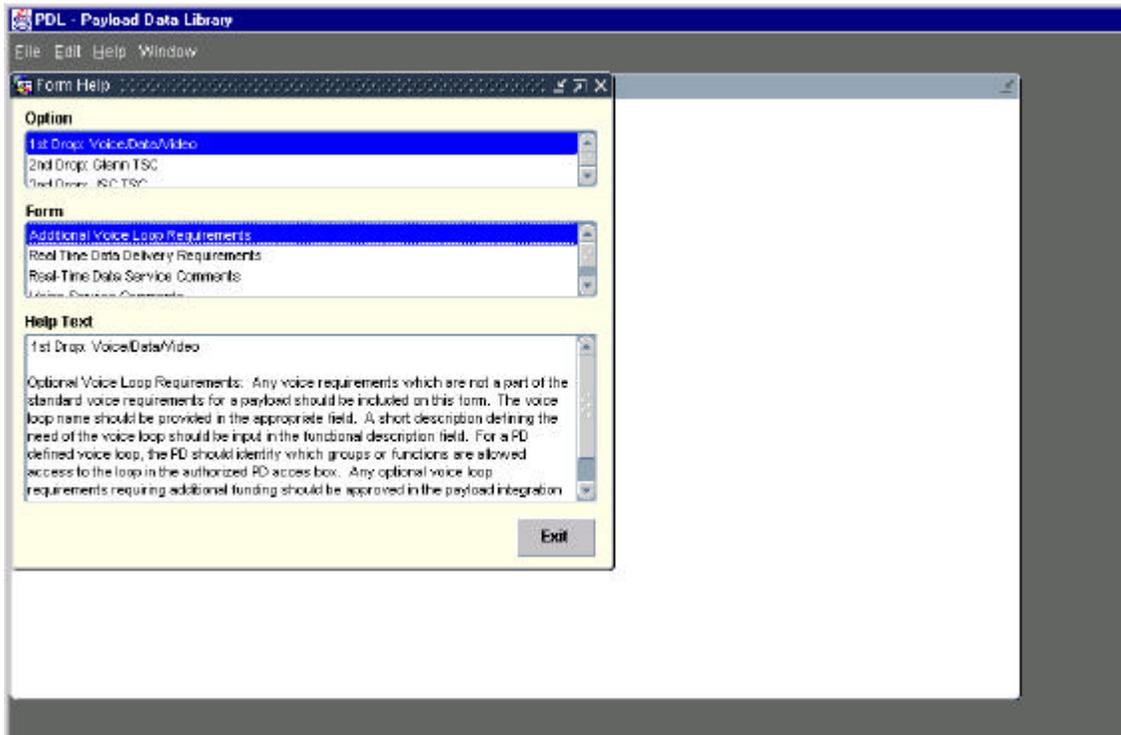


FIGURE 3-20 VIEWING FORM-SPECIFIC HELP

3.4.3.3 News

PDL News, shown in Figure 3-21, is available by selecting *News* from the *Help* menu. The current PDL version number is displayed as well as informative messages from the PDL development team. Click the *Exit* button to close the News window.

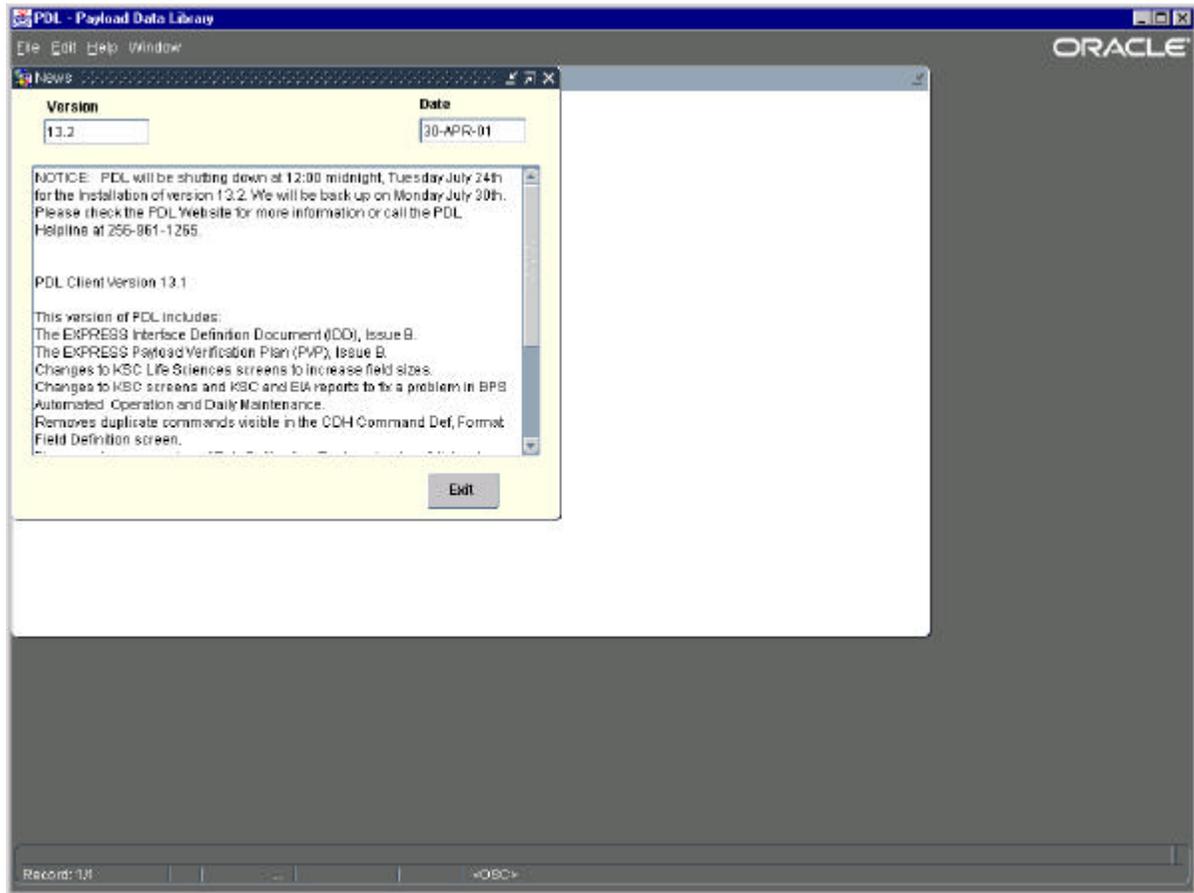


FIGURE 3-21 VIEWING PDL NEWS

3.4.3.4 *Problem Reports*

To send comments to the PDL Team, choose *Problem Reports* from the *Help* menu (See Figure 3-22). Your username, current date, current version number, computer platform, current discipline title, current option title, current section title, and the next comment number autofills. Type a message, comment, question, or problem in the description of problem field (this is the only field that the user can update). Click the *Save* button to send the comment to the PDL team. The *First* and *Last* buttons will move the pointer to the first and last records in the list respectively. The *Previous* and *Next* buttons will move the pointer one record backward or forward from the current record. Clicking the *Revert* button will revert the data to the last saved version. The *New* button will allow the user the ability to add new problem

reports into the system. *Exit* button returns to the previous screen. Use the comment number to check the status of the PDL response to your comment.

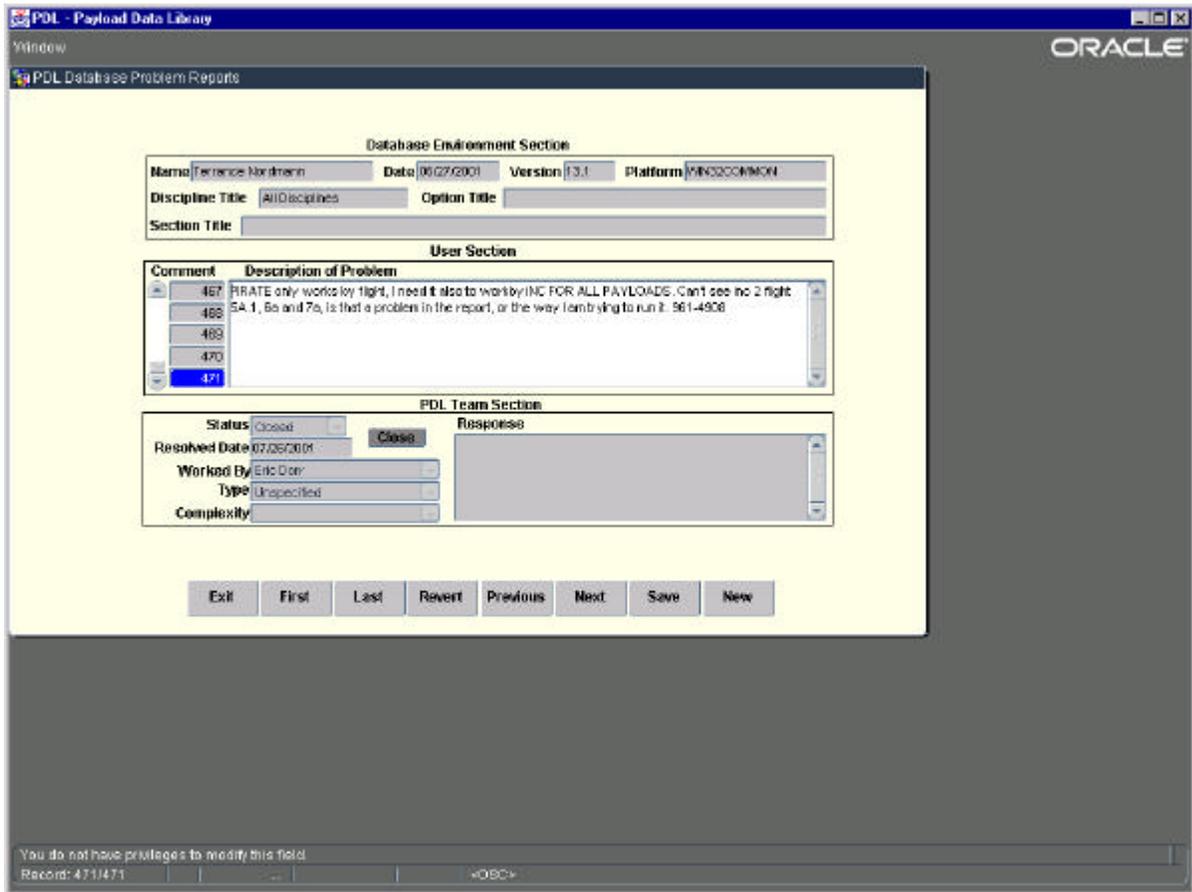


FIGURE 3-22 PROBLEM REPORTS SCREEN

3.4.3.5 Blank Book

The applicable dataset section of the Blank Book can be viewed by selecting *Blank Book* from the *Help* menu when on that dataset in the Navigation Tree (See Figure 3-23). Adobe Acrobat Reader will launch a PDF formatted version of the document. The Blank Books can also be viewed by clicking on the folder icon for a dataset via the Navigation Tree (See Figure 3-25).

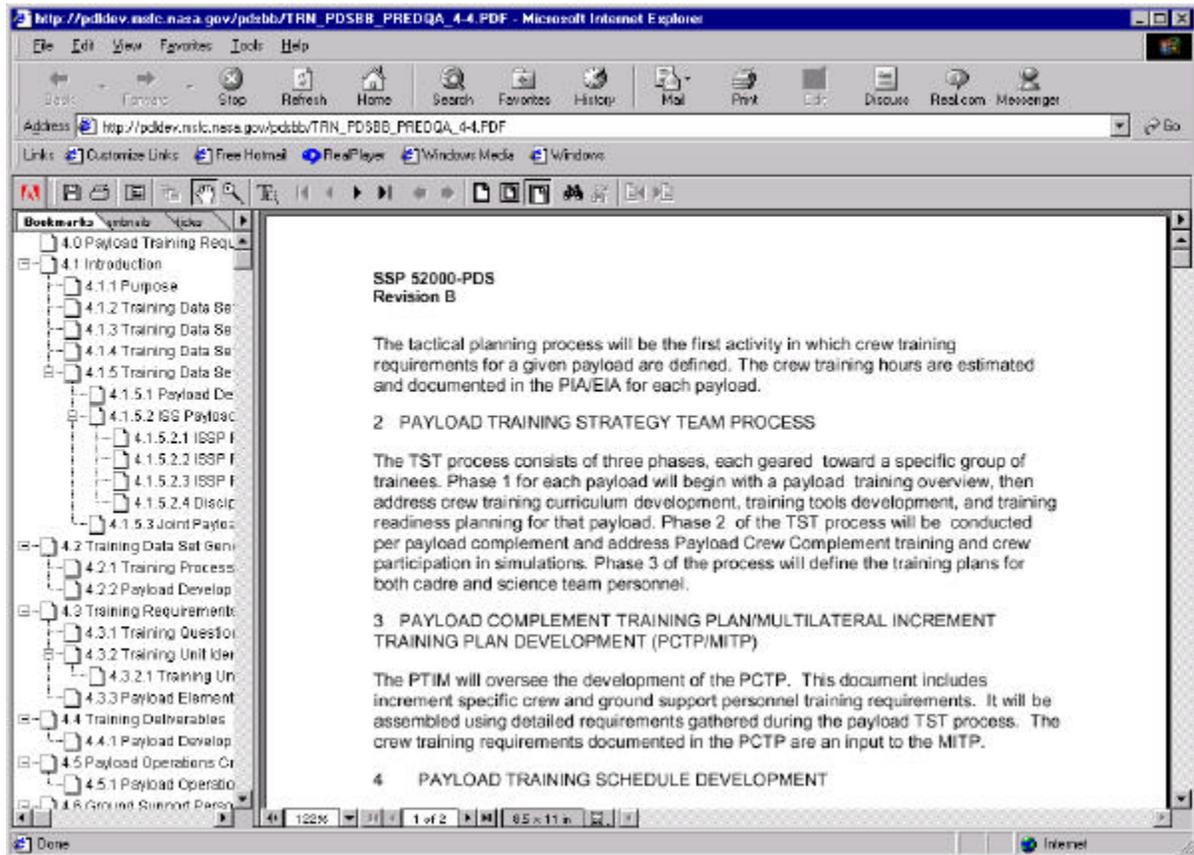


FIGURE 3-23 VIEWING THE BLANK BOOKS

3.4.4 Window Menu Selections

The *Window* menu allows the user the ability to view more than one screen at the same time when working with multiple screens by positioning the windows displayed as *Cascade*, *Tile Vertically*, or *Tile Horizontally*. It also displays the name of the active screens as shown in Figure 3-24.

3.4.4.1 Cascade

The *Cascade* menu selection item allows the user to stack the windows one over another.

3.4.4.2 *Tile Horizontally*

The *Tile Horizontally* menu selection item allows the user to stretch each window the full width of the screen and stacks them one on top of the other.

3.4.4.3 *Tile Vertically*

The *Tile Vertically* menu selection item stretches the windows vertically and arranges them side-by-side across the screen.

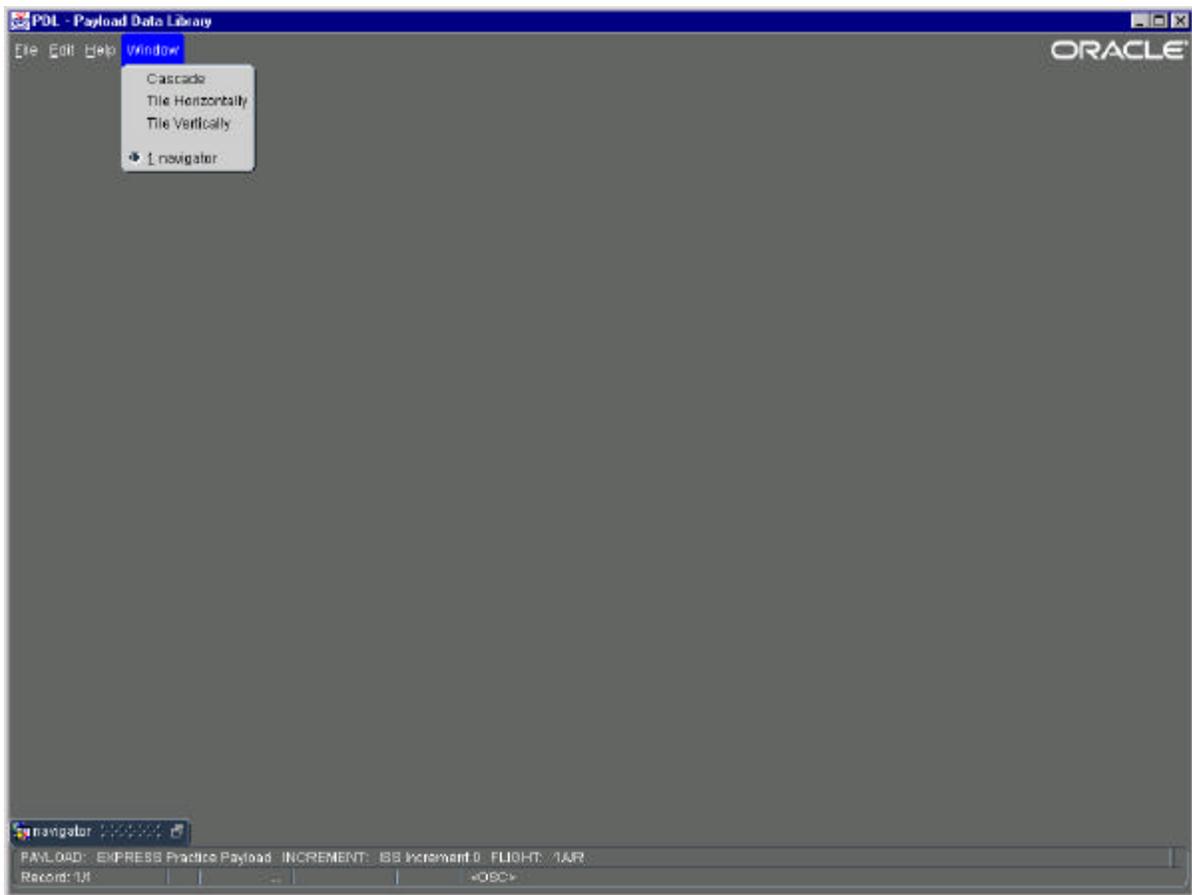


FIGURE 3-24 WINDOW MENU SELECTIONS

3.5 UNDERSTANDING THE NAVIGATION TREE AND ICONS

Figure 3-25 shows the icons that are used in the Navigation Tree and their meanings.

Icon	Characteristics	Definition
Dataset Level Icons		
	Closed and Opened Yellow Folder	Dataset
	Red Triangle	Under Construction
Option Level Icons		
	Closed and Opened Blue Folder w/ P	Option at Private Level
	Closed and Opened Green Folder w/ C	Option at Controlled (Baselined) Level
	Closed and Opened Orange Folder w/ I	Option at Integrated Level
	Closed and Opened Yellow Folder w/ Question Mark (?)	Option with no Data (additional data required and a window will pop up to enter it)
	Yellow Padlock	No Data at that Level to View
Form Level Icons		
	Scroll w/ Orange Pen	Read/Write Capability on Form
	Scroll w/ no Pen	Read Only Capability on Form
	Black Question Mark	No Data (needs additional data at the option level)
	Gray X Box	This form is not applicable to the type of data you are working on

FIGURE 3-25 NAVIGATION TREE ICONS

3.5.1 Navigating Through Data Sets

Upon selecting a payload, the Navigation Tree is built as shown in Figure 3-26. Navigating through datasets in the Navigation Tree can simply be performed by clicking on the appropriate data set with the folder icon as shown in Figure 3-25. The Datasets are as identified in Figure 2-1 (PayloadBreakdown Components).

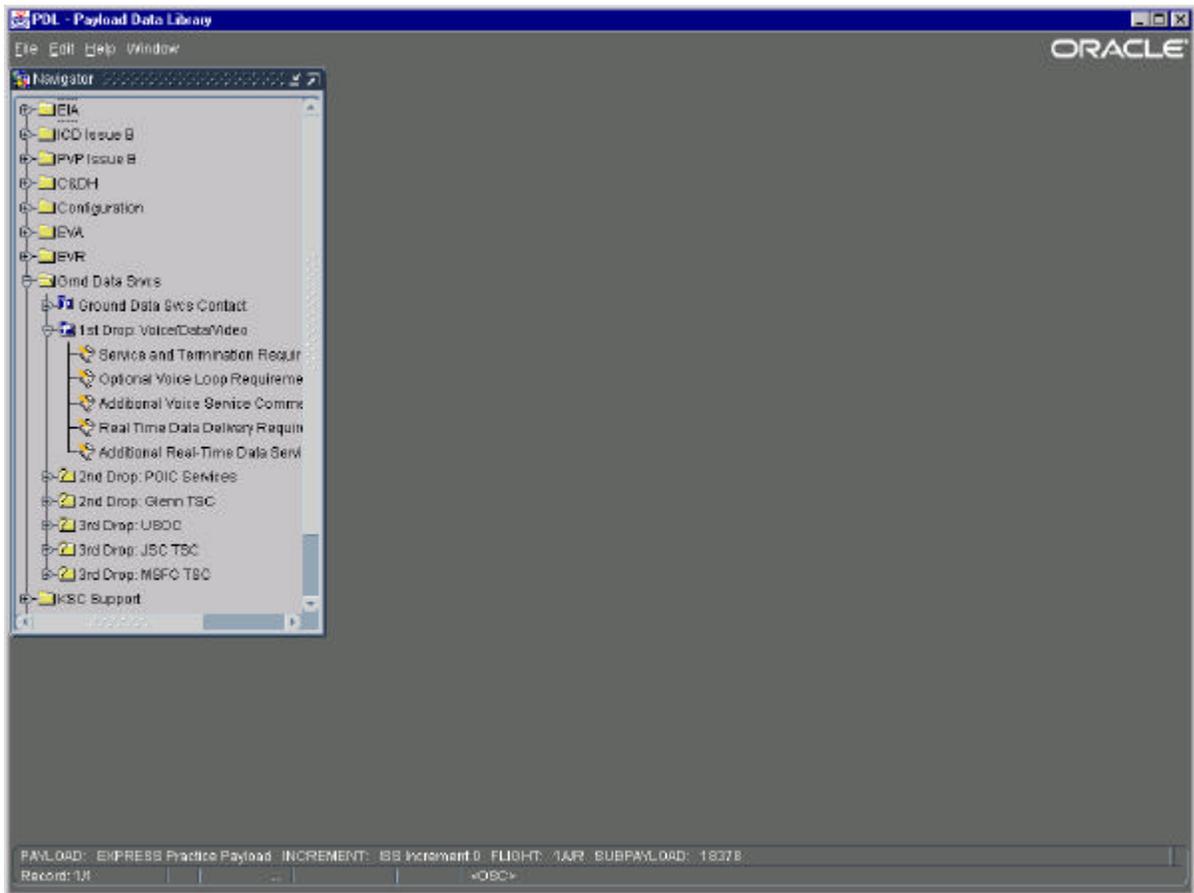


FIGURE 3-26 NAVIGATION TREE

3.5.2 *Navigating Through Options*

An option is a logical grouping of data entry forms. Navigating through Options in the Navigation Tree can simply be performed by expanding the Dataset node by clicking on the appropriate folder icons as shown in Figure 3-25 above and then selecting the appropriate Option from the list. If a question mark appears in the folder icon, as shown in Figure 3-25 above, once selected another window will pop up for the User to supply additional information. The type of windows that will require additional information are for Payload Sub-elements, POPs, etc. The following sub-section describes how to define a payload sub-element.

3.5.2.1 *Defining a Payload Sub-element*

If there are multiple sub-elements for the selected flight, the screen to select or create a particular sub-element is displayed as shown in Figure 3-27. To define a sub-element, click the *New* button and enter the Payload Sub-element Description and Acronym. When new sub-element(s) have been entered, click the *Save* button. To delete a sub-element, select it and click the *Delete* button. The *Exit* button returns the user to the main screen. Once a sub-element is created it is displayed in the list. Upon selecting the recently created sub-element or an existing sub-element click the *OK* button and the forms are available for selection

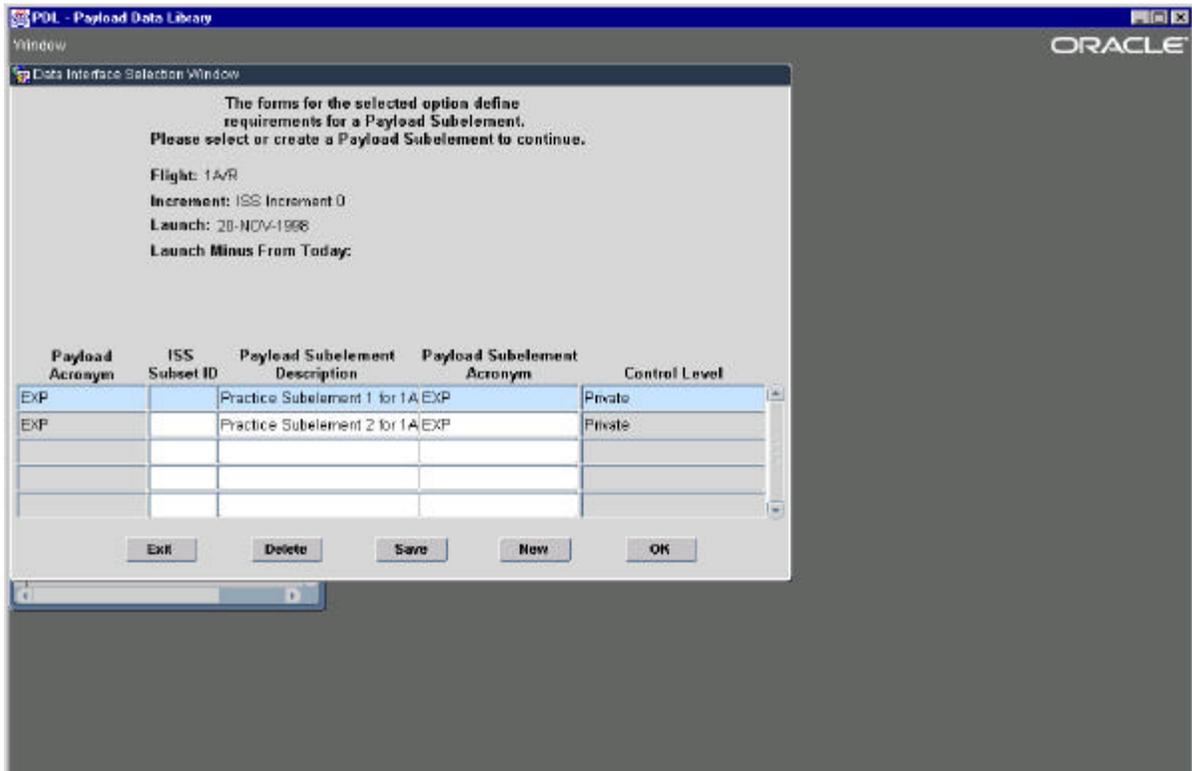


FIGURE 3-27 DEFINING A PAYLOAD SUB-ELEMENT

3.5.3 Navigating Through Forms

Selecting a form in the Navigation Tree can simply be performed by clicking on the appropriate form icon as shown in Figure 3-25 above.

3.6 UNDERSTANDING THE STATUS LINE ON A FORM

The status of the current PDL form is displayed at the top of the form (See Figure 3-28). The status includes the original author and creation date of the current record, the author and date of the latest change, and the configuration control level for the data currently displayed on the form. The name of the form also appears at the top of each form below the status line.

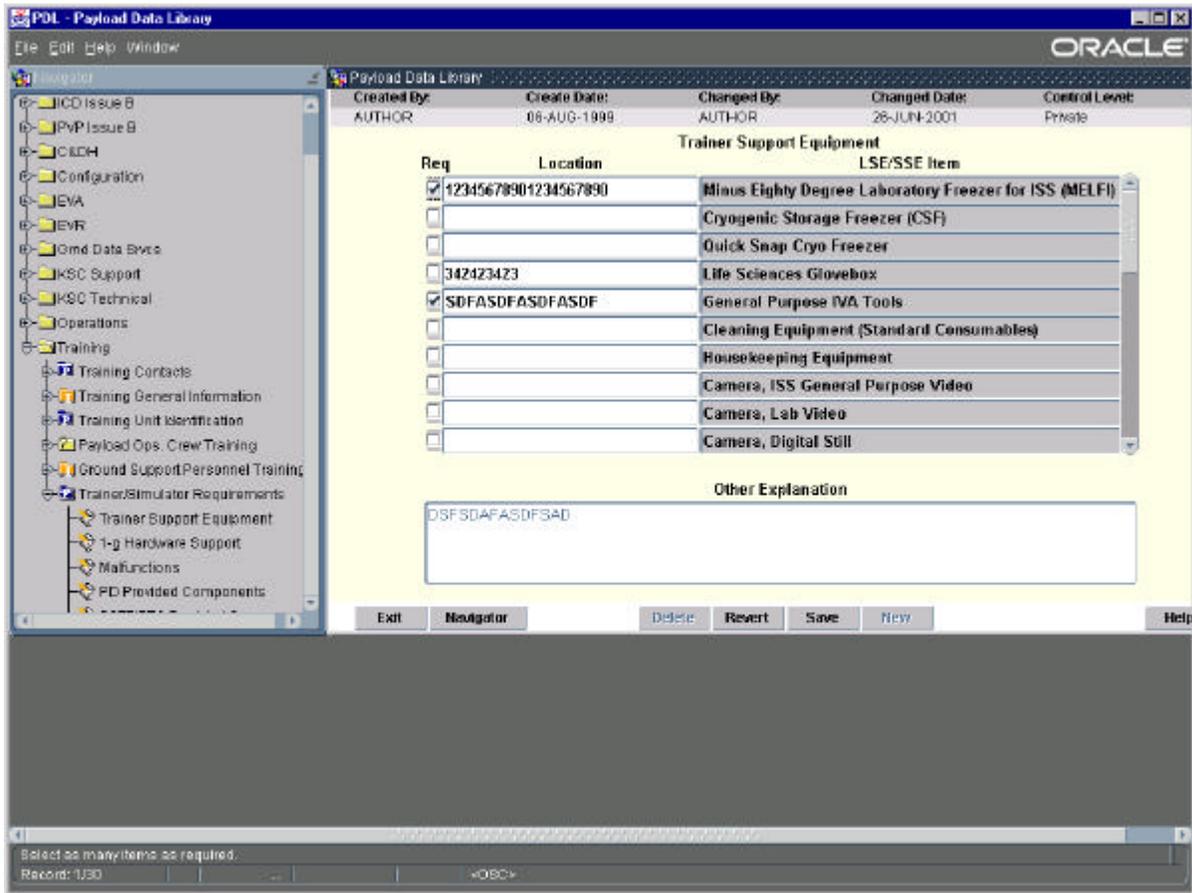


FIGURE 3-28 UNDERSTANDING THE FORM STATUS LINE

3.7 UNDERSTANDING THE LAYOUT BUTTONS

All Form screens have buttons at the bottom of the screen, as shown in Figure 3-28. Each button has its own unique function that is easily executed by a single click. The buttons from left to right are:

- EXIT** Exits the form and returns to the Navigation Tree.
- NAVIGATOR** Brings the Navigator Tree to the front of the form and allow the user to navigate to the next form in the Forms menu list

DELETE	Deletes the record shown on screen. This button may be disabled if not applicable.
REVERT	Reverses any changes that have been made to the current form since the last save. This button will be disabled if not applicable.
SAVE	Saves all changes made to the current form. This button will be disabled if not applicable.
NEW	Adds new records for user input to the current form. This button will be disabled if not applicable.
HELP	Invokes item-specific help for items on a form.

In the event a user has a read-only account, only the Exit, Navigator and Help buttons are enabled at the bottom of all Forms screens. The other buttons are not applicable in this case because no write access has been granted.

3.8 ENTERING INFORMATION INTO THE PDL

There are several ways to enter information into PDL. Any constraints on data length or format are displayed in the Hint Line at the bottom of the screen. After entering information, click the *Save* button on the bottom of the screen to save changes.

Enterable fields have a white background. Enter values by placing the cursor in the white entry field and typing the information, shown in Figure 3-29. Read-only information displays in gray non-enterable fields. Select items in a list by clicking in a checkbox as shown in Figure 3-30.

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The screenshot displays the 'PDL - Payload Data Library' application window. The title bar includes 'PDL - Payload Data Library' and the Oracle logo. The menu bar contains 'File', 'Edit', 'Help', and 'Window'. The main window is titled 'Payload Data Library' and contains the following information:

Metadata:
Created By: AUTHOR Create Date: 28-OCT-1998 Changed By: PDL Changed Date: 16-DEC-1998 Control Level: Submitted

Stowed Items (Soft Mounted)

No.	Nomenclature	Part Number

Form Fields:

- Common Name:
- Drawing Revision Number:
- Drawing No.:
- Length (cm):
- Width (cm):
- Height (cm):
- Diameter (cm):
- Weight (kg):
- Volume (cc):
- Manufacture Date:
- Item Designator:

Buttons: PART 1, PART 2, PART 3, PART 4, Exit, Navigator, Done, Abort, Save, New, Help

Status Bar: Specify the length of the item (Number 15,4) Record: 1/1 <OBC>

FIGURE 3-29 ENTERING INFORMATION IN ENTERABLE FIELDS

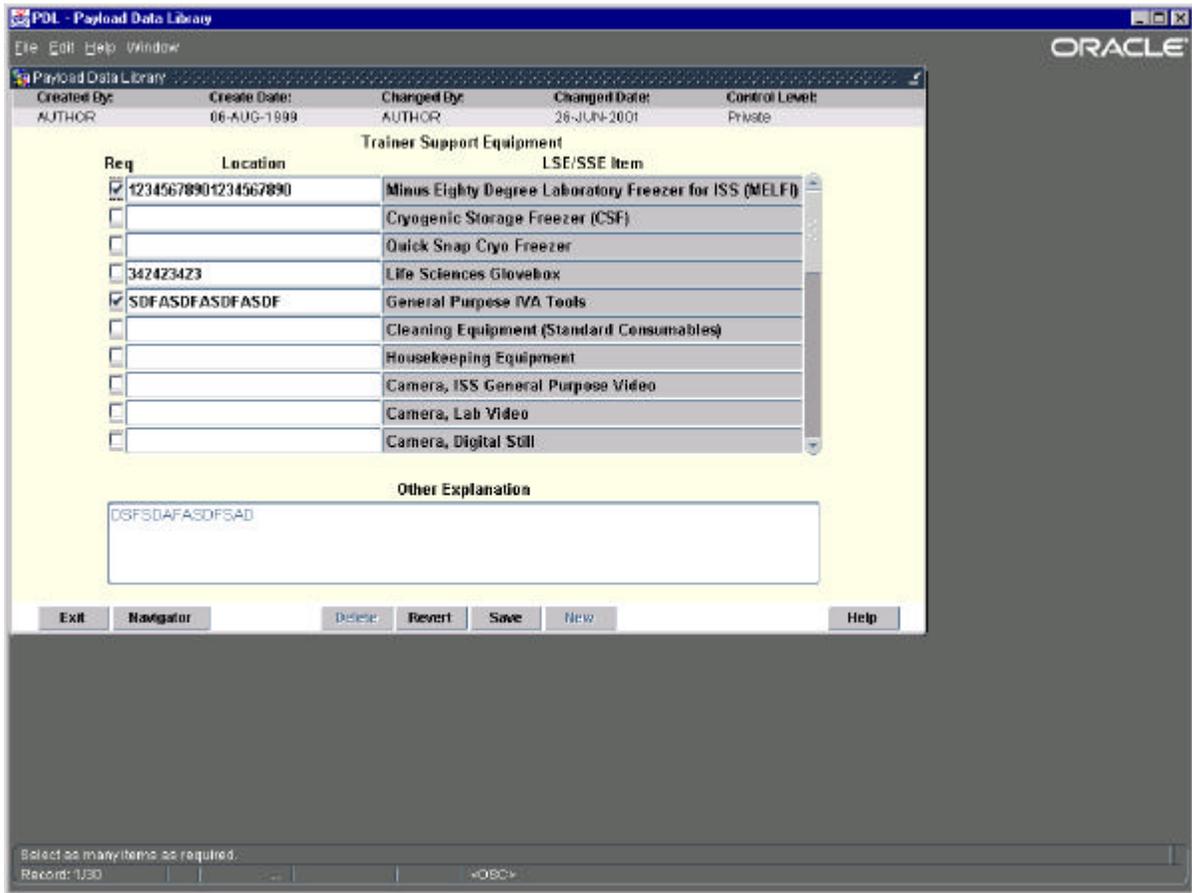


FIGURE 3-30 ENTERING INFORMATION VIA A CHECK BOX

3.9 FIELD-SPECIFIC HELP

To access field-specific help, place the cursor in the appropriate field on the form, then click the *Help* button (See Figure 3-31). The help for the selected field will be displayed. Click *Exit* when finished.

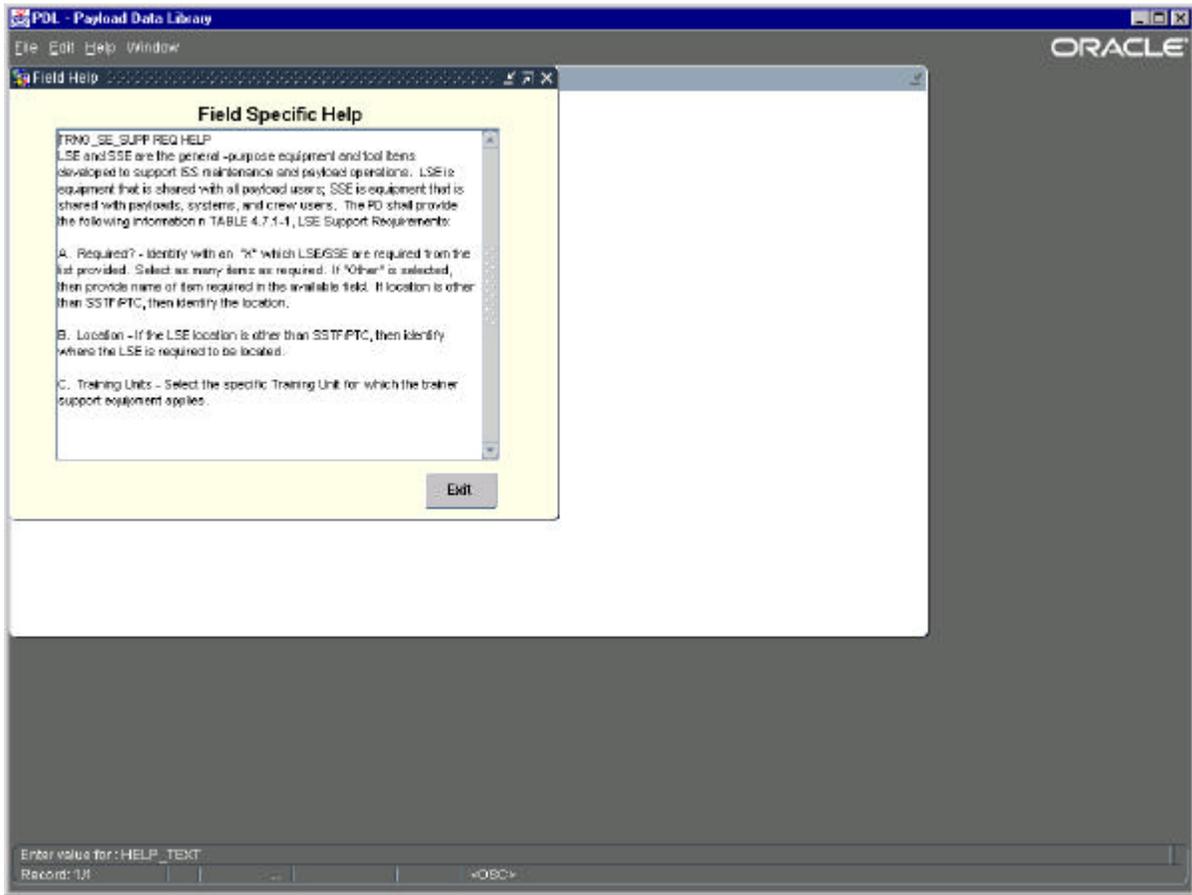


FIGURE 3-31 VIEWING FIELD-SPECIFIC HELP

3.10 IMPORTING/VIEWING GRAPHICS

3.10.1 Pressurized Payloads

PDL provides the capability to import and view graphics for pressurized payloads. Figure 3-32 below shows the screen used for importing and viewing graphics associated with the electrical/power system. Drawings can either be resident or non-resident (also referred to as CAD). If it is a non-resident image you will need to download the file to your computer. The importing and viewing of non-resident and resident image formats are discussed in greater detail in sections 3.10.1.1 and 3.10.1.2, respectively.

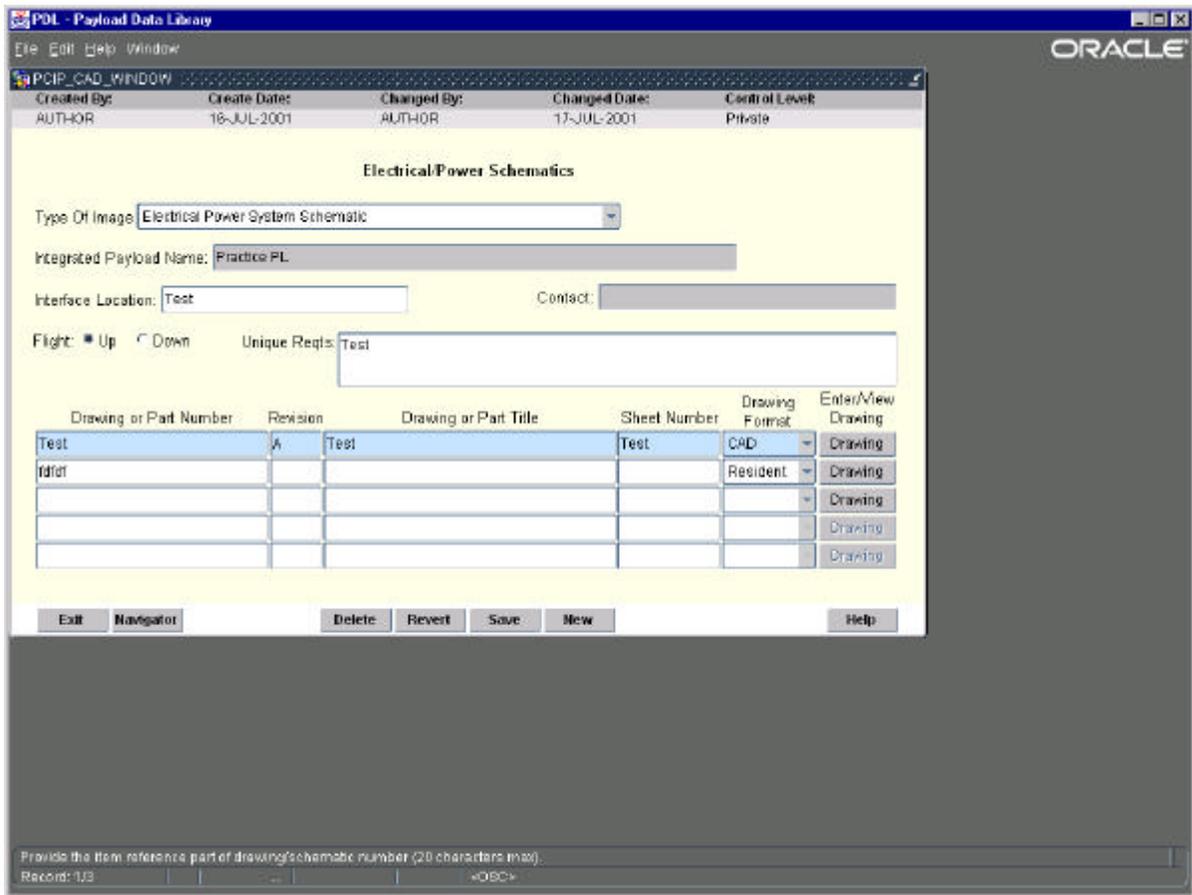


FIGURE 3-32 ELECTRICAL/POWER SYSTEM GRAPHICS SCREEN

3.10.1.1 Importing and Viewing Non-Resident (CAD) Drawings

Figures 3-33 through 3-39 will demonstrate how to import and view a new non-resident drawing (also referred to as CAD) in PDL titled “PDL Sample Drawing1”.

To import a new non-resident drawing, select the *New* button then proceed by selecting the *Type of Image* from the pull-down menu, provide the *Interface Location* of additional documentation and/or drawings/schematics, indicate if a drawing is for a *Flight Up* or *Down*, and in the *Unique Reqts* field specify any special handling or configuration requirements for the payload. Fill in the *Drawing or Part Number*, *Revision*, *Drawing or Part Title*, and *Sheet Number* fields. Select the *CAD* format from the pull down menu as shown in Figure 3-33 below. Then click on the *Drawing* button.

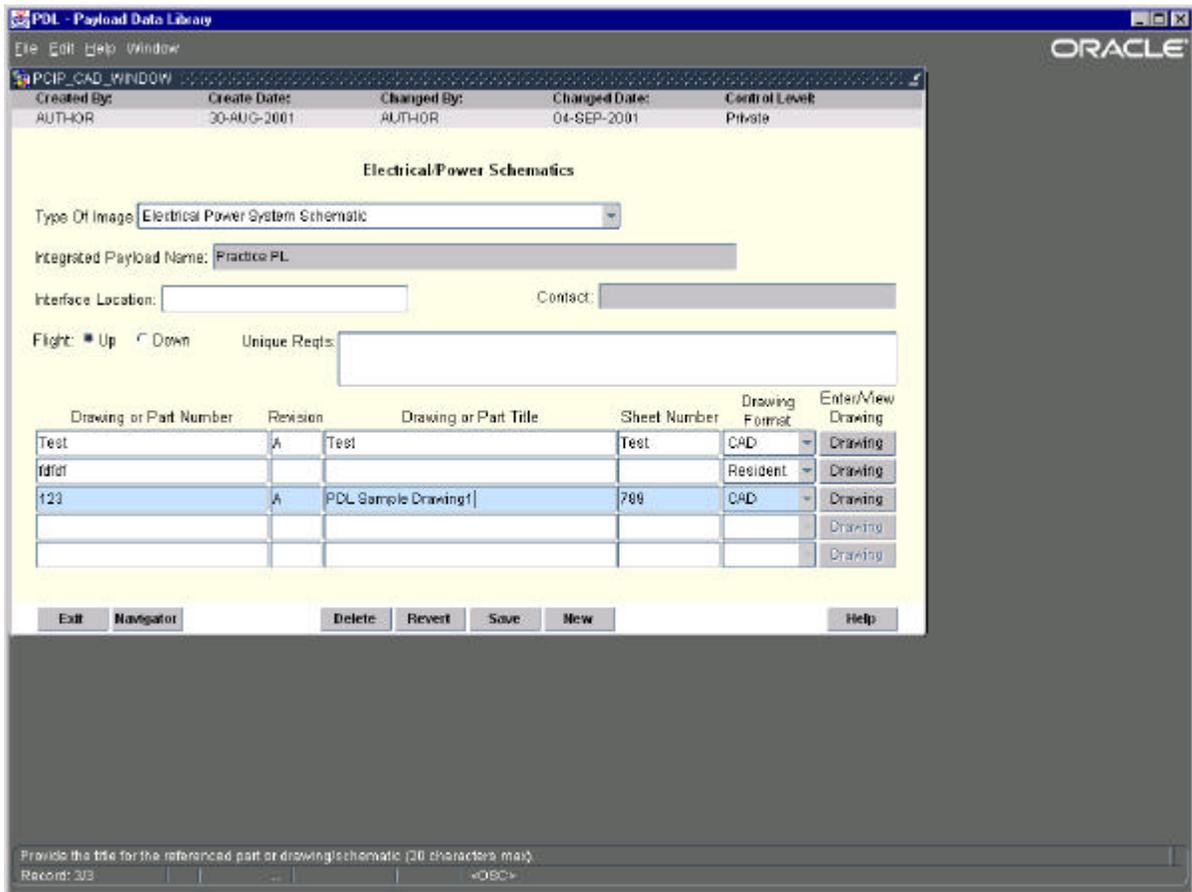


FIGURE 3-33 IMPORTING A NEW NON-RESIDENT DRAWING

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Upon clicking the *Drawing* button, the Upload/Download Content Screen will appear as shown in Figure 3-34. To upload a non-resident file, click on the *New* button on this screen.

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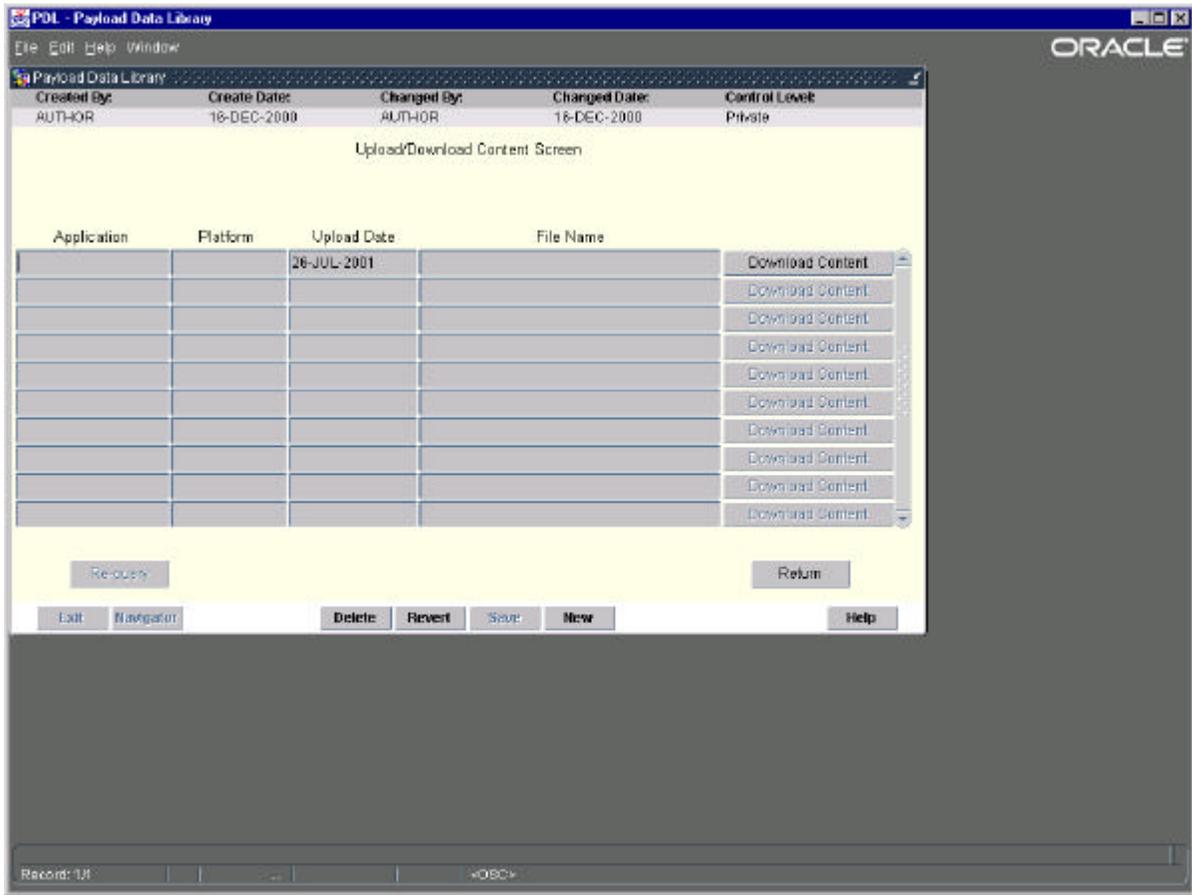


FIGURE 3-34 UPLOAD/DOWNLOAD CONTENT SCREEN

Upon clicking the *New* button, the Non-Resident Image Upload Form shown in Figure 3-35 will appear. Browse or enter the name of the file to upload and then click on *Upload Non-Resident Image* button. A separate window as shown in Figure 3-36 will appear displaying a message indicating the image was uploaded successfully.

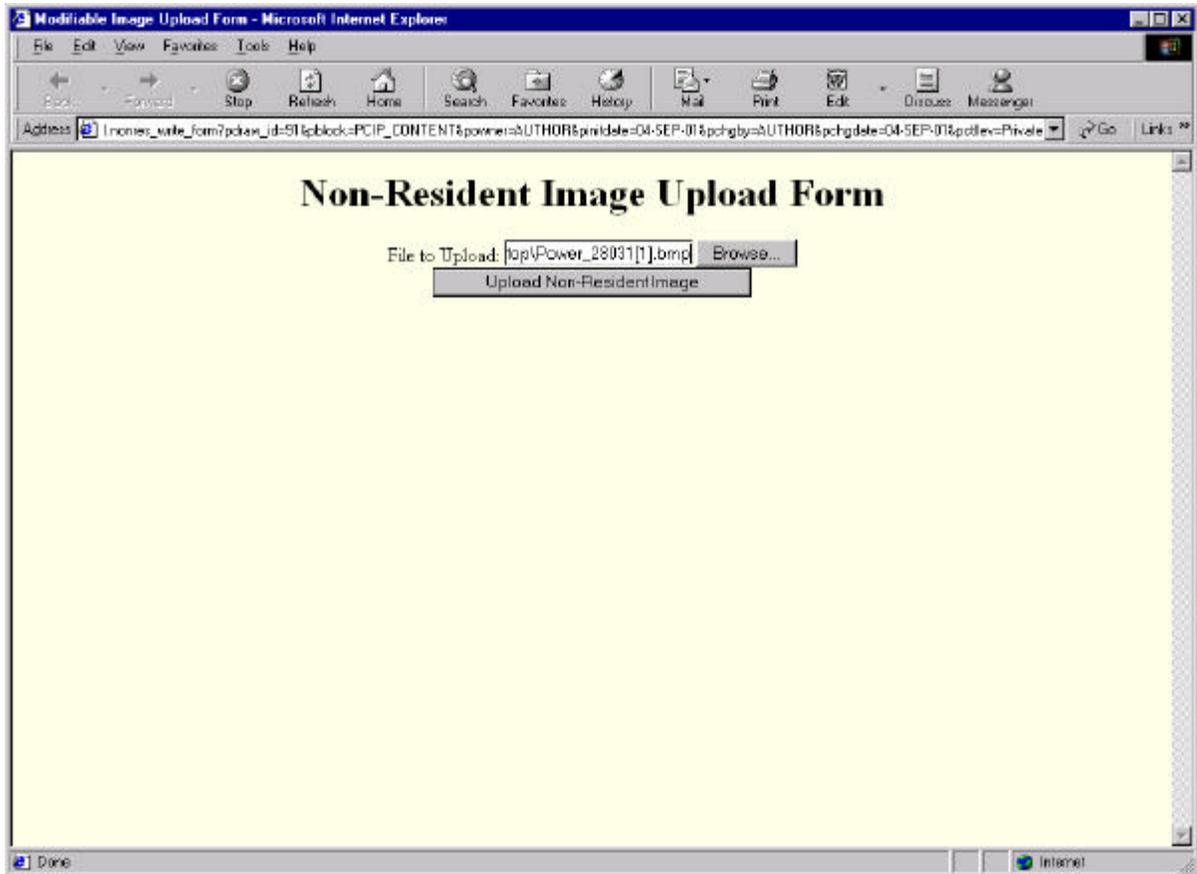


FIGURE 3-35 NON-RESIDENT IMAGE UPLOAD FORM

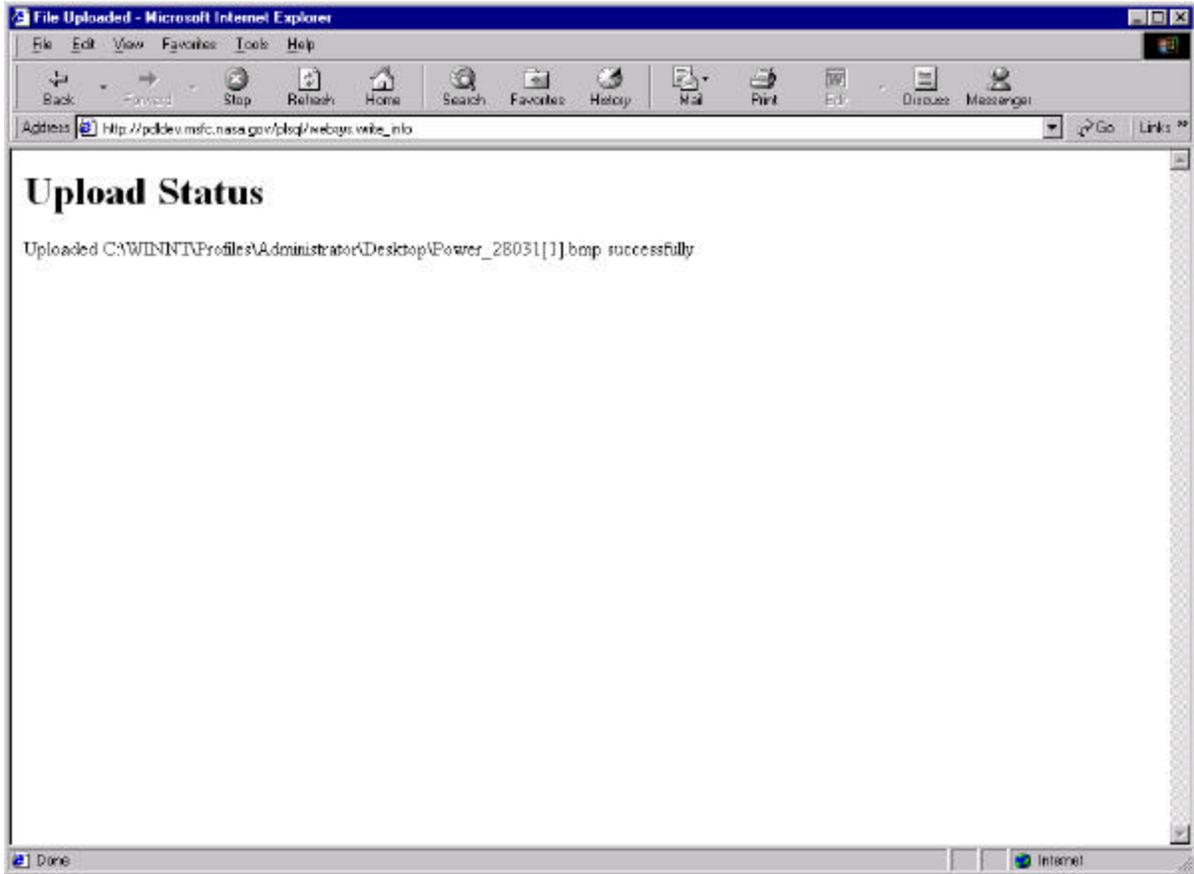


FIGURE 3-36 IMAGE UPLOADED SUCCESSFULLY WINDOW

Close the Image Uploaded Successfully window to return back to the Upload/Download Content screen. Click on the *Re-query* button to display the new record you have uploaded. The *Application*, *Platform*, *Upload Date*, and *File Name* will be automatically populated upon upload as shown in Figure 3-37 below. To view the contents of the file click on the *Download Content* button.

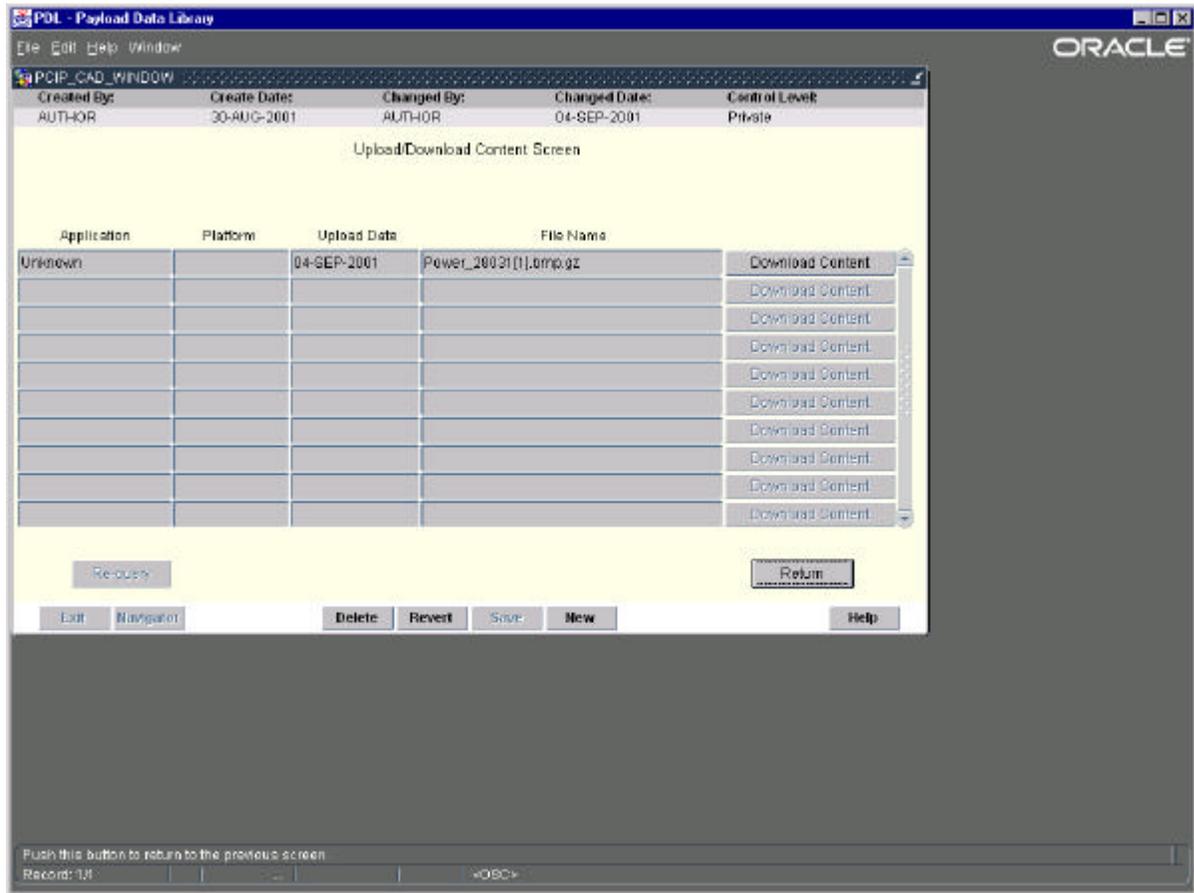


FIGURE 3-37 NEW RECORD DISPLAYED

Upon clicking on the *Download Content* button, the File Download window will appear as shown in Figure 3-38. You can either open this file from its current location or save it to disk. Saving the file to disk is recommended and is done by clicking on the radio button and clicking on the *OK* button. Once the destination for the saved file is provided another window will appear indicating that the download is complete as shown in Figure 3-39. To close this window click on the *Close* button. The file is saved in a zipped format at your desired destination and will require a decompression software (i.e., Stuff-It Expander) to open it.

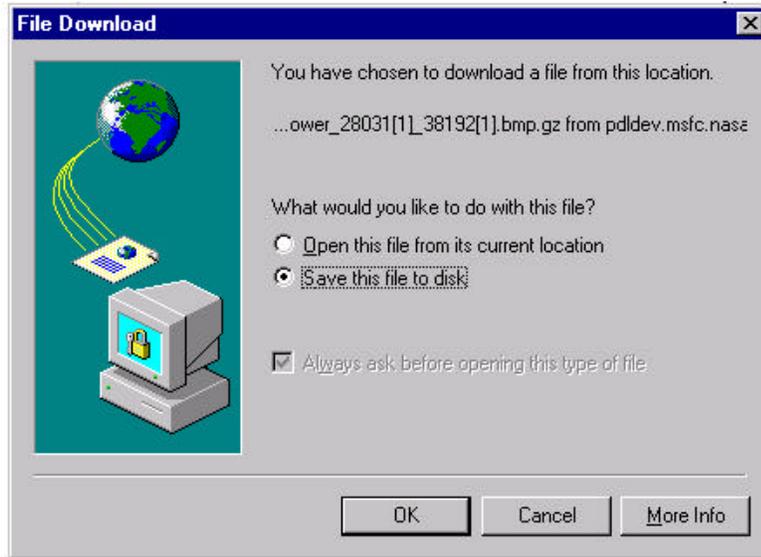


FIGURE 3-38 FILE DOWNLOAD WINDOW

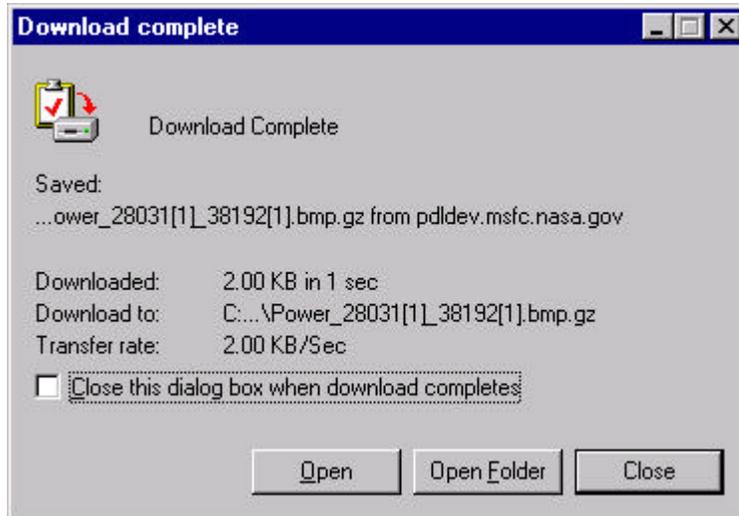


FIGURE 3-39 DOWNLOAD COMPLETE WINDOW

Once you return back to the Upload/Download Content Screen, as shown in Figure 3-37 above, click on the *Save* button in order to save the imported image and its associated data. Click on the *Return* button to go back to the screen in Figure 3-33.

3.10.1.2 *Importing and Viewing Resident Drawings*

Figures 3-40 through 3-45 will demonstrate how to import and view a new resident drawing in PDL titled “PDL Sample Drawing2”.

To import a new resident drawing, select the *New* button then proceed by selecting the *Type of Image* from the pull-down menu, provide the *Interface Location* of additional documentation and/or drawings/schematics, indicate if a drawing is for a *Flight Up* or *Down*, and in the *Unique Reqs* field specify any special handling or configuration requirements for the payload. Fill in the *Drawing or Part Number*, *Revision*, *Drawing or Part Title*, and *Sheet Number* fields. Select the *Resident* format from the pull down menu as shown in Figure 3-40 below. Then click on the *Drawing* button.

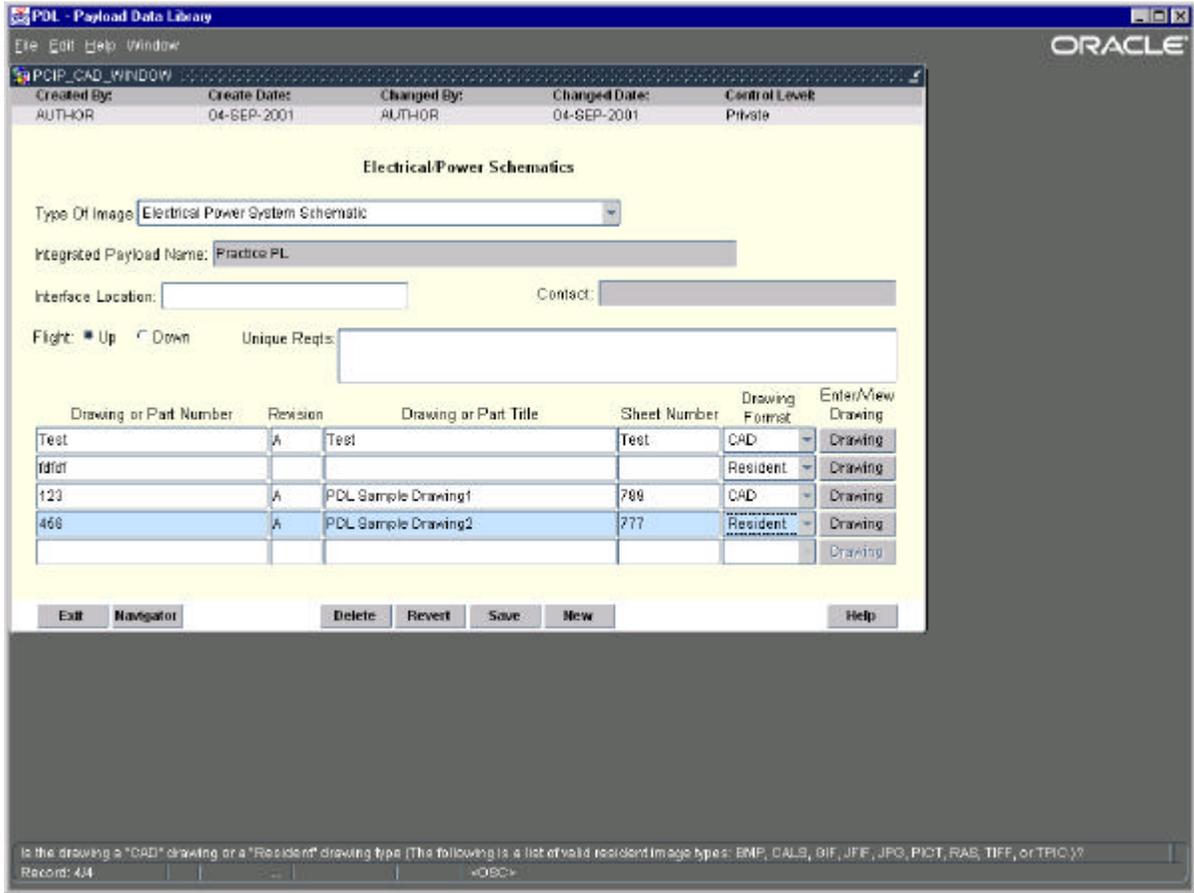


FIGURE 3-40 IMPORTING A NEW RESIDENT DRAWING

Upon clicking the *Drawing* button, the Enter/View Images Screen will appear as shown in Figure 3-41. To upload a new resident image, click on the *New* button on this screen.

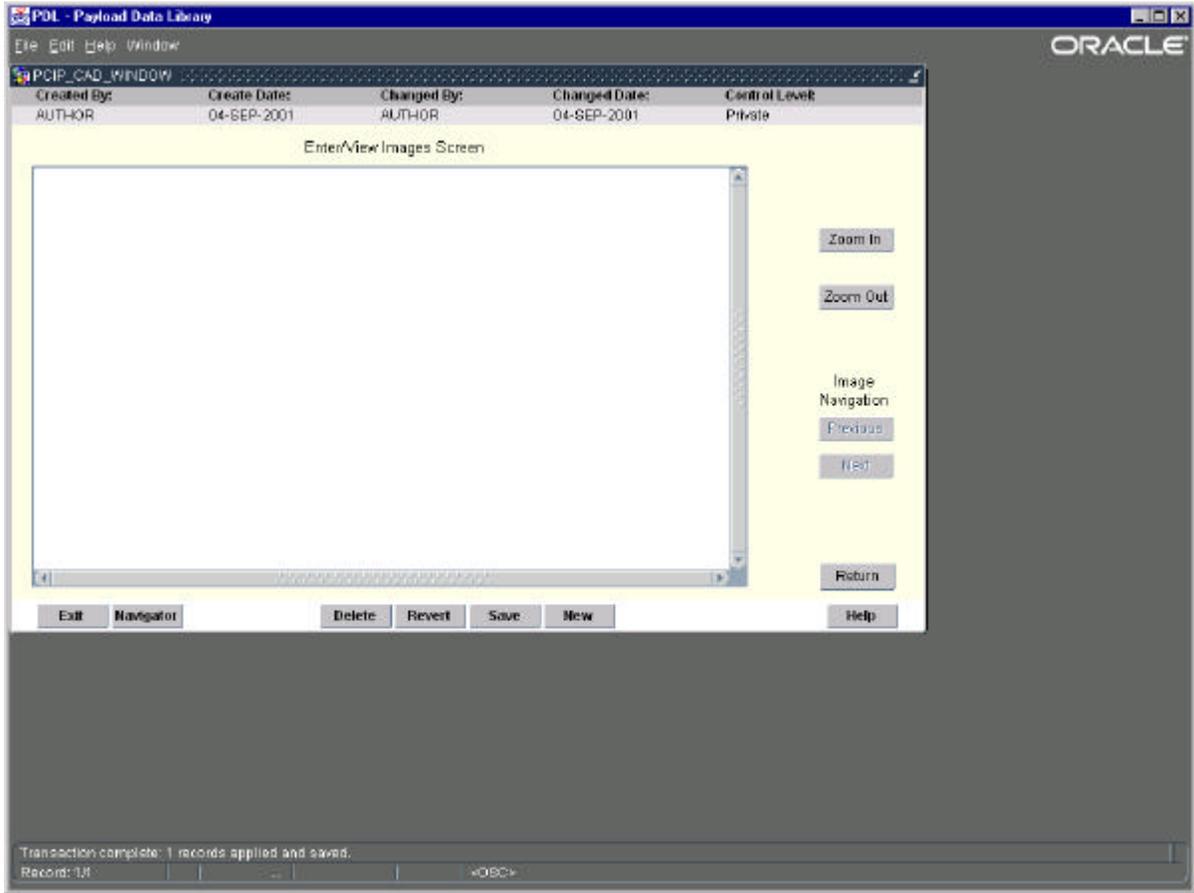


FIGURE 3-41 ENTER/VIEW IMAGES SCREEN

Upon clicking the *New* button, the Enter Image File Information window will appear as shown in Figure 3-42. *Note: If the image does not exist on the Webserver, you must upload the image before clicking the "Read Image File" button.*

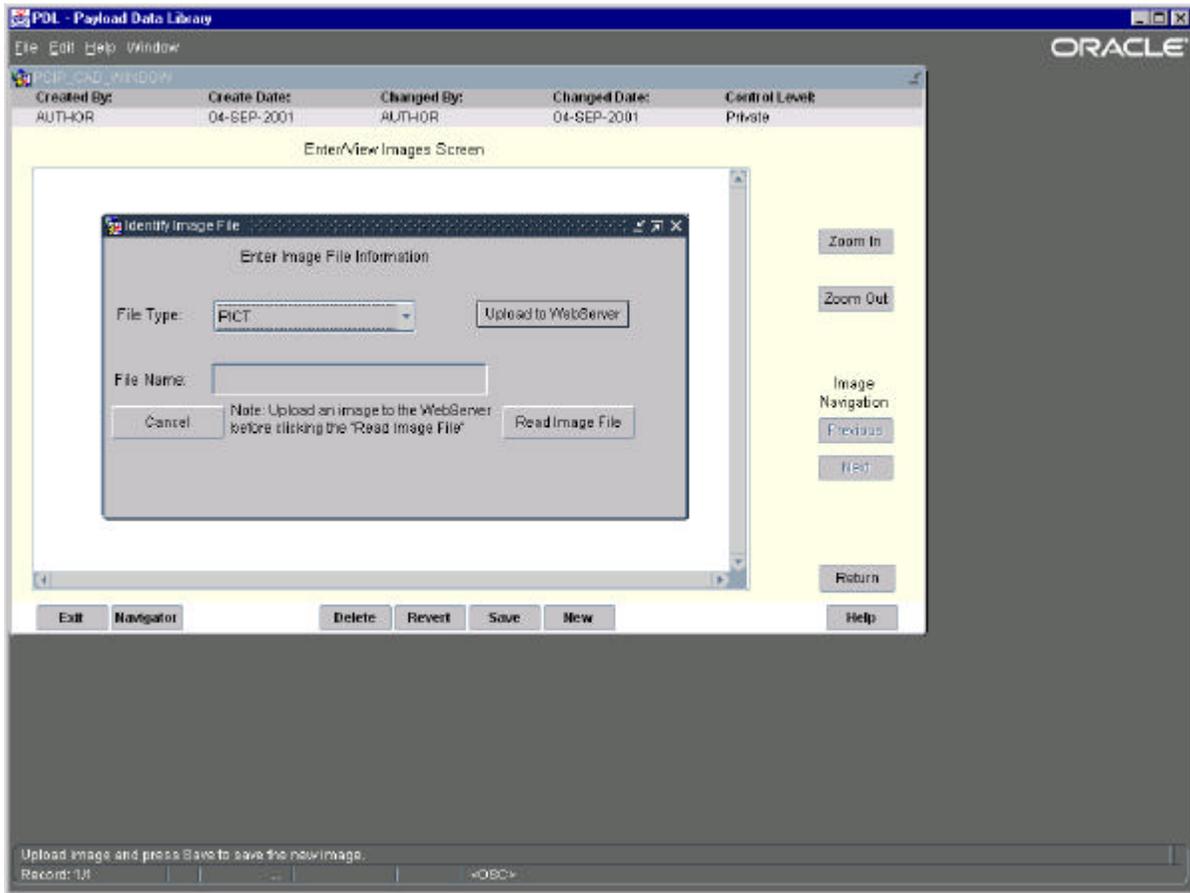


FIGURE 3-42 ENTER IMAGE FILE INFORMATION WINDOW

To upload an image to the webserver click on the *Upload to Webserver* button and the Upload Images to the PDL Webserver Screen will appear as in Figure 3-43. You must browse for the image(s) by clicking on the *Browse* button or enter the file name with the correct path and then press the *Upload* button to send this image to the webserver. Close this screen and return to the previous window shown in Figure 3-42.

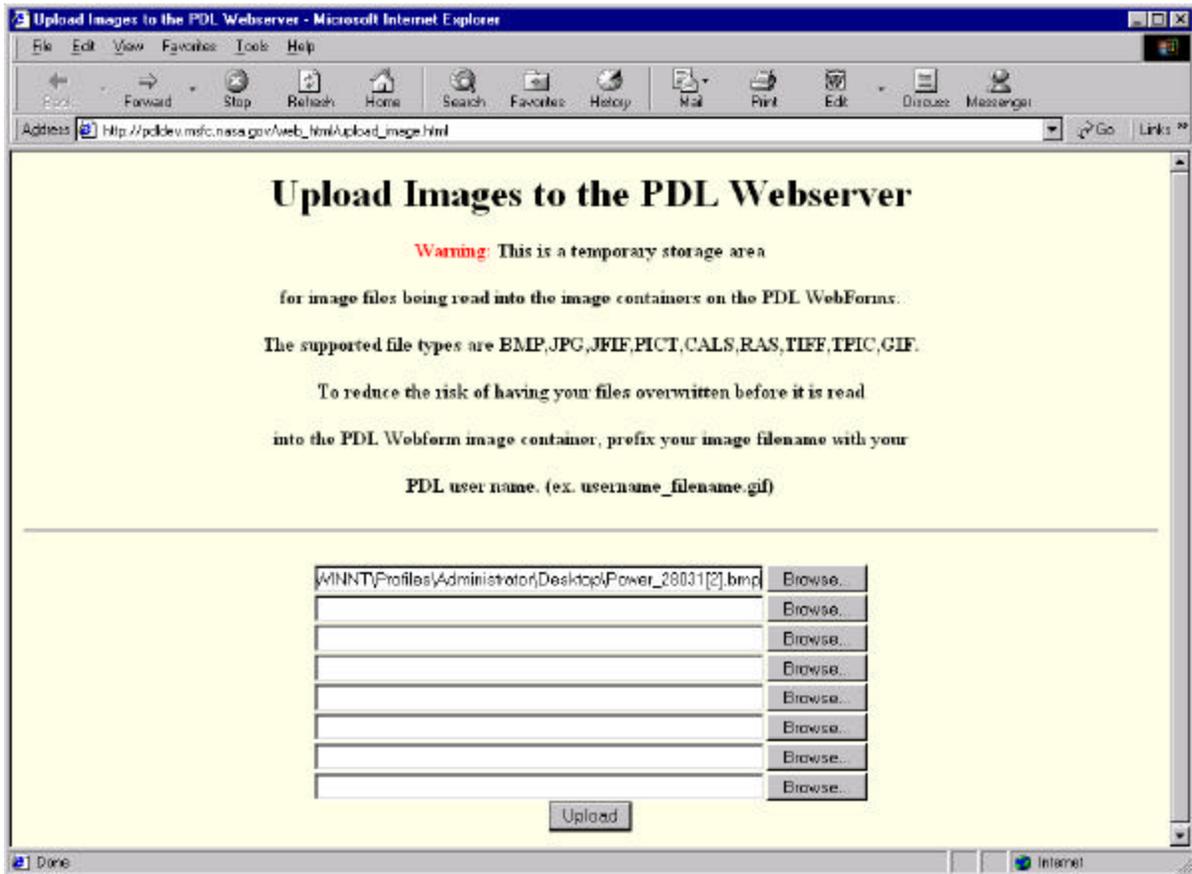


FIGURE 3-43 UPLOAD IMAGES TO THE PDL WEBSERVER SCREEN

To import an image file, you must specify the *File Type* and *File Name* (exact file name that was uploaded) then click the *Read Image File* button after entering the required file information as shown in Figure 3-44. Upon clicking the *Read Image File* button it will return to the Enter/View Images Screen which will be populated with the newly imported image for viewing as shown in Figure 3-45. Click on the *Save* button in order to save the imported image and its associated data. Click on the *Return* button to go back to the screen in Figure 3-40.

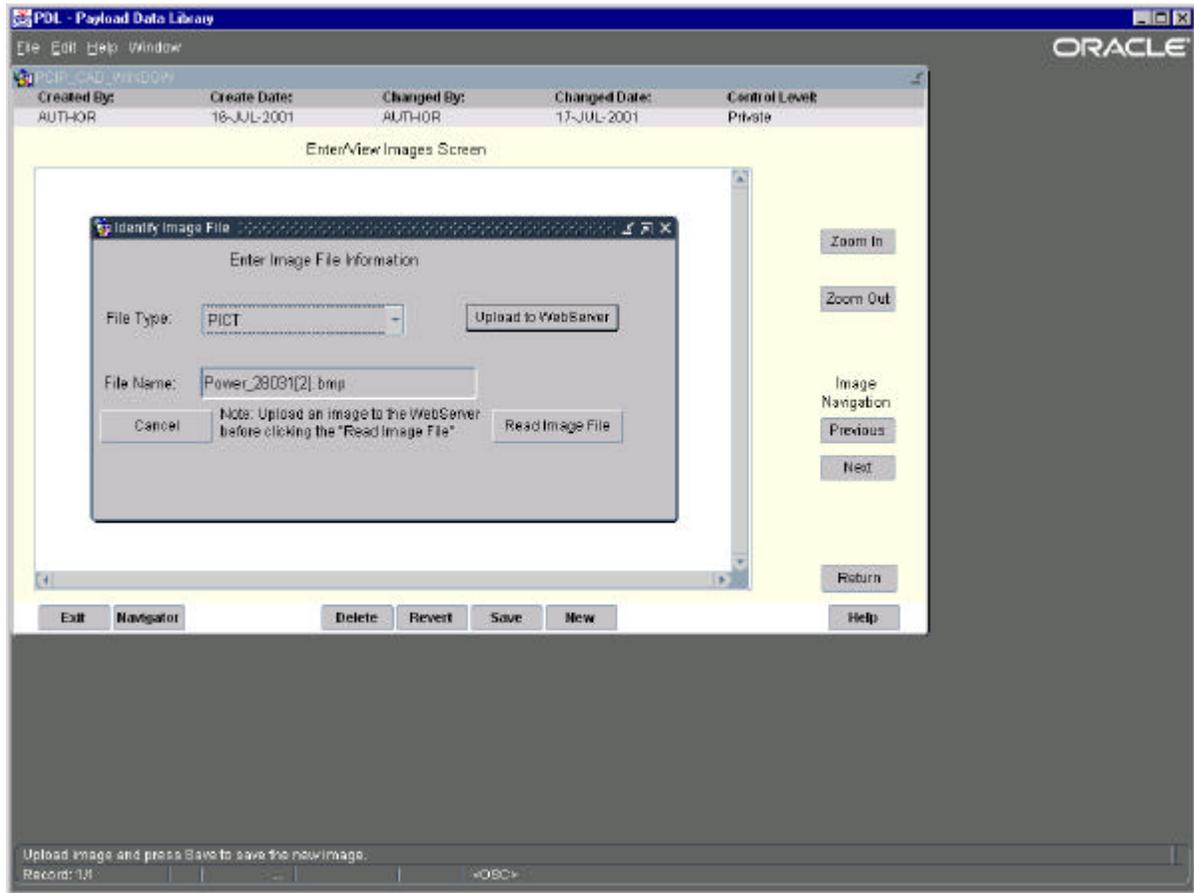


FIGURE 3-44 IMPORTING AN IMAGE FILE

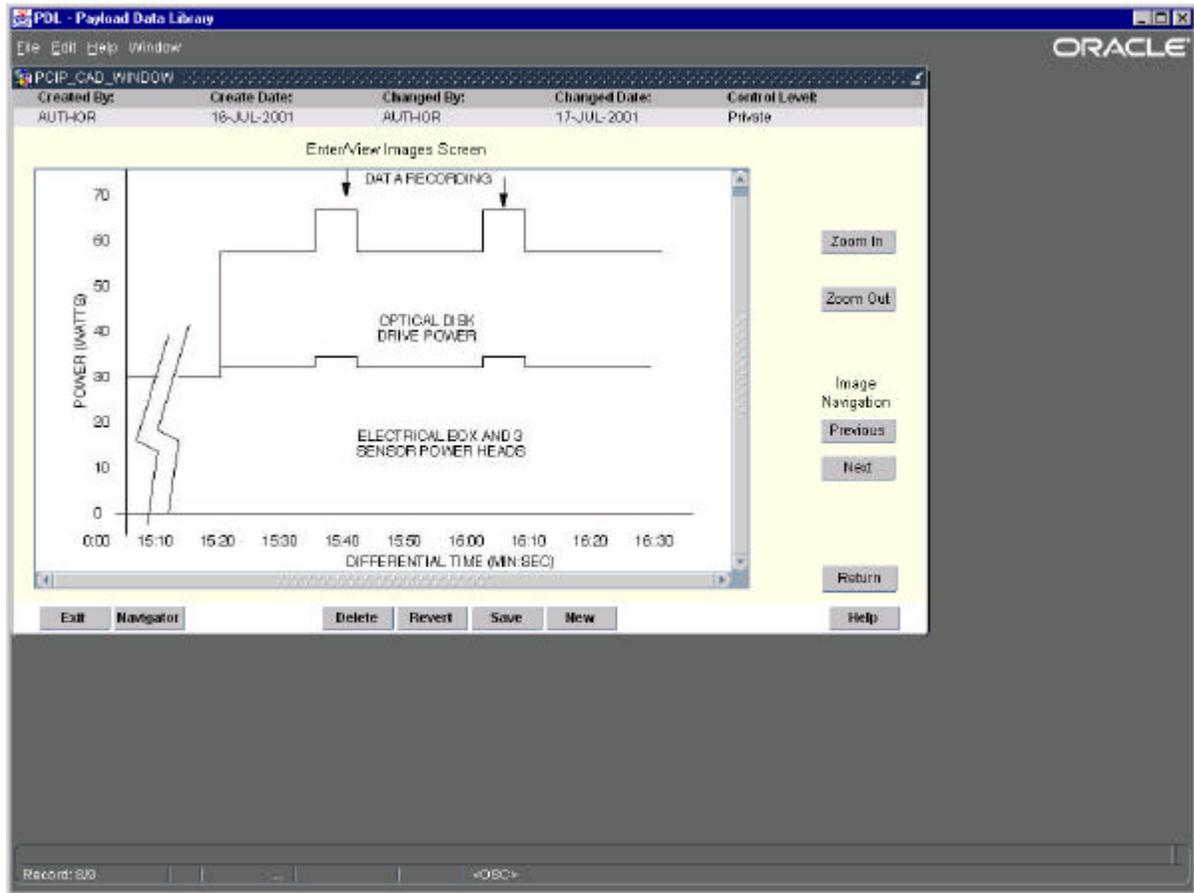


FIGURE 3-45 VIEWING THE IMPORTED IMAGE

3.10.2 EXPRESS Payloads

The only difference in importing and reviewing graphics between EXPRESS and Pressurized is how the resident and non-resident selection is made. Figure 3-46 shows a sample screen for importing/viewing graphics associated with On-Orbit Configuration Drawings. To view an image already loaded in PDL, select the drawing from the list and click the *Image* button. If it is a resident image it will appear but if it is a non-resident image it will need to be downloaded the same as for pressurized payloads.

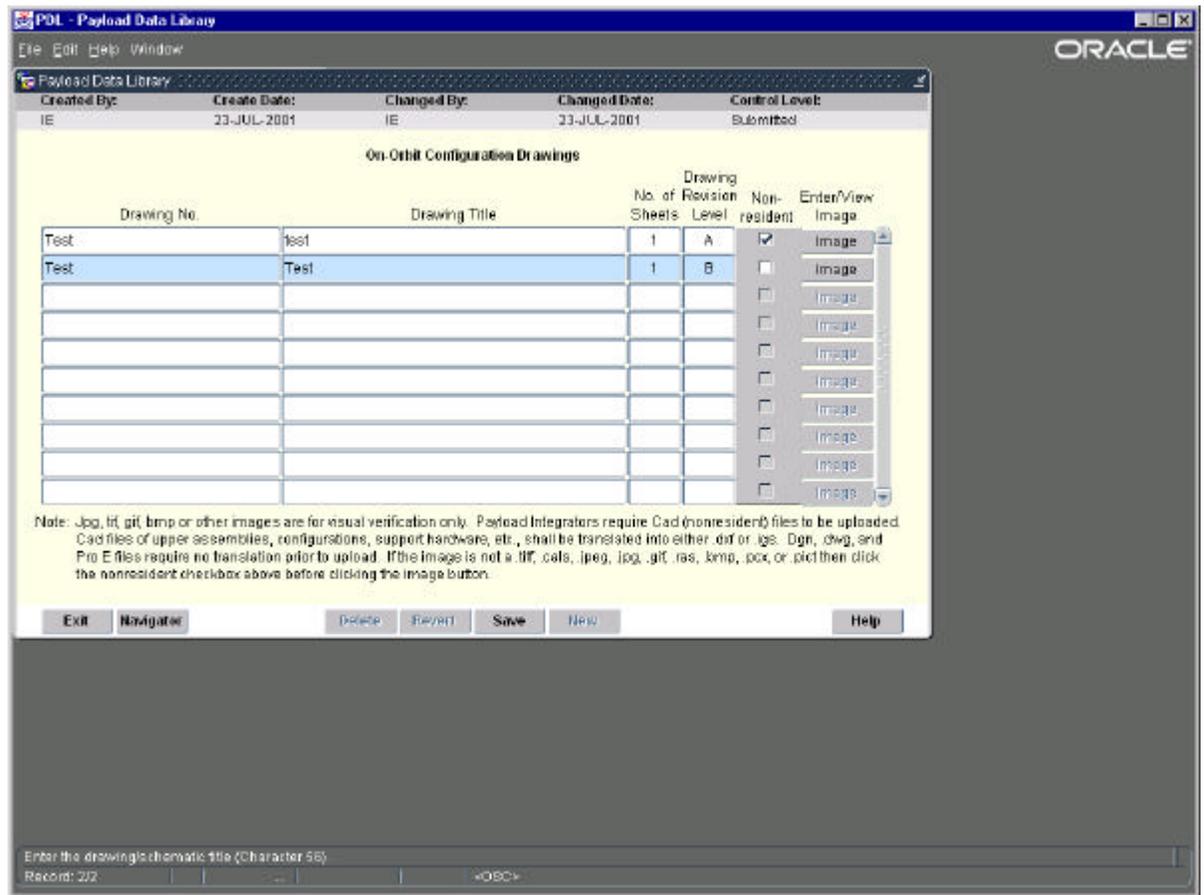


FIGURE 3-46 ON-ORBIT CONFIGURATION DRAWINGS SCREEN

To import a new graphic for the sample screen in Figure 3-46, click the *New* button to add the *Drawing No.*, *Drawing Title*, *No. of Sheets*, and *Drawing Revision Level*. If the image is non-resident, check the *Non-Resident* box and follow the directions noted at the bottom of the screen. Upon clicking the *Image* button, the Upload/Download Content Screen will appear as shown in Figure 3-34. Importing the non-resident image into PDL is the same as described in Section 3.10.1.1 for the Pressurized Payloads (see Figures 3-34 thru 3-39).

If the image is resident, do not check the *Non-Resident* box. Upon clicking the *Image* button, the Enter/View Images Screen will appear as shown in Figure 3-41. Importing the resident image into PDL is the same as described in Section 3.10.1.2 for the Pressurized Payloads (see Figures 3-41 thru 3-45).

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Once all images have been loaded, return back to the screen shown in Figure 3-46 and click on the *Save* button in order to save the imported image(s) and it's associated data. Click on the *Exit* button when finished to exit this screen.

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SECTION 4, USING THE PDL WEB SITE

The PDL web site was created to satisfy the need for people access information about PDL across the Internet. A visitor without a PDL user account can view basic information about PDL on pages such as the News and Frequently Asked Questions (FAQ). The visitor can also apply for a PDL users account through the Accounts web page. Users who already possess a PDL account can run the web-based version of the PDL client, and can upload and download drawings files to the PDL server machine. The PDL web site can be accessed through the Internet at the address: <http://pdl.hosc.msfc.nasa.gov>.

This section of the document describes the screens and functions available to visitors and PDL users across the Internet. All figures included in this section are from the PDL web site as viewed using Internet Explorer 5 on a PC. If you access the PDL web site through a Netscape browser or on a Mac, what you see may be different from the pictures in this document.

4.1 PUBLIC PAGES

The PDL web site is divided into two groups of pages: those which can be viewed by all visitors and those which require a PDL user account to access. Pages which can be reached without a PDL user account are called “public” pages because they can be viewed by any Internet user.

The left side of the PDL web page contains a menu tree which is always displayed when the PDL web site is up. Some menu items can be expanded to show additional choices. The menu provides a quick way to jump to a particular PDL page of interest. Figure 4-1 shows an example of the basic navigation menu from the left frame on the PDL page.



FIGURE 4-1 LEFT NAVIGATION MENU

4.1.1 *Software Pages*

The *Software* pages contains the plug-ins necessary to successfully run the PDL web-client as described in Section 4.2.1. These plug-ins are described in the following sub-sections and should be installed on the user's local computer.

4.1.1.1 *Java Plug-ins*

In order to run the PDL web client, it is necessary for the user's local machine be able to support the running of Java applets across the Internet. Figure 4-2 shows the page where

you can download the Oracle Jinitiator for the PC or the MacOS Runtime for Java (MRJ) for the Mac. If the user has a PC, click on the *Download the Oracle Jinitiator 1.1.8.10 plug-In* link to download the latest Oracle Jinitiator plug-in and save the executable file to the local hard drive. Do not try to open the file across the Internet. When it has been saved to the local hard drive, find the file and double-click to execute it. The page also contains instructions for how to install the software. Some browser versions may not be compatible with the Jinitiator software. Please update the local browser if necessary.

Notice: For Windows 2000, do not install the plug-in under the "C:\Program Files" directory (the default). Create a new directory (for example C:\Jinitiator) and install the plug-in there. When the installer window shows you the suggested "Destination Directory", click on the "Browse" button and type in or select the directory you created.

If the user has a Mac computer, select *Download the Mac OS Runtime for Java (MRJ) 2.2 plug-in* at the bottom of this page. The user should follow the instructions on the page for installation. MRJ is configured to work with Oracle on the Mac the same way Jinitiator does on the PC.

Notice: If you have trouble uncompressing the MRJ or your Stuff-It program says the MRJ file is corrupt, you will need to get a newer version of Stuff-It. You can download a new Stuff-It Expander from this web site. On the left navigation menu under "Software", click on "Stuff-It Plug-Ins." Scroll down to the Mac Stuff-It Expander. Install the new Stuff-It on your Mac and then return here to finish downloading and installing MRJ.



FIGURE 4-2 JAVA PLUG-INS PAGE

4.1.1.2 Adobe Plug-Ins

This page contains the link to the Adobe web site where you can download the latest version of the Acrobat Reader to your machine for viewing reports generated by the PDL Web Client as shown in Figure 4-3. This plug-in will allow your browser to automatically pop-up a display of a report you have run.

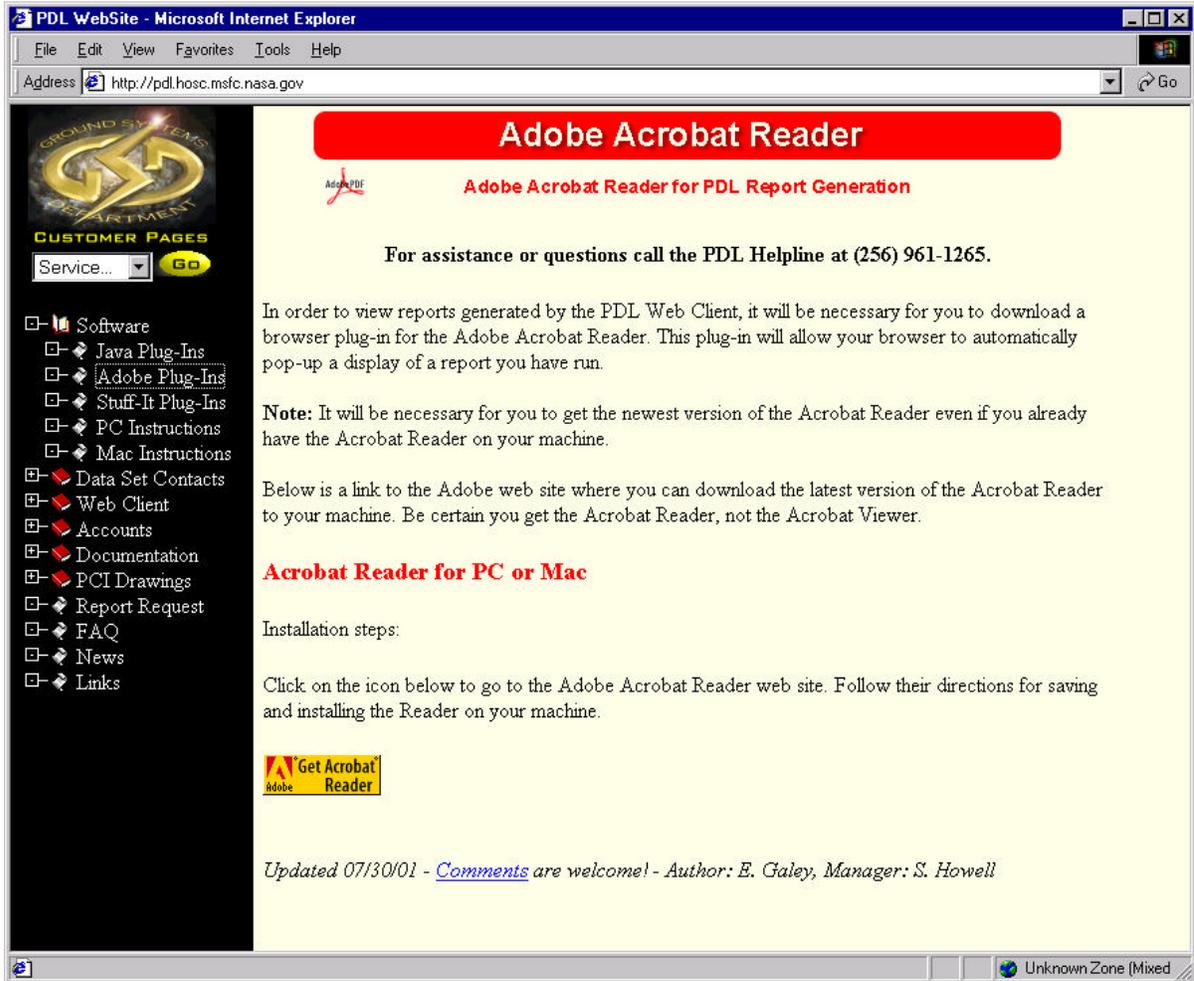


FIGURE 4-3 ADOBE ACROBAT READER PAGE

4.1.1.3 Stuff-It Plug-Ins

In order to view compressed drawings and graphics retrieved from the PDL database, it will be necessary for you to download a browser plug-in for the Aladdin Stuff-It Expander from the page as shown in Figure 4-4 . This plug-in will allow your browser to automatically uncompress the drawing, diagram or picture as it is retrieved from the database. PC users should select *Download the PC Stuff-It Expander plug-in* and the Mac users should select *Download the Mac Stuff-It Expander plug-in*. The steps are provided for both installations.

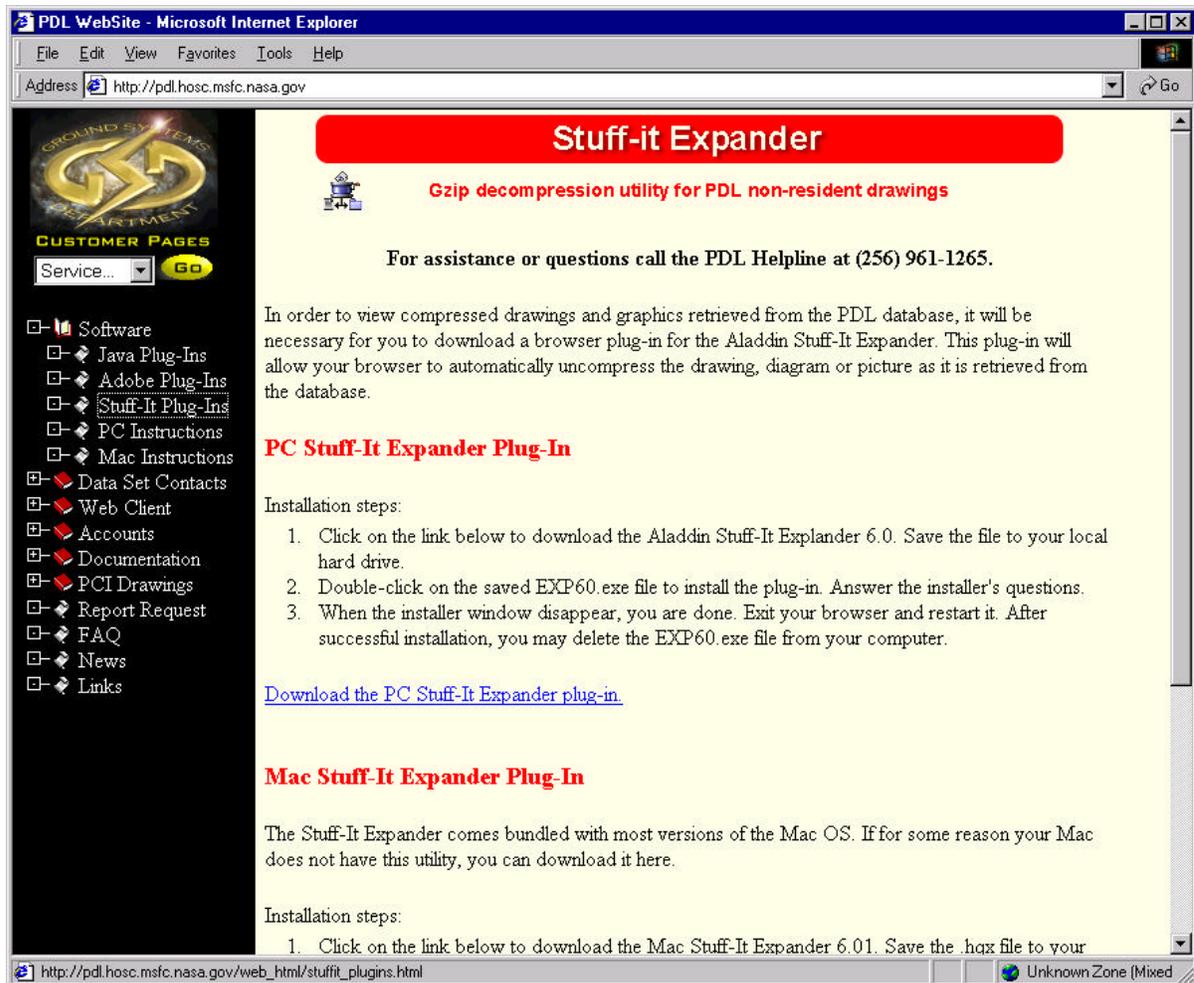


FIGURE 4-4 STUFF-IT PLUG-INS PAGE

4.1.1.4 PC Instructions

The page shown in Figure 4-5 contains basic instructions for installing and running the PDL Web Client on your PC.

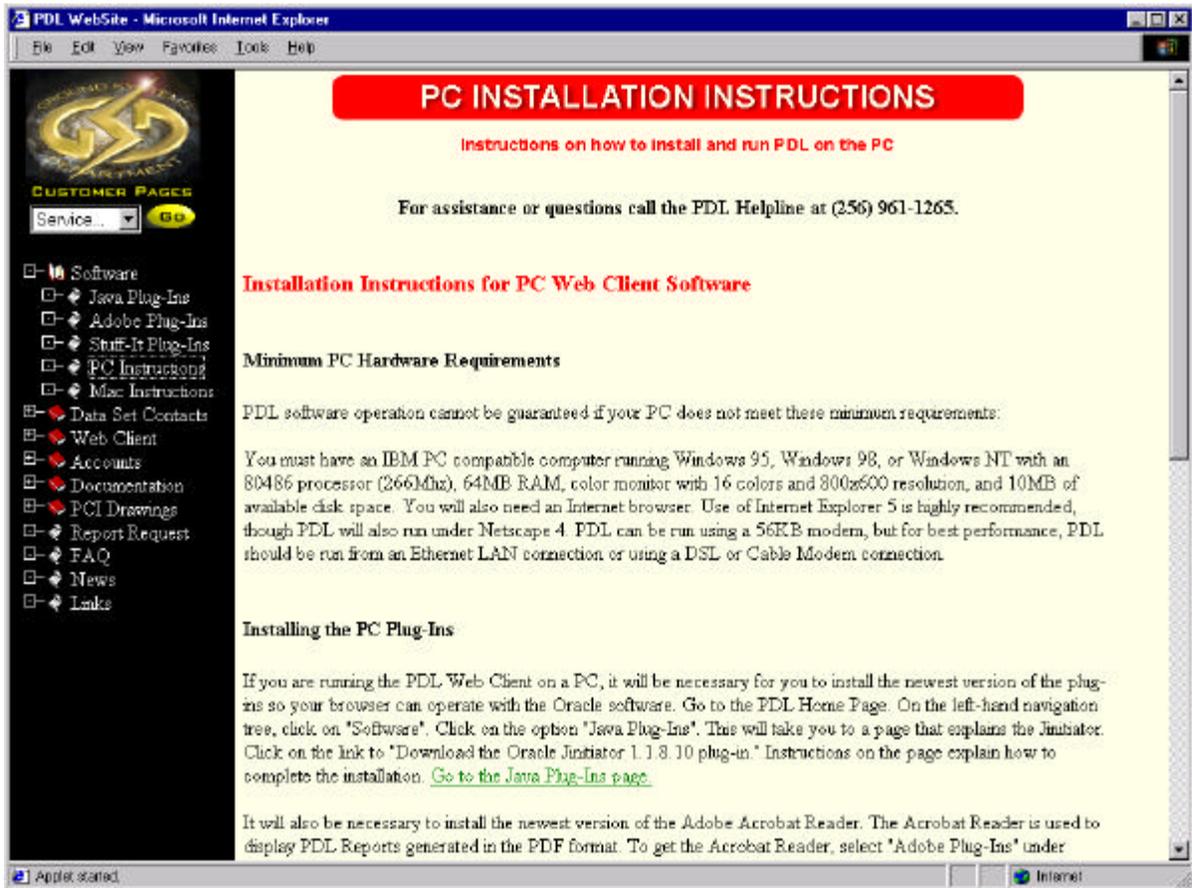


FIGURE 4-5 PC INSTALLATION INSTRUCTIONS PAGE

4.1.1.5 Mac Instructions

The page shown in Figure 4-6 contains basic instructions for installing and running the PDL Web Client on your Mac.

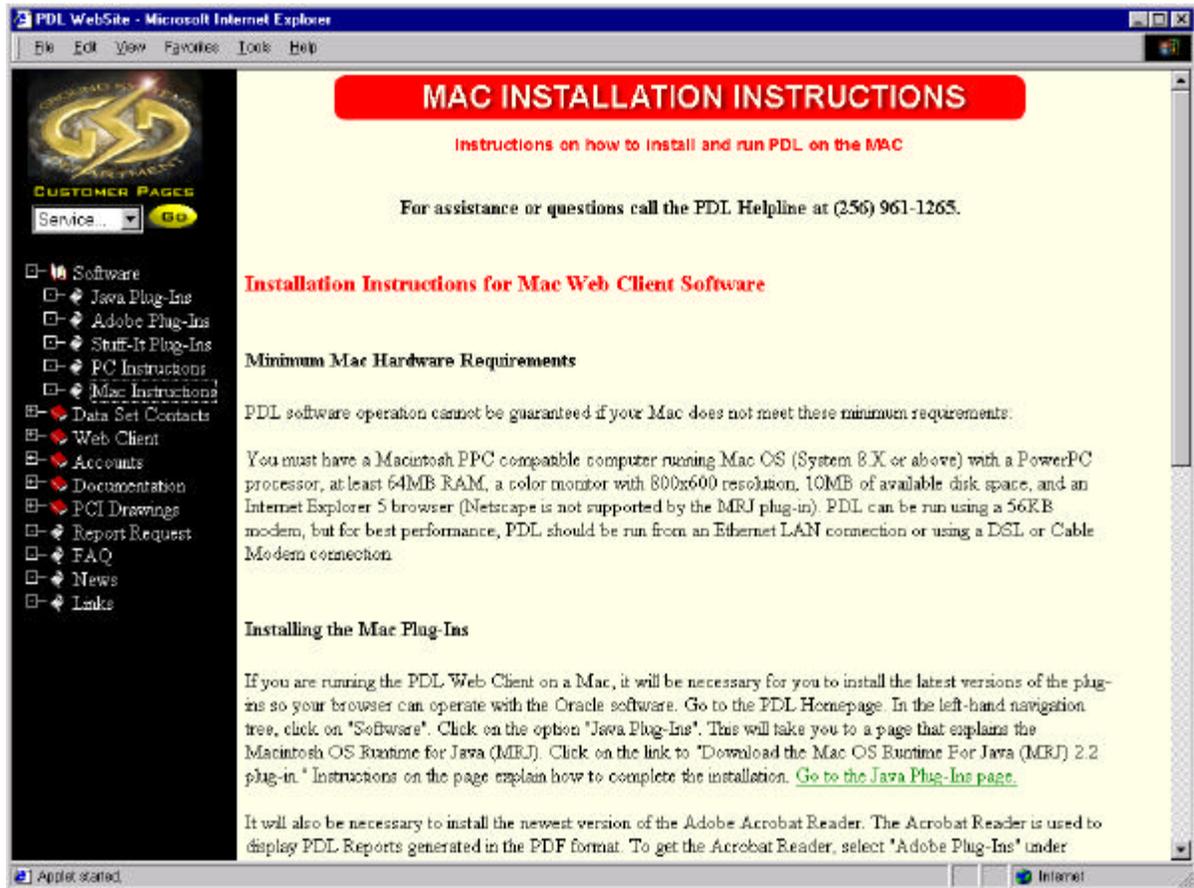


FIGURE 4-6 MAC INSTRUCTIONS PAGE

4.1.2 Data Set Contacts Pages

The *Data Set Contacts* pages are divided between contacts for Express payloads, Pressurized payloads, and contacts for WORF payloads. Contact information includes the name of the data set, the name of the contact, and the contact's phone number. This information is provided as a convenience for current PDL users and for potential PDL users who need more information before requesting a PDL user account. To reach the Data Set Coordinators/Contacts pages, click on the left menu. The Data Set Contacts selection will expand to a selection of either Express payload contacts or Pressurized payload contacts.

Clicking on one of those two menu choices will display the appropriate Data Set Coordinators/Contacts page.

Figure 4-7 shows an example of a sample Data Set Coordinators/Contacts page for Express payloads. Notice the expanded left navigation menu and the selection of the Express Contacts. Because the contacts for payloads frequently change, you should always consult the PDL web pages for the latest contact information.

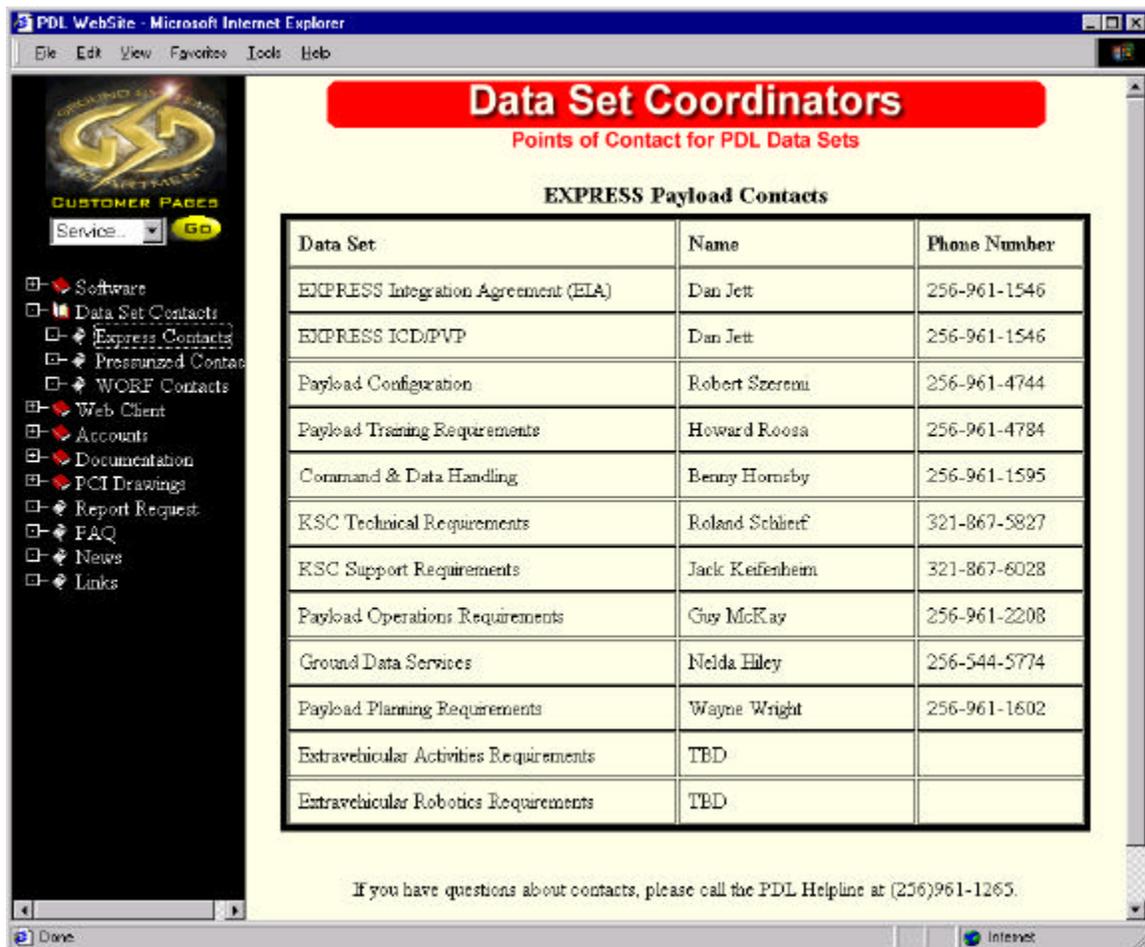


FIGURE 4-7 DATA SET COORDINATORS PAGE

4.1.3 Accounts Request Pages

The *Account Request* pages allow a non-PDL user to request a PDL user account. There are three kinds of PDL accounts: Payload Developer, ISS Integrator, and International Partner. These are discussed in more detail in the following subsections.

4.1.3.1 Account Request – Payload Developer

The Payload Developer Account Request Form should be filled in by people who need to use PDL to load payload development type data for payload integration. Because of the large number of possible payloads, the page is longer than can be displayed on a single screen. Use the scroll bar on the right of the browser window to scroll down through all of the fields on the page. The following three figures combine to make up the Payload Developer Account Request Form.

Figure 4-8 shows the top portion of the Payload Developer Account Request Form. The user should select one or more payloads to which he/she is affiliated. Click the box to the left of the payload name to select it. At least one payload must be selected. Payloads are divided between Express payloads and Pressurized payloads. Payload names are alphabetical within each grouping.

Note: the user may NOT select all payloads. An error condition will occur. The user should select only those payloads to which he/she is affiliated. The NASA appointed point of contact for the selected payload(s) will be contacted for authorization prior to a PDL account being issued to the user.

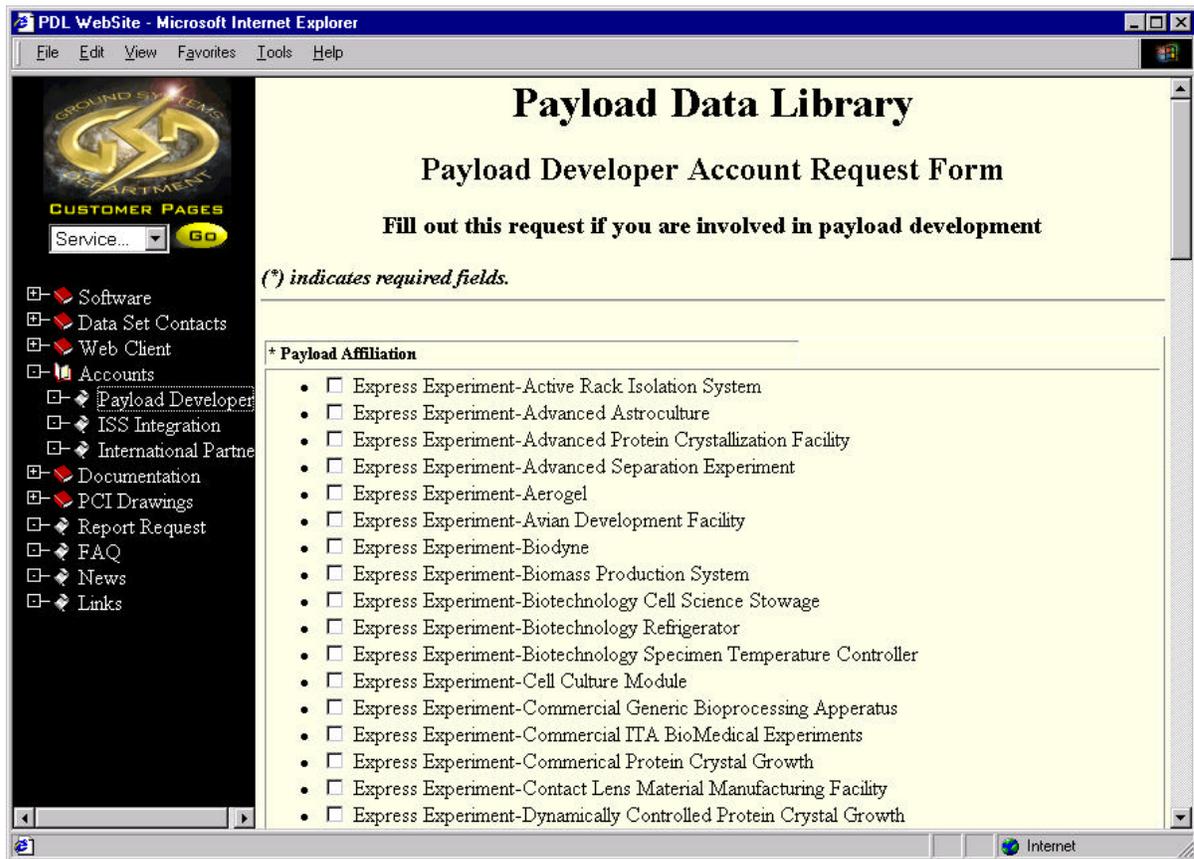


FIGURE 4-8 PAYLOAD ACCOUNT REQUEST, PAYLOAD AFFILIATION

At the bottom of the list of selectable payloads is a field called “Other Payloads.” If the user’s payload does not appear on the page, the user should check the selection box to the left of the label and type the name of the payload into the data entry field. Figure 4-9 shows the “Other Payloads” option at the end of the list of payloads.

Figure 4-9 also shows the next section of the Payload Developers Account Request form, the selection of the user’s Dataset/Discipline. If a user only requires Read-Only access to the payload(s) selected above, click the “If Read-Only access required” box. Otherwise, the user should check one or more boxes corresponding to the user’s area of responsibility.

Note: If access to all datasets/disciplines is requested, the user should check the “All Disciplines” box. The user should not select any other datasets because they are included in the “All”.

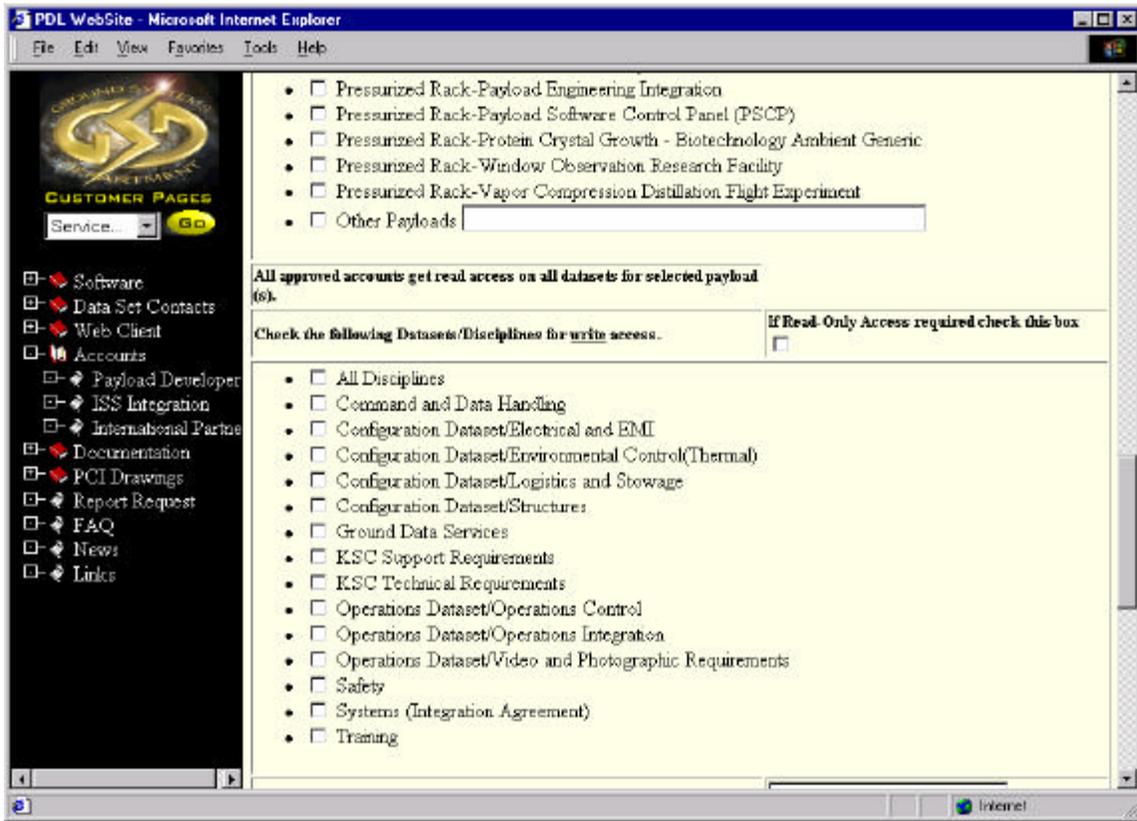


FIGURE 4-9 PAYLOAD ACCOUNT REQUEST, DATASET/DISCIPLINE

Figure 4-10 shows the fields which collect data about the user. Fields which are marked in bold text and by an asterisks (*) are required and must be filled in.

The screenshot shows a Microsoft Internet Explorer browser window titled "PDL WebSite - Microsoft Internet Explorer". The address bar is empty. The page content is a registration form for a "PAYLOAD ACCOUNT REQUEST, USER INFORMATION". On the left side, there is a navigation menu with a logo for "GROUND SYSTEMS DEPARTMENT" and "CUSTOMER PAGES". The menu items include: Software, Data Set Contacts, Web Client, Accounts (with sub-items: Payload Developer, ISS Integration, International Partner), Documentation, PCI Drawings, Report Request, FAQ, News, and Links. The form itself has a yellow background and contains the following fields and sections:

- * First Name: Text input field
- Middle Initial: Text input field
- * Last Name: Text input field
- * Organization: Text input field
- Enter your business address in the fields below (no home addresses please):
- * Internal Mail Code: Text input field
- * Street: Text input field
- * City: Text input field
- * State/Province: Text input field
- * Country: Text input field
- * Zip/Postal Code: Text input field
- * E-Mail Address: Text input field
- * Telephone: Text input field
- Fax: Text input field
- Enter your preferred user account ID. We recommend your first initial and last name (no spaces, no leading numbers):
- * Requested User ID (1st Choice): Text input field
- Requested User ID (2nd Choice): Text input field
- * Which computer platform will you be using?: Radio button selection
 - IBM PC Compatible:
 - Macintosh:
- Submit: Button

FIGURE 4-10 PAYLOAD ACCOUNT REQUEST, USER INFORMATION

Notice that the address to be entered is the user's business address. The Internal Mail Code field is required so it must be filled in. If the user does not have a special code for mail distribution, please enter "None" in this field.

An email address is also required because PDL information messages and system interruption warnings are sent via email. The user is allowed to select an account ID. This makes it possible for the user to have the same ID for PDL as on their local computer network, making it easier to remember. In case that account ID has already been assigned to another user, the user is encouraged to enter a second choice for an ID. At the bottom of the form, the user should select which computer platform they will be using.

After all fields have been entered, the user should click on the *Submit* button to submit the account request. If a required field has been left blank, the user will see an error message reporting which field must be filled in. The user should use the Back key or arrow on their browser to return to the account request page to correct the error.

If all fields have been filled and the account request successfully submitted, a page will be displayed with the message: *“Your Account Request has been submitted. You will be contacted when it is approved. Any questions? Please call the PDL Helpline at (256) 961-1265.”* The NASA approved payload coordinator(s) will be contacted for authorization prior to a PDL account being issued to the user.

4.1.3.2 Account Request – ISS Integrator

The Integration Account Request Form should be filled in by people who need to use PDL to perform ISS integration activities. The following two figures combine to make up the Integration Account Request Form. The scroll bar on the right of the browser window can be used to scroll down through all of the fields on the page.

Figure 4-11 shows the top portion of the Integration Account Request Form. The user should select one or more disciplines or datasets to which he/she is assigned. Click the box to the left of the dataset/discipline to select it. If the user only needs Read-Only Access to PDL, please check the Read-Only box on the right. Otherwise, at least one dataset/discipline must be selected.

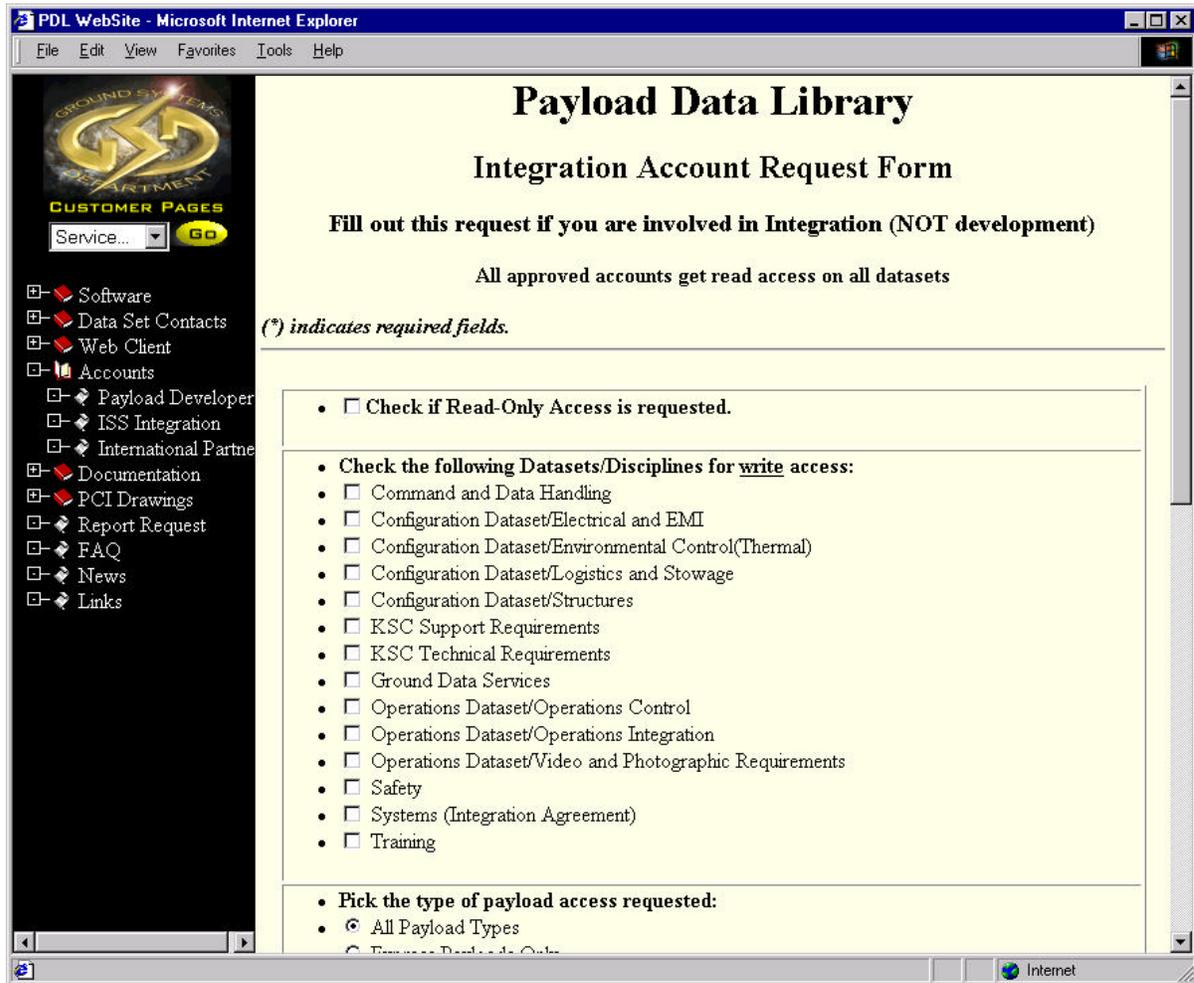


FIGURE 4-11 INTEGRATION ACCOUNT REQUEST, DATASET/DISCIPLINE

Figure 4-12 shows the fields which collect data about the user. Fields which are marked with bold text and by an asterisks (*) are required and must be filled in.

The screenshot shows a web browser window titled "PDL WebSite - Microsoft Internet Explorer". The browser's menu bar includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The page content is divided into a left sidebar and a main form area.

Left Sidebar:

- GROUND SYSTEMS DEPARTMENT logo
- CUSTOMER PAGES
- Service... dropdown menu
- Go button
- Navigation menu with expandable items:
 - Software
 - Data Set Contacts
 - Web Client
 - Accounts
 - Payload Developer
 - ISS Integration
 - International Partner
 - Documentation
 - PCI Drawings
 - Report Request
 - FAQ
 - News
 - Links

Main Form Area:

- Radio buttons: WORF Payloads Only, Combination of Payload Types
- * First Name: [Text Input]
- Middle Initial: [Text Input]
- * Last Name: [Text Input]
- * Organization: [Text Input]
- Enter your business address in the fields below (no home addresses please).
- * Internal Mail Code: [Text Input]
- * Street: [Text Input]
- * City: [Text Input]
- * State/Province: [Text Input]
- * Country: [Text Input]
- * Zip/Postal Code: [Text Input]
- * E-Mail Address: [Text Input]
- * Telephone: [Text Input]
- Fax: [Text Input]
- Enter your preferred user account ID. We recommend your first initial and last name (no spaces, no leading numbers)
- * Requested User ID (1st Choice): [Text Input]
- Requested User ID (2nd Choice): [Text Input]
- * Which computer platform will you be using?
 - IBM PC Compatible:
 - Macintosh:
- Submit button

FIGURE 4-12 INTEGRATION ACCOUNT REQUEST, USER INFORMATION

Notice that the address to be entered is the user's business address. The Internal Mail Code field is required so it must be filled in. If the user does not have a special code for mail distribution, please enter "None" in this field.

An email address is also required because PDL information messages and system interruption warnings are sent via email. The user is allowed to select an account ID. This makes it possible for the user to have the same ID for PDL as on their local computer network, making it easier to remember. In case that account ID has already been assigned to

another user, the user is encouraged to enter a second choice for an ID. At the bottom of the form, the user should click on what kind of system they will be using.

After all fields have been entered, the user should click on the *Submit* button to submit the account request. If a required field has been left blank, the user will see an error message reporting which field must be filled in. The user should use the Back key or arrow on their browser to return to the account request page to correct the error.

If all fields have been filled and the account request successfully submitted, a page will be displayed with the message: *“Your Account Request has been submitted. You will be contacted when it is approved. Any questions? Please call the PDL Helpline at (256) 961-1265.”* The NASA approved data set coordinator(s) will be contacted for authorization prior to a PDL account being issued to the user.

4.1.3.3 *Account Request – International Partners*

The International Partner Account Request Form should be filled in by people located in other countries who need to use PDL to perform payload or integration functions. International Partners are covered under special agreements with NASA. Therefore, all requests by International Partners for PDL accounts must be approved by the ISS Payload Office at Johnson Space Flight Center (JSC). Please allow ample time for the account approval cycle.

The following two figures combine to make up the International Partner Account Request Form. The scroll bar on the right of the browser window can be used to scroll down through all of the fields on the page.

Figure 4-13 shows the top portion of the International Partner Account Request Form. The data entry fields collect contact information about the user. Fields which are marked in bold text and by an asterisks (*) are required and must be filled in.

The screenshot shows a web browser window titled "PDL WebSite - Microsoft Internet Explorer". The main content area has a yellow background and is titled "Payload Data Library" in a large, bold, black font. Below the title is the subtitle "International Partner Account Request Form" and a bold instruction: "Fill out this request if you are an International Partner". A further instruction states: "International Partner account requests will be forwarded to the Payload Office in Houston, Texas at Johnson Space Center". A note in italics says "(*) indicates required fields." The form consists of several input fields: "* First Name", "Middle Initial", "* Last Name", "* Organization", "Enter your business address in the fields below (no home addresses please).", "* Internal Mail Code", "* Street", "* City", "* State/Province", "* Country", "* Zip/Postal Code", "* E-Mail Address", "* Telephone", and "Fax". The asterisk indicates that the first name, last name, organization, internal mail code, street, city, state/province, country, zip/postal code, email address, and telephone fields are required. On the left side of the browser window, there is a navigation menu with a logo for "GROUND SYSTEMS DEPARTMENT" and "CUSTOMER PAGES". The menu items include: Software, Data Set Contacts, Web Client, Accounts, Payload Developer, ISS Integration, International Partner, Documentation, PCI Drawings, Report Request, FAQ, News, and Links. The browser's status bar at the bottom shows "Done" and "Internet".

FIGURE 4-13 INTERNATIONAL PARTNER ACCOUNT REQUEST, TOP

Notice that the address to be entered is the user's business address. Not all fields may be needed for an international address. If a field is required by the form but the user does not have a value for it, please enter "N/A" (Not Applicable) in the field.

Figure 4-14 shows the remaining user informational fields. The page is too large to be displayed on a single screen. Use the scroll bar on the right side of the browser window to reach the lower fields.

The screenshot shows a Microsoft Internet Explorer browser window titled "PDL WebSite - Microsoft Internet Explorer". The address bar is empty. The page content includes a logo for "GROUND SYSTEMS DEPARTMENT" and "CUSTOMER PAGES" with a "Service..." dropdown and a "Go" button. A navigation menu on the left lists various services like Software, Data Set Contacts, Web Client, Accounts, Documentation, PCI Drawings, Report Request, FAQ, News, and Links. The main form area is titled "INTERNATIONAL PARTNER ACCOUNT REQUEST" and contains the following fields:

- * First Name (required)
- Middle Initial
- * Last Name (required)
- * Organization (required)
- Enter your business address in the fields below (no home addresses please).
- * Internal Mail Code (required)
- * Street (required)
- * City (required)
- * State/Province (required)
- * Country (required)
- * Zip/Postal Code (required)
- * E-Mail Address (required)
- * Telephone (required)
- Fax
- Enter your preferred user account ID. We recommend your first initial and last name (no spaces, no leading numbers)
- * Requested User ID (1st Choice) (required)
- Requested User ID (2nd Choice)
- * Which computer platform will you be using?
 - IBM PC Compatible (radio button selected)
 - Macintosh (radio button)

A "Submit" button is located at the bottom of the form. The browser status bar shows "Done" and "Internet".

FIGURE 4-14 INTERNATIONAL PARTNER ACCOUNT REQUEST, BOTTOM

An email address is required because PDL information messages and system interruption warnings are sent via email. The user is allowed to select an account ID. This makes it possible for the user to have the same ID for PDL as on their local computer network, making it easier to remember. In case that account ID has already been assigned to another user, the user is encouraged to enter a second choice for an ID. At the bottom of the form, the user should click on what kind of system they will be using to run the PDL client.

After all fields have been entered, the user should click on the SUBMIT button to submit the account request. If a required field has been left blank, the user will see an error

message reporting which field must be filled in. The user should use the Back key or arrow on their browser to return to the account request page to correct the error.

If all fields have been filled and the account request successfully submitted, a page will be displayed with the message: *“Your Account Request has been submitted. You will be contacted when it is approved. Any questions? Please call the PDL Helpline at (256) 961-1265.”* The NASA Johnson Space Flight Center will be contacted for authorization prior to a PDL account being issued to the international user.

4.1.4 Documentation Pages

The *Documentation* page on the left menu contains links to documentation such as the PDL Users Guide, EIA Blank Book, Generic Payload Verification Plan, and PMIT Special Topics which directly affect PDL functionality. Figure 4-15 shows an example of a document displayed directly in the right frame after being selected

Be aware that larger documents can be slow to display in the right frame of the page. The speed of delivery is dependent on the size of the document, the memory available on the local machine, and the speed of the network connection and the Internet. Please be patient while the hour glass cursor is displayed.

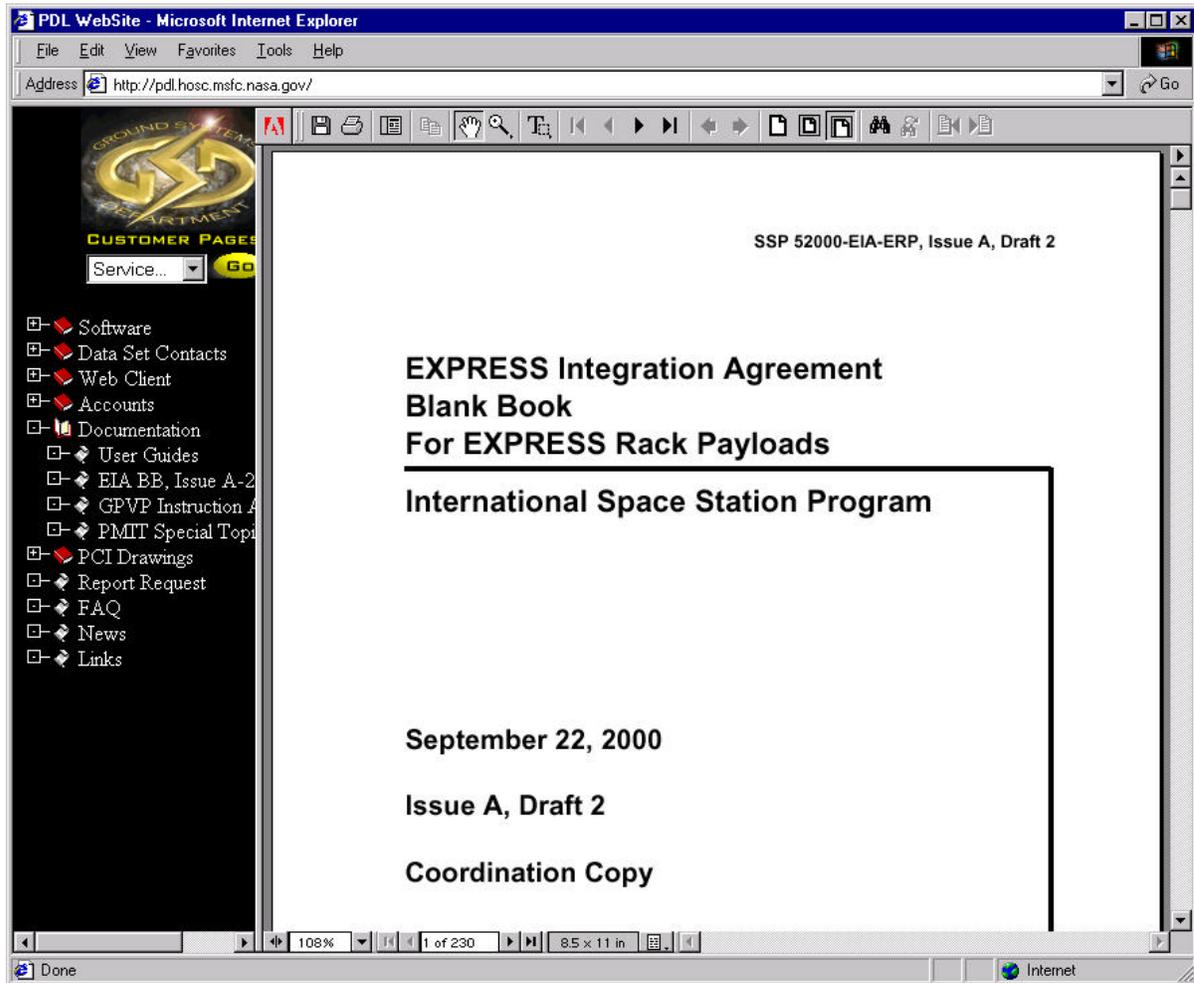


FIGURE 4-15 PDL DOCUMENTATION DISPLAY

Documents which have more than one revision may be moved to a separate page. Figure 4-16 shows the PDL Users Documentation page that collects the various versions of the PDL Users Guide, and a related IDD. Click on the names of documents on this page to display them.

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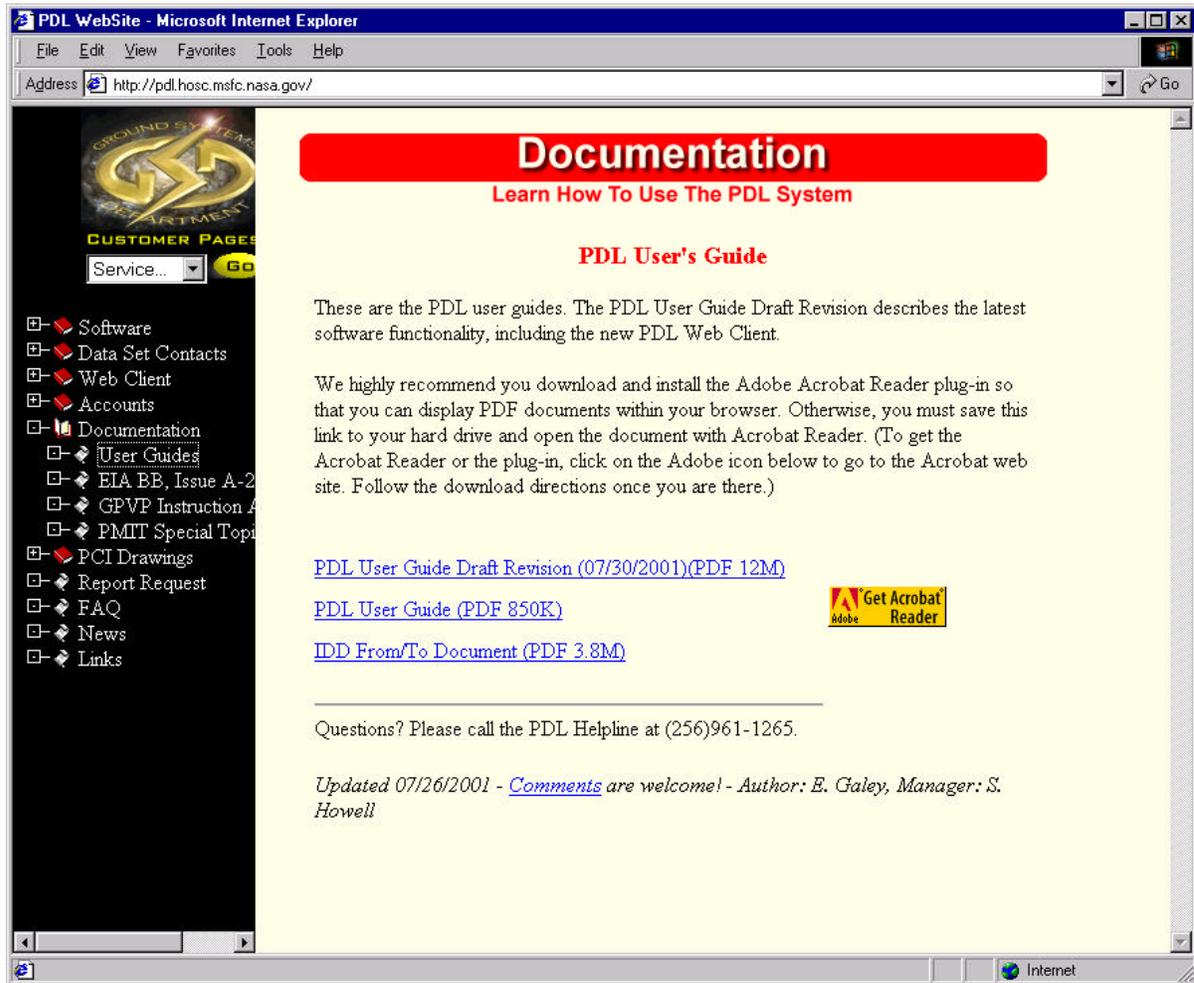


FIGURE 4-16 PDL USER DOCUMENTATION PAGE

Documents are usually available for display in PDF format, though some special purpose documents may be in other formats such as PowerPoint. The PDF format requires the Adobe Acrobat Reader software. To make this easier, the PDL User Documentation page includes a graphic that has a link to take the user to the Adobe web page. Once there, the user should select the option to “Get Acrobat Reader” which is free. Follow the Adobe instructions for downloading and installing the Acrobat Reader software.

Some PC versions of Internet Explorer have difficulty displaying documents across the Internet to the Adobe Acrobat Reader. The symptom of this is the right frame of the browser

paints white but no document or hourglass cursor is displayed within a reasonable amount of time. If this problem occurs, try downloading the document to your local machine. To do this, use the Back Arrow to return to the User Documentation page. Position your cursor over the name of the document and click the right mouse. A menu will be displayed. Select “Save Target As..” A Save As box will appear. Pick a location on your local machine and click the *Save* button. The file will download. Use the Adobe Acrobat Reader to open the document file on your hard drive.

4.1.5 Frequently Asked Questions (FAQ) Page

The *FAQ* page provides a variety of general information about PDL to the casual visitor and the potential PDL user. Figure 4-17 shows an example of the top of the PDL FAQ page. The questions at the top of page highlighted in green are hyperlinks. Click on a question, and the page will jump down to the part of the page where the answer is displayed. Alternately, the visitor can use the scroll bar on the right side of the page to scroll down through all of the questions. After each question is a hyperlink labeled “Back to Top” which will move control back to the questions at the top of the FAQ page.



FIGURE 4-17 FREQUENTLY ASKED QUESTIONS PAGE

4.1.6 PDL News Page

The *PDL News* page is the first page displayed to all visitors to the PDL web site. It contains information about the current version of the PDL software, information about how to set up a Macintosh computer to access PDL, and other general information such as the phone number for the PDL Helpline. Figure 4-18 shows an example of the PDL News page.

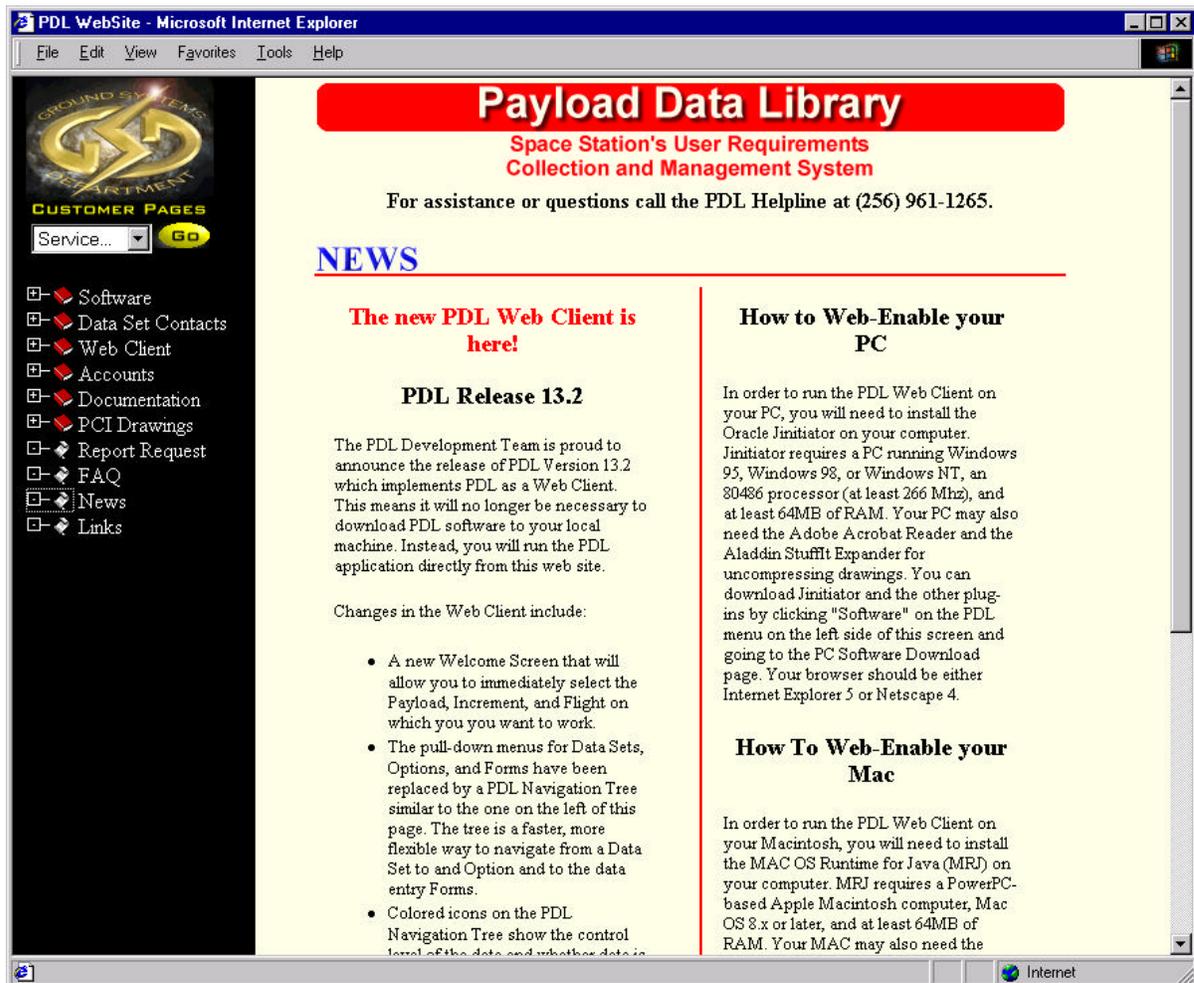


FIGURE 4-18 PDL NEWS PAGE

Not shown in this screen shot is the welcome message from the Ground System's Department manager which reads:

A Note from the MSFC Ground Systems Department Manager:

Ground Systems personnel are committed to meeting the needs of our customers. Our responsible contact personnel for specific products and services will work with you on a

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routine basis to achieve this commitment. If this is not successful for you, feel free to contact me directly. Many thanks.

Ann McNair, Department Manager
email: Ann.McNair@msfc.nasa.gov
Phone: 256-544-2025

4.1.7 Links Page

The *Links* page contains web page addresses for other ISS web pages which might be of interest to the PDL user. Figure 4-19 shows the graphic that is displayed when Links is selected on the left menu. The user can click on the acronym of another ISS-related group or system to jump to their web page. Most of the web pages referenced are public pages viewable by all Internet users. However, some of the links lead to web pages which require an account to access. If an account is required on another system, please contact the owner of that page for information about gaining access to their web site. Contact information is usually available at the bottom of the page.

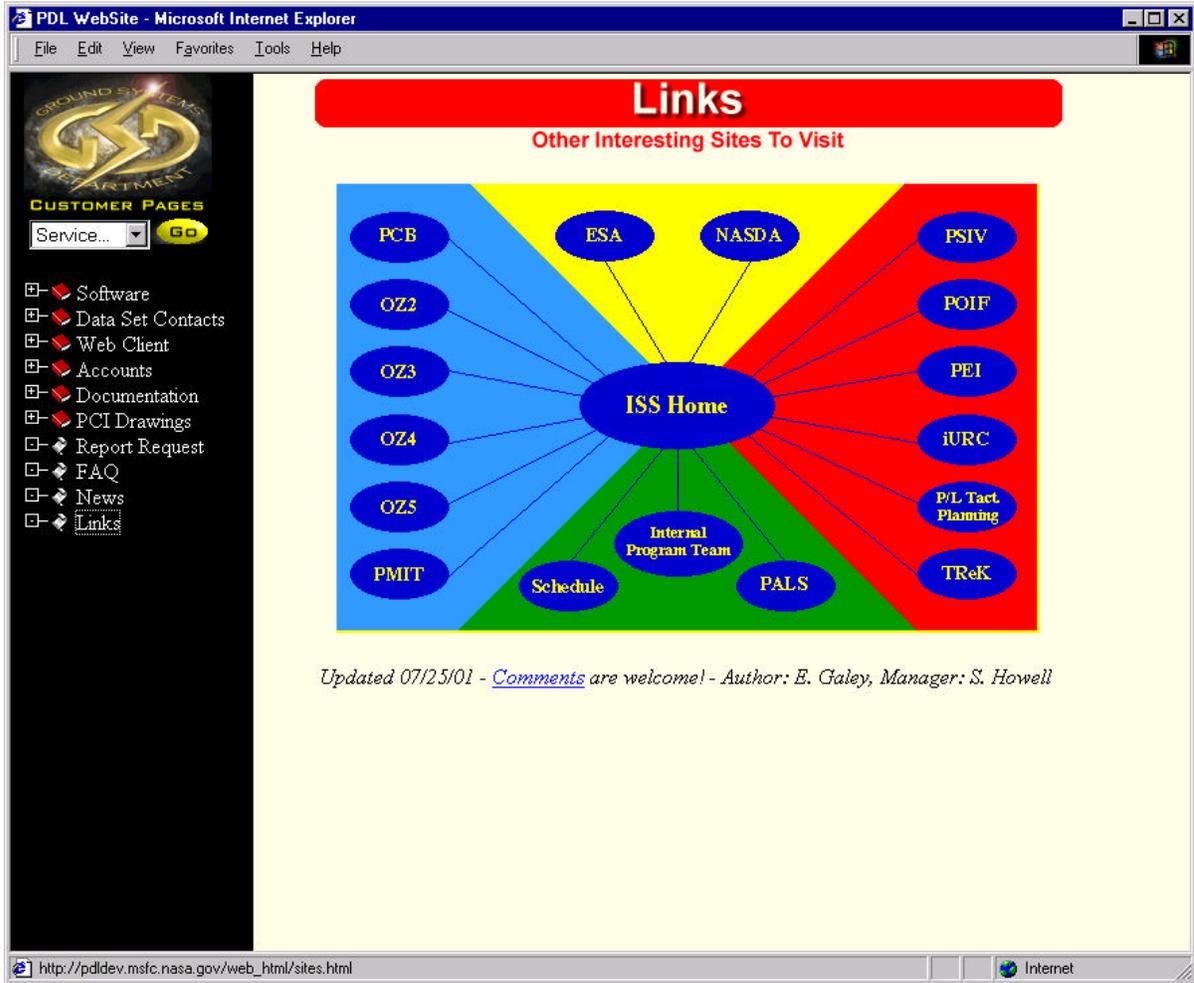


FIGURE 4-19 WEB LINKS PAGE

4.2 PDL USER PAGES

The PDL web site contains many pages which can only be reached by a user who already has a PDL user account. When the user selects one of these private pages, a PDL logon box will appear on top of the current window. The user must enter a PDL user name and password before the web page is displayed. The paragraphs in this section of the document describe the private web pages in PDL.

Figure 4-20 shows the logon box which is displayed when a user selects a private page from the left menu. If the user correctly enters a PDL user name and password combination

and clicks OK, the requested web page will be displayed. If the user does not enter the logon information or if the information is not correct, the logon box will remain displayed. After three incorrect logon attempts or if the user clicks the CANCEL button, the logon box will disappear and the following message will be displayed: *This document is protected. You must send the proper authorization information to access it.*”

The one exception to this logon scheme is when the user starts up the Web Client for either the PC or the Mac. In that case a new screen window is opened and the standard PDL logon form is displayed. See Figure 3-2 for an example of the PDL logon form.



FIGURE 4-20 PDL WEB PAGE LOGON BOX

Notice the small check box below the password line. Clicking on the check box will save the user’s PDL user name and password to a browser file. The next time the user comes to a similar logon box, the user name and password will be filled in automatically. This will happen even if the user has shutdown and restarted the browser. This feature also means that your PDL user name and password will be filled in for any other user who uses your machine and tries to access PDL through the web site. *PDL does not recommend saving your password in this way.*

4.2.1 *Web Client*

The complete PDL web application can be run across the Internet from the PDL web site. This means that the PDL user does not have to have any PDL software on his/her local machine. Simply start a web browser and select either *Run PC Web App* or *Run Mac Web App*, depending on the type of machine the user has. A second window will be started in front of the browser window. This window will contain the logon for the PDL web client (see Figure 3-2). Once the user had logged on to PDL, the PDL application will run in the new window. The web client software is running on the PDL Web Server machine instead of on the user's local machine and requires the Internet connection to function.

Selecting *Getting Started* will give you instructions on getting started on your PC or Mac, running the web client on your PC or Mac, minimum PC and Mac hardware requirements, how to obtain a PDL account and a brief explanation of a what is a web client.

Here are some guidelines for running the PDL web client. The web site starts the PDL web-client in a separate window. Each window that is displayed on the screen requires machine memory. If the PDL application seems slow, try closing other applications that may also be running on the local machine. This will free up machine resources. If the window is too small, part of a PDL form may not display. If the right side of the screen is blank or gray, it is likely that the window in which the PDL web-client is running is not large enough. Click the cursor on the lower right corner of the window and drag it larger. The window should repaints itself with the full PDL form. If only part of a form is displayed, it may be necessary to first use the cursor to drag the window larger and next use the cursor to drag the form within the window larger.

In order to run the PDL web client, it is necessary for the user's local machine be able to support the running of Java applets across the Internet. If the user is having trouble starting the PDL web client, it may be because Java cannot run. PC users will need to install the Oracle J-Initiator software and Mac users will need the MacOS Runtime for Java (MRJ). Refer back to Section 4.1.1 on the how to install the necessary plug-ins.

4.2.2 *PCI Drawings Page*

The Payload Configuration Integration (PCI) Drawings pages allows an authorized PDL user to retrieve non-resident PCI drawings files from the PDL Web Server machine to his/her local disk drive for viewing *NOTE: All drawings and graphics will now be stored in the PDL database so it will no longer be necessary to upload and download non-resident drawings through the PDL web page. The drawing download function is still available so users can retrieve old drawings stored on the PDL web server machine.*

4.2.2.1 Old Download

Old drawings can be reached by selecting *PCI Drawings* and *Old Download* from the left menu. The PDL web logon box shown in Figure 4-20 will be displayed. After the user has successfully logged onto PDL, a screen for Payload Selection will be displayed. Figure 4-21 shows the screen used to pick the payload for the drawing files that will be displayed.



FIGURE 4-21 PCI DOWLOAD, PAYLOAD SELECTION

The user will only be allowed to select a payload from a list of the payloads to which he/she has access. Use the pull-down list to pick the payload. When the correct payload appears in the payload field, click on the *Submit* button.

The drawing File Selection page will display any PCI drawings which are available for download for this payload. If no drawings have been uploaded, a blank list will be displayed. Figure 4-22 shows a sample list of files displayed on the File Selection page.

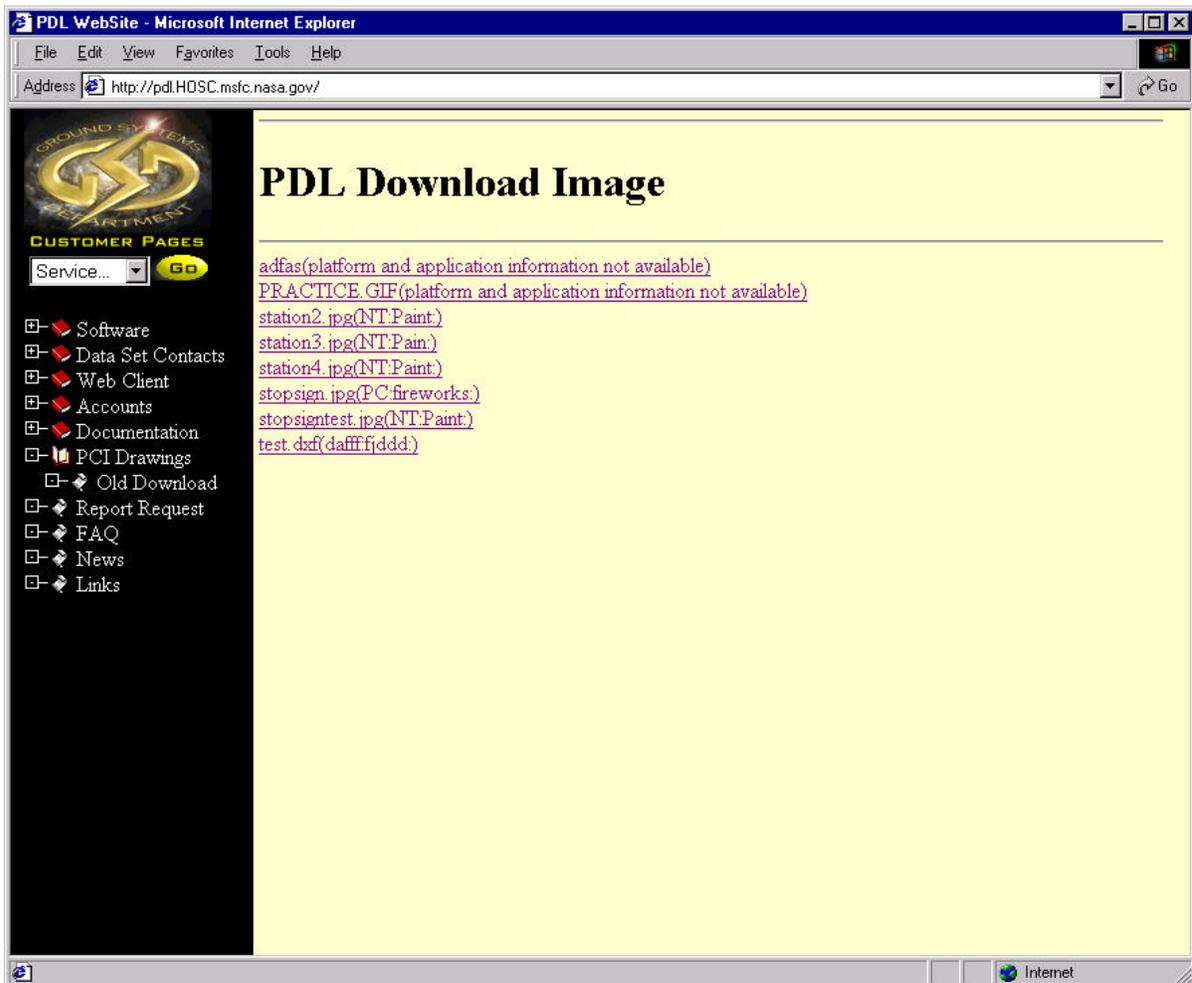


FIGURE 4-22 PCI DOWNLOAD, FILE SELECTION PAGE

To select a drawing for download, click on the name of the drawing. Depending on the operation system of the local computer, the user may be prompted to open the file or to save the file to disk. If this option is offered, always save the file to disk. (Opening large files across the Internet can be very time consuming.) The user will be asked to select a location for the file on the user's local machine. Select the location and click the *Save* button.

For a short file, the file download may appear to take no time at all. For a long file, a progress screen may be displayed. How the user will be notified will vary according to the local operating system and the type of browser. After the transfer has been completed, check the local disk to make certain the file has been saved and that its length is longer than zero bytes. Use the appropriate utility to open the new copy of the file (i.e. AutoCAD for a .dxf file).

The most common error that can occur during the download process is that the file to be downloaded is listed in the PDL database but does not exist on the Web Server machine. This can happen when the drawing upload was unsuccessful but the user did not perform the verification step. Figure 4-23 shows an example of the error page which will be displayed when the browser is Internet Explorer 5.

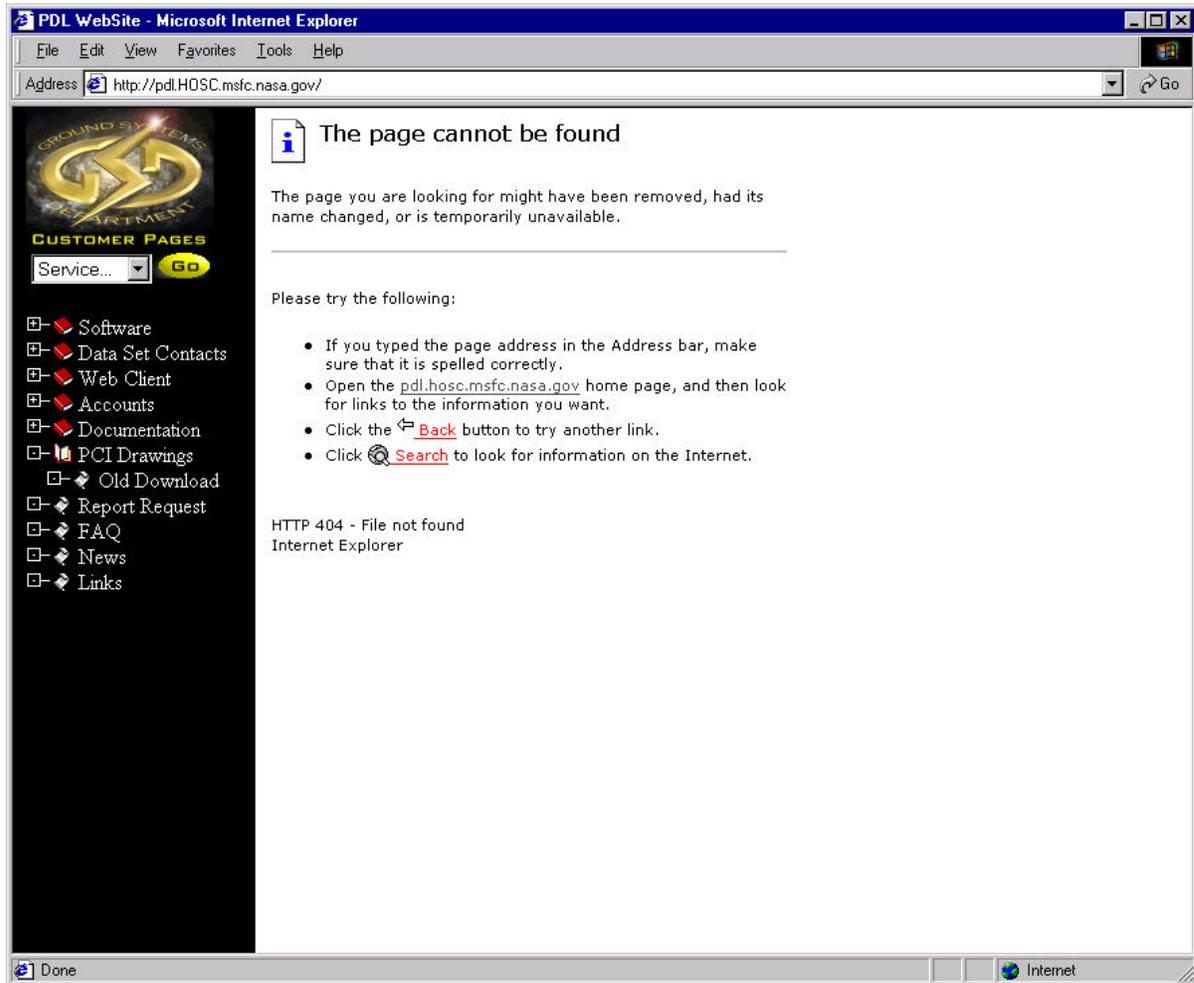


FIGURE 4-23 PCI DOWNLOAD ERROR MESSAGE PAGE

Notice the HTTP 404 message toward the bottom of the error message page. It means that the file requested from the Web Server machine cannot be found to download. This error should be reported back to a contact for the payload so that the file can be re-uploaded to PDL.

If the same error is displayed by a Netscape browser, the browser will return a blank page with the message: "The requested URL was not found." This has the same meaning as the "File not found" in Figure 4-23.

The Netscape error message may say: “The request has invalid syntax.” This error message means the name of the file, as saved in the PDL database, cannot be used to download the file. The file name may contain blanks or special characters. It also means that the drawing file was not successfully uploaded to the Web Server. Try looking for a newer version of the drawing in the PDL database drawings.

4.2.3 Report Request Page

The PDL Reports Request page can be used to request new reports for inclusion in PDL. Figure 4-24 shows the top part of the Report Request Form. Fields which must be filled in are indicated by bold text and by an asterisks (*).

Report Request Forms

Name: Phone#:
Email: Organization:
Report Title:

Make this report available to:
 All
 Payload
 ISS Dataset Team
 ISS Integration

Based on other reports in the same dataset what priority should be put on this report:
 Highest (ASAP)
 High
 Medium
 Low
 No Rush

Needed Date (format 09-JUL-1997):

Report Information Sources:
Data Set(s):
Option(s):
Form(s) (Screen Title(s)):

Fields

Fields	Sort#	Fields	Sort#	Fields	Sort#
<input type="text"/>					
<input type="text"/>					
<input type="text"/>					
<input type="text"/>					
<input type="text"/>					
<input type="text"/>					

(use field labels that are used in the PDL. If field is used for sort, indicate sort order. Make sure the sort value is a number.)

FIGURE 4-24 PDL REPORT REQUEST, TOP

The top of the Report Request page asks for contact information about the user who is submitting the request. This will be used in the event for more information is needed for development.

A Report Title can be entered. Next, the user must then decide what categories of users should have access to this report. For scheduling purposes, the user is asked to prioritize this report. A date must be entered by which this report is needed.

The rest of the report requests information about what should be included in the report and how it should be organized. The user will be asked for the Data Set to which the report pertains. Enter the name of one of the data sets found on the Navigation Tree (see Figure 3-26). For the Option, enter one of the options available on the Navigation Tree after the data set has been selected (see Figure 3-26). In PDL when the user has selected a data set and an option, a list of possible data entry screens becomes visible on the Navigation Tree (see Figure 3-26). One or more of these forms contains the data that should appear in the report. Enter the name of the form(s) in the *Forms(s) (Screen Title(s))* field on the Report Request Form.

Next the user will be asked to enter the data items which should appear in the report. Use the name of the data item as it appears labeled on a PDL form. You can enter a data item field name up to 30 characters long. If the field should be used to organize or sort the report, put a sequence number into the *Sort#* box. If more than one field should be included in the sort (i.e. sort first by Payload and then by Flight), enter the numbers in order by how important the field is to the ordering of the report. Figure 4-25 shows the bottom half of the Report Request page. Use the scroll bar on the right side of the browser window to reach these fields.

The screenshot shows a web browser window titled "PDL WebSite - Microsoft Internet Explorer". The browser's address bar is empty. The page content is a form for "PDL Report Request". On the left side, there is a navigation menu with a logo for "GROUND SYSTEMS DEPARTMENT" and a "CUSTOMER PAGES" section with a "Service..." dropdown and a "Go" button. The menu items are: Software, Data Set Contacts, Web Client, Accounts, Documentation, PCI Drawings, Report Request (highlighted), FAQ, News, and Links. The main form area has a yellow background and is divided into several sections: "Layout" with radio buttons for "Portrait" and "Landscape" (selected); "Selection Criteria (check all that apply)" with checkboxes for "One Payload", "Multiple Payloads", "One Flight", "Multiple Flights", "One Increment", and "Multiple Increments", plus an "Other" text field; "Calculations" with a checkbox for "Summations", a "Specify fields to sum:" text field, a checkbox for "Other", and a "Specify Formula(s):" text field; "Special Formatting" with a checkbox for "Format for inclusion in a standard document", a "Specify Document#" text field, and a "Table#" text field; and a "Notes" section with a large text area. At the bottom of the form is a "Submit" button. A "Notice" at the bottom of the form reads: "Notice: Certain Oracle and data restrictions may make your layout requests unattainable however we will accommodate your request as close as possible". The browser's status bar at the bottom shows "Done" and "Internet".

FIGURE 4-25 PDL REPORT REQUEST, BOTTOM

For the Layout section, click the button to indicate whether the layout of the report should be Portrait (narrow side of paper is up as the report is read) or Landscape (wide side of paper is up).

For Selection Criteria section, click on one or more fields to describe all the possible combinations of payloads, flights, and increments that can be used to select data for this report. If none of these criteria fit the new report, use the Other data entry field to describe how data should be collected for the report. Up to 100 characters of description can be entered.

Sometimes it is necessary for fields to be summed or to have other calculations performed against them. In the Calculation section, if fields should be summed, check the *Summations* box and enter the names of the fields to be summed. If another formula should be applied to certain fields, check the *Other* box and enter the fields and the formula to be used for the calculation. If no summations or calculations need to be performed, check the *None* box.

For the Special Formatting section, if the new report has a required format or is intended for inclusion in a standardized document, please check the *Format for inclusion in a standard document* box. In addition, include the document number where the format can be found and the table number within that document that identifies how the new report should be formatted. If possible, please fax a copy of the standardized format or table to the PDL Fax Number: (256) 544-7960. At the top of the report or in the explanation, please include the tracking number visible on the Report Request Form. The tracking number simplifies matching the fax page to the information entered into the PDL database from the Report Request form. Please check the box on the screen if a fax is being sent to PDL.

Any additional information about the report can be entered in the Notes field. This field has a maximum length of 1000 characters.

When the fields on the Report Request page have been filled in, click on the *Submit* button to send the request to PDL. Please notice the disclaimer at the bottom of the page. PDL will make every effort to accommodate the request, but some reports may be restricted by the data currently being collected in PDL or by limitations imposed by the Oracle database. Every effort will be made to produce the report as requested.

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APPENDIX A
ABBREVIATIONS AND ACRONYMS

APPENDIX A, ABBREVIATIONS AND ACRONYMS

CAD	Computer Aided Design
CDH	Command and Data Handling
CR	Change Request
CSA	Canadian Space Agency
DBA	Database Administrator
E&OI	Engineering and Operations Integration
ECM	Electronic Configuration Management
ECO	Engineering Change Order
ESA	European Space Agency
EVA	Extra Vehicular Activity
EVR	Extra Vehicular Robotics
EXPRESS	EXpedite the PROcessing of Experiments to Space Station
FAQ	Frequently Asked Questions
FTP	File Transfer Protocol
GUI	Graphical User Interface
HOSC	Huntsville Operations Support Center
HTTP	Hyper Text Transfer Protocol
ICD	Interface Control Document
IDD	Interface Definition Document
IP	Internet Protocol
ISS	International Space Station
JSC	Johnson Space Center
KSC	Kennedy Space Center
MAC	Macintosh
MB	Megabyte
MHz	Megahertz
MRJ	MacOS Runtime for Java
MSFC	Marshall Space Flight Center
NASA	National Aeronautics and Space Administration

NASDA	National Space Development Agency of Japan
NET	Network
NT	New Technology
OS	Operating System
PC	Personal/Portable Computer
PCI	Payload Configuration Integration
PD	Payload Developer
PDL	Payload Data Library
POP	Payload Operation Performance
PVP	Payload Verification Plan
RAM	Random Access Memory
RDBMS	Relational Database Management System
SQL	Standard Query Language
SSP	Space Station Program
TCP	Transfer Control Protocol
TIM	Technical Interchange Meeting
UMDB	User Mission Database
URL	Uniform Resource Locator
WWW	World Wide Web