

APPENDIX B

**PRACA DATA ELEMENTS AND DATABASE CODE TRANSLATION
TABLES**

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APPENDIX B

PRACA DATA ELEMENTS AND DATABASE CODE TRANSLATION TABLES

All SSP elements (KSC nonconformance system, GFE PRACA, Orbiter PRACA, MSFC PRACA, and Orbiter FSW) shall use the mandatory set of controlled data elements in Table B.1 to allow PR information to be exchanged between elements and WEBPCASS. Orbiter, GFE, and MSFC shall use the common database translation codes, as defined in Table B.2.

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TABLE B.1.1**FLIGHT SOFTWARE PRACA DATA ELEMENTS**

Reference Number	Element Name	Definition
1	Discrepancy Report (DR) Number	This number should be a six digit number that is identical to the number on the associated DR form.
2	Origination Date	This date should be a six digit date reflecting the date at which the FSW DR management form was written, MM/DD/YY.
3	Revision Date	This date should be a six digit date reflecting the date at which the latest revision to the Shuttle Avionics Software Control Board (SASCB) DR management form revision was written, MM/DD/YY.
4	DR Title	The title should be identical to the title on the associated FSW DR form.
5	Process Escape	Classification of Process Escape. See Appendix C for definition of Process Escape.
6	Software Code	Severity Code: This code indicates the severity of the associated FSW DR. These DR codes are (1, 1N, 2, 2N, 3, 4, or 5) assigned by the contractor DR board.
7	Log Date	This date should be the six digit date reflecting the date that the associated FSW DR was logged into the contractor problem reporting database (CMDB for PASS, etc.), MM/DD/YY.
8	Description of Problem	This field should contain the number and the type of system failures and the requisite operational scenario that caused the software condition to occur. Also, there should be a brief understandable explanation of the associated discrepancy itself.
10	How User Sees Effects	This field summarizes the effects of the associated discrepancy on the Space Shuttle System and should explain how the external user (i.e., ground monitors or crew) would see these effects.
11	Requirement	This field identifies the requirements document and paragraphs where the FSW requirement violations, inadequacies, or references may be found which relate to the associated FSW DR.
12	Principal Functions Affected	All principal functions or functional areas to which the problem is believed to be applicable.
13	Cross References	Program Change Requests (CRs), DRs, or CRs that are related to the problem.
14	Disposition	FSW DR closure codes categorized by either the Space Shuttle flight number and or by the FSW OI (or MEDS VI) in which the associated discrepancy exists. Reference: Closure codes are defined in Appendix C of SCR 89052
15	SASCB Agenda Release Code	Indicates the earliest currently supported released system against which the DR is applicable.
16	Rationale for Disposition	Rationale for the disposition. Acceptability reasons for waivers and reasons behind the schedules for FSW DR fixes are important and should be included.
17	Contact	This field should indicate the responsible analyst and/or associated FSW DR form author.
18	SRE	This field should indicate the initials of the assigned ASO SRE (SASCB responsible engineer).
19	Author	Initiator of original DR.
20	Found by Organization	Reflects the organizational element where the associated DR was found. (Shuttle Avionics Integration Laboratory [SAIL], SMS, etc.)
22	SASCB Date	Date that the latest revision to the DR management form was dispositioned at the SASCB.

TABLE B.1.1

FLIGHT SOFTWARE PRACA DATA ELEMENTS - Concluded

Reference Number	Element Name	Definition
23	Class	Classification of DR N FSW DR - Routine no-fix closure (3A, 4G, etc.) O FSW DR - Waiver (4A, 4B) - no fix planned P FSW DR - Waiver with future fix (2A, 2B) Q FSW DR - Fix (2A, 2B) ASAP - no waiver R FSW DR - Requirements issue (3C, 3D, 3F) S FSW DR - MEDS T TOOL DR U RECON DR
24	Remarks	Used to capture additional information including problems identified as out-of-family occurrences.

TABLE B.1.2

HARDWARE PRACA DATA ELEMENTS

Reference Number	Element Name	Definition	KSC	MSFC	PDSS	GFE
1	Report Number	Report number assigned by the design center, contractor, or KSC.	Yes	Yes	Yes	Yes
2	IFA Number	Official IFA report number assigned by SSP.	Yes	Yes	Yes	Yes
3	Mission Effectivity	STS or mission number, element code, and hardware effectivity.	Yes	Yes	Yes	Not Applicable
4	Project Element	SSP element. Reference: NSTS 08170, Subsystem Codes, element codes.	Yes	Yes	Yes	Yes
5	System	SSP subsystem codes - The subsystem to which the problem is assigned. Reference NSTS 08170.	Yes	Not Applicable	Yes	Yes
6	Date Detected	Date originally detected.	Yes	Yes	Yes	Yes
7	Closed Date	Date the applicable design center or Project Office approved problem resolution.	Yes	Yes	Yes	Yes
8	Location	Site at which the problem was detected or occurred. For tables, reference the following sources: JSC - Orbiter PRACA Requirements (NSTS 37325, JSC Orbiter Problem Reporting and Corrective Action [PRACA] Requirements) GFE - JSC GFE PRACA Requirements (JSC 28035, Johnson Space Center [JSC] Government Furnished Equipment [GFE] Problem Reporting and Corrective Action [PRACA] Requirements) KSC - PRACA SPI QA-001 or 002 MSFC - Operation Plan, Problem Assessment Center	Yes	Yes	Yes	Yes
9	Test/Operation	Test or activity at the time of problem detection. JSC - Orbiter PRACA requirements (NSTS-37325) GFE - JSC GFE PRACA requirements (JSC 28035) MSFC - NSTS 08126, Problem Reporting and Corrective Action (PRACA) System Requirements, Appendix A.2	Not Applicable	Yes	Yes	Yes
10	Detected During	The document type and number describing operation being performed.	Yes	Not Applicable	Yes	Yes
11	Contractor	Contractor/manufacture who built/supplied failed item/component. Reference CAGE codes.	Not Applicable	Yes	Yes	Yes
12	Problem Title	Problem title.	Not Applicable	Yes	Yes	Yes
13	Problem Description	Description of problem as first noted up-to date description of problem.	Yes	Yes	Yes	Yes

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TABLE B.1.2

HARDWARE PRACA DATA ELEMENTS - Continued

Reference Number	Element Name	Definition	KSC	MSFC	PDSS	GFE
14	Part Number/Nomenclature/ Serial Number Classify as one or more: LRU Shop Replaceable Unit (SRU) NCA End Item Model (EIM)	The part number information of the element indenture levels affected by the problem. The part number, nomenclature and serial number must be supplied. KSC does not classify the part number, but does provide LRU/NCA part number when defective part is removed.	Yes	Yes	Yes	Yes
15	Hardware Criticality	Reference NSTS 22206, Requirements for Preparation and Approval of Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL)	Yes	Yes	Yes	Yes
16	Functional Criticality	Reference NSTS 22206	Yes	Yes	Yes	Yes
17	Worst Case Criticality	The worst-case criticality of the LRU or component based on NSTS FMEA/CIL failure modes.	Not Applicable	Not Applicable	Not Applicable	Not Applicable
18	Cause	The event or series of events ultimately responsible for the problem. Reference: JSC - Orbiter PRACA Requirements (NSTS 37325) GFE - JSC GFE PRACA Requirements (JSC 28035) KSC - PRACA Data Code Manual S000006-3 MSFC - NSTS 08126, Appendix A.2	Yes	Yes	Yes	Yes
19	Related Documents Related Document Type Related Document Number Related Document Names	Reference information to documents (waivers, ALERTs, etc.) associated with the identification or resolution of the problem. Documentation type, number, and name must be supplied.	Yes	Yes	Yes	Yes
20	Out-of-Family	Yes/No field designated whether problem is an out-of-family occurrence.	Yes	Yes	Yes	Yes
21	Responsible Organization or Person	Person or organization responsible for report.	Yes	Yes	Yes	Yes
22	Disposition Summary	The failure analysis and resolution of the problem and any action taken to correct the problem.	Yes	Yes	Yes	Yes
23	Subsystem	SSP element subsystem - The JSC subsystem to which the problem is assigned. Reference NSTS 08170.	Not Applicable	Yes	Yes	Yes
24	Orbiter Location	Location on the Orbiter where problem occurred.	Yes	Not Applicable	Yes	Not Applicable
25	Prevailing Condition	Environment type when detected. JSC - Orbiter PRACA Requirements (NSTS 37325) GFE - JSC GFE PRACA Requirements (JSC 28035) MSFC - NSTS 08126, Appendix A.2	Not Applicable	Yes	Yes	Yes

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TABLE B.1.2

HARDWARE PRACA DATA ELEMENTS - Continued

Reference Number	Element Name	Definition	KSC	MSFC	PDSS	GFE
26	FMEA Number	The FMEA number which addresses the failure mode of failed elements/LRU/SRU (to lowest level possible).	Not Applicable	Yes	Yes	Yes
27	Failure Mode	A description of the manner in which an item failed. Reference: JSC - Orbiter PRACA Requirements (NSTS 37325) GFE - JSC GFE PRACA Requirements (JSC 28035) MSFC - NSTS 08126, Appendix A.2 KSC - PRACA Data Code Manual S000006-3	Yes	Yes	Yes	Yes
28	CIL Rationale	Yes/No indicator that tells whether a CIL is effected.	Not Applicable	Yes	Yes	Yes
29	Material Defect A - Defect	Defect - Indicates the defect that resulted in the failure. Reference: JSC - Orbiter PRACA Requirements (NSTS 37325) GFE - JSC GFE PRACA Requirements (JSC 28035) MSFC - NSTS 08126, Appendix A.2	Not Applicable	Yes	Yes	Yes
30	Material Defect B - Material	Material - Indicated the material that failed. Reference: JSC - Orbiter PRACA Requirements (NSTS 37325) GFE - JSC GFE PRACA Requirements (JSC 28035) MSFC - NSTS 08126, Appendix A.2	Not Applicable	Yes	Yes	Yes
31	Recurrence Control Code	Classification of the primary recurrence control actions. Reference: JSC - Orbiter PRACA Requirements (NSTS 37325) GFE - JSC GFE PRACA Requirements (JSC 28035) MSFC - NSTS 08126, Appendix A.2	Not Applicable	Yes	Yes	Yes
32	End-Item Control Number	An end-item control number is a sequential identifier contained in an implementing organization instruction's.	Yes	Yes	Not Applicable	Not Applicable
33	Date Isolated	Date that the problem was isolated.	Yes	Yes	Not Applicable	Not Applicable
34	Date/Time Updated	Date/time of latest status or update.	Yes	Yes	Yes	Yes
35	Contractor Resolution	Date the contractor submitted the full problem resolution.	Not Applicable	Yes	Yes	Yes
36	Expected date or Mission of Interim Disposition to	Date or mission that problem was interim dispositioned to.	Yes	Yes	Yes	Yes
37	Latest Interim Disposition Date	Date that last interim disposition occurred.	Yes	Yes	Yes	Yes

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TABLE B.1.2

HARDWARE PRACA DATA ELEMENTS - Concluded

Reference Number	Element Name	Definition	KSC	MSFC	PDSS	GFE
38	Process Escape	Classification of process escape. See Appendix C for definition of process escape.	Yes	Yes	Yes	Yes
39	Problem Status	Problem Resolution Status Valid Entries: O = Open C = Closed E = Explained D = Deferred V = Void N = Not a problem, not applicable	Yes	Yes	Yes	Yes

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TABLE B.1.3
KSC CAAR DATA ELEMENTS

NSTS 08126 B.1 Ref	Element Name	Definition
1	Report Number	Report number assigned by the design center, contractor or KSC.
2	Mission Effectivity	STS or mission number, element code, and hardware effectivity
3	Project Element	SSP Element Applicable Data Codes: V = Orbiter E = SSME B = SRB R = RSRM T = Tank G = Mobile Support Equipment (KSC) F = Fixed Support Equipment (KSC)
4	Request Date	Date Corrective Action Assistance Request (CAAR) requested.
5	Closed Date	Date the applicable design center or Project Office approved problem resolution.
6	Problem Title	Problem title.
7	Part Number/Nomenclature/Serial Number Classify as one or more: LRU SRU NCA EIM	The part number information of the element indenture levels affected by the problem. The part number, nomenclature, and serial number must be supplied.
8	Cause	The event or series of events ultimately responsible for the problem.
9	Related Documents Related Document Type Related Document Number Related Document Names	Reference information to documents (waivers, ALERTs, etc.) associated with the identification or resolution of the problem. Documentation type, number, and name must be supplied.
10	Responsible Person	Person responsible for the disposition, analysis, of PRs.
11	Orbiter Location	Location on the Orbiter where problem occurred.
12	CIL Rationale	Yes/No indicator that tells whether a CIL is effected.
13	Recurrence Control Code	Classification of the primary recurrence control actions. Reference: KSC – PRACA SPI QA–001 or 002
14	CAAR Description	Description of corrective action request.
15	Date Isolated	Date that the problem was isolated.
16	Response Date	Actionee response date.
17	Verification of Action Date	Date corrective action verified.
18	Corrective Action Verification	Actions taken to verify implementation of corrective action.
19	Verification of Effectiveness Date	Date effectiveness of correction action verified.
20	Verification of Effectiveness	Actions taken to verify effectiveness of correction action.

TABLE B.2

DATABASE CODE TRANSLATION TABLES

PRACA Code List for Test or Operation (Element 9)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
AI	ATI	Acceptance Test Procedure (ATP), initial acceptance testing.
AS	ATS	ATP, not initial acceptance test.
D	DEV	Development test procedure.
F	FLT	Flight (24 hours before launch through post-landing inspections and routine refurbishment, including pre-ATP.)
LF	FDF	Field detected - NSTS 08171, Operations and Maintenance Requirements and Specifications Document, type testing prior to first flight of hardware.
LL	FDL	Field detected - Laboratory type testing/usage (SAIL, bench test, etc.) prior to first flight of hardware.
MI	MFI	Manufacturing (Initial build of hardware only, not routine refurbishment.)
MO	MAN	Maintenance/repair (All after initial manufacturing, including failure investigation/analysis.)
PF	PFF	Field detected - OMRSD type testing subsequent to first flight of hardware.
PL	PFL	Field detected - Laboratory type testing/usage (SAIL, bench test, etc.) subsequent to first flight of hardware.
Q	QAL	Qualification or certification testing (wherever performed).
X	ALE	ALERT (NSTS problem identified through an ALERT.)
ZZ	ZZ	Not a reportable problem.
A	ATP	ATP (Obsolete code for JSC problems after 1981.)
L	FLD	Field detected prior to first flight of hardware (use LF or LL). (Obsolete code for JSC problems after 1981.)
M	MFG	Manufacturing (includes pre-ATP, and overhaul) (Obsolete code for JSC problems after 1981.)
P	PFT	Field detected subsequent to first flight of hardware (use PF or PL). (Obsolete code for problems after 1981.)

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Prevailing Conditions (Element 25)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
AC	ACOUST	Acoustic test.
C	EMI	Electromagnetic Interference (EMI).
CR	CREW	Crew training.
E	ENVIRON- MENT	Environment (salt, fog, humidity, etc.).
FT	FUNCTL TEST	Functional test.
FU	FUNCTL USE	Functional use.
FC	CALIBRATION	Hangar or laboratory calibration.
L	LIFE TEST	Life test.
N	INSPECTION	Inspection (Not necessarily a preplanned inspection - could be casual observation.)
P	PRESSURE	Pressure.
Q	THERMAL VAC	Thermal vacuum.
R	STORAGE	Storage.
S	SHIPPING	Handling, packaging, shipping, transportation or installation.
ST	STRUCT	Structural test.
T	THERMAL	Thermal cycle or soak.
V	VIBRATION	Vibration.
X	ALERT	ALERT report.
ZZ	NO PROBLEM	Not a reportable problem.
F	FUNCTIONAL	Functional test or use. Obsolete code for problems after April 2001.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Failure Mode or Symptom (Element 27)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
EAF	FAILS OFF	Fails off.
EAN	OUTPUT LOSS	No output.
EB	FAILS ON	Fails on.
EC	PREMATURE	Premature or inadvertent output (operation) or shutdown.
ED	DELAYED	Delayed output (operation) or shutdown.
EG	SIG HI OR LO	Signal level HI or LO, or zero-level shift.
EH	BIT ERROR	Digital data error.
EI	HALT/INTRPT	Computer halt/interrupt.
EJ	WAVEFORM	Waveform or bias incorrect (EJ sub-codes available).
EJB	BANDWIDTH	Bandwidth too broad or too narrow.
EJN	ISOLATION	Electrical signal to noise rejection low/signal to noise rejection.
EJR	RADIAT PAT	Antenna radiation pattern error.
EJV	VSWR	Voltage Standing Wave Ratio (VSWR) out of spec, impedance mismatch, return signal loss.
EK	OUT-OF-PHASE	Out-of-phase.
EKS	SYNC LOSS	Loss of electrical signal lock/synchronization.
EL	SHORT	Short, low resistance, low voltage, high current, dielectric withstanding voltage (High Potential [HIPOT]), insulation resistance.
EM	ELECT LEAK	Arcing, corona, or static discharge.
EMI	EMI	EMI condition.
EN	OPEN	Open, high resistance, high voltage or low current.
ER	ERRONEOUS	Erroneous, erratic, intermittent or random output.
ET	MEAS ANOMALY	Measurement anomaly (A more detailed code is used by Orbiter.)
EV	NOT-TO-SPEC	Not to spec (used by MSFC only).
EVJ	BITE IND	Built-in test equipment indicates hardware failure.
EVK	BITE ERROR	Failure in bite circuit (bite on bite).
EVL	FAILURE ID	Failure ID flag indicating instrumentation failed (used by MSFC only).
EVM	CON/MEG FAIL	Continuity/megger failure (used by MSFC only).
EVN	SERV/INT/MIS	Servo interrupt/miscompare (used by MSFC only).
MA	FAILS OFF	Fails to start.
MB	FAILS ON	Fails to stop.
MC	PREMATURE	Premature, fast, premature cutoff, or inadvertent operation.
MD	DELAYED	Delayed or slow operation.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Failure Mode or Symptom (Element 27)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
ME	RANDOM	Random.
MF	INTERMITTENT	Intermittent.
MMB	BIND OR JAM	Binding, jamming, or seizing (includes undesired stiction).
MMR	RUB/FRET	Rubbing or fretting.
MO	VIBRATION	Vibration (used by MSFC only).
MP	FAILS OPEN	Fails open or fails to close (or retract) completely.
MQ	FAILS CLOSED	Fails closed or fails to open (or extend) completely.
MR	TORQUE HI/LO	Output torque high or low.
MS	STRUCT	Structure failure.
MSI	INSULATION	Thermal protection loss, inadequate insulation.
MT	P/T HI OR LO	Temp or pressure high or low.
MU	MECH TOLRNCE	Out of tolerance (functional).
MV	EXT LEAK	External leakage.
MW	INT LEAK	Internal leakage.
MX	FLOW ANOM	Flow or thrusts anomalies.
MXC	FLOW ANOM-CV	Flow anomaly - Cavitation.
UC	UNSAT	Unsatisfactory condition.
ZC	CHICK	This Corrective Action Record (CAR) is a chick and requires final coding upon hen closure.
ZD	DUPLICATE	This problem is a duplicate.
ZT	TRKNG	This CAR is on the tracking list and requires final coding upon closure.
ZZ	NO PROBLEM	Not a reportable problem.
E4	OUTPUT ERROR	Obsolete JSC code for problems after 1981.
E6	OUTPUT LOSS	Obsolete JSC code for problems after 1981.
E7	ELEC'L LOSS	Obsolete JSC code for problems after 1981.
E8	EMI OR EMR	Obsolete JSC code for problems after 1981.
EA	FAILS OFF	Obsolete code for JSC problems after 1981.
EE	RANDOM	Random output (no apparent pattern). Obsolete code for problems after April 2001.
EED	ERRATIC DATA	Output data values erratic. Obsolete code for problems after April 2001.
EES	ERRATIC OP	Output signal erratic due to improper switch operation. Obsolete code for problems after April 2001.
EF	INTERMITTENT	Intermittent output (proper output at times). Obsolete code for problems after April 2001.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Failure Mode or Symptom (Element 27)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
EQ	OUTPUT ERROR	Output present but not correct (no more specific category is applicable). Obsolete code for problems after April 2001.
EVA	VEL LIMIT	Velocity data out of spec. Obsolete code for problems after April 2001.
EVB	RES LIMIT	Resolver data out of spec limits. Obsolete code for problems after April 2001.
EVC	AXIS ALIGN	Gyro/accelerometer axis alignment accuracy/drift error. Obsolete code for problems after April 2001.
EVD	BIAS DRIFT	Gyro/accelerometer bias out of spec/drift/shift. Obsolete code for problems after April 2001.
EVE	SCALE FACTOR	Gyro/accelerometer scale factor out of spec/drift/shift. Obsolete code for problems after April 2001.
EVF	SLEW ERROR	Timing/position failure/error in slewing/torquing inertial platform. Obsolete code for problems after April 2001.
EVG	ANGLE ERROR	Inertial platform gimbal angle out of spec/drift. Obsolete code for problems after April 2001.
EVH	PARAMET DEV	Parameter deviation in excess of 1- or 3-sigma spec limits. Obsolete code for problems after April 2001.
EVP	ELEC TOLRNCE	Out of tolerance (functional). Obsolete code for problems after April 2001.
M9	OP BIND/JAM	Obsolete JSC code for problems after 1981.
MM	BIND OR JAM	Obsolete JSC code for problems after 1981.
Z1	FAILS OFF/ON	Obsolete JSC code for problems after 1981.
Z5	OP ERRATIC	Obsolete JSC code for problems after 1981.

NOTE: E prefix designates failure in an electrical mode.
M prefix designates failure in a mechanical mode.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Defect (Element 29A)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
CE	EXTRA	Detail item or part extraneous, where not required.
CI	CNTM-I	Contaminated from internal source, dirty or wet; inclusion in material; discolorization.
CO	CNTM-E	Contaminated from external source, dirty or wet; inclusion in material; discolorization.
CU	CNTM-U	Contaminated from unconfirmed source, dirty or wet; inclusion in material; discolorization.
CR	CORROD	Corroded, oxidized, pitted, or rusted.
CS	CRACK	Cracked structure.
CX	VOID	Material includes bubbles, holes, or voids; or porosity excessive.
DA	ROUGH	Damaged surface - Abraded, chipped, dinged, gouged, nicked, roughed, scratched, or burrs.
DB	BENT	Damaged shape - Bent, buckled, crimped, collapsed, crushed, deformed, expanded, shrunk or twisted, or overstressed.
DC	BROKEN	Damaged structure (excluding cracks) - Broken, burst, cut, fractured, punctured, ruptured, shattered, split, or torn.
DD	DETACH	Damaged - Material delaminated, detached, flaking, loose, peeling, or separated.
EM	ELADJ	Electrically misadjusted, misaligned, miscalibrated, or mismatched.
EP	EL VAL	Electrical value of item or Electronic, Electrical, Electromechanical (EEE) part found to be inappropriate or incorrect.
ER	EL PIN	(Pin) protruding or recessed.
ES	ELSTRS	Electrically overstressed.
ET	ESD	Damaged by Electrostatic Discharge (ESD).
HD	OVRHTD	Damaged - Burnt, melted, overheated, or scorched.
HS	TEMSEN	Temperature sensitivity affecting function - no more specific classification applies.
MA	ME ADJ	Mechanically misadjusted, misaligned, mispositioned - if not torque or misfit.
MB	TORQUE	Improper torque for threaded assembly.
MC	MISFIT	Clearance excessive or insufficient; structural misfit, mismatched.
MD	M SIZE	Material dimension or weight excessive or insufficient - if not misfit or worn.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Defect (Element 29A)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
ME	WORN	Damaged by erosion, friction, or wear.
ML	AGED	Degraded by age, radiation, or rot; life limit exceeded.
MO	OMITTED	Material or part missing or omitted (oversight in assembly).
MI	INCORRECT	Material or part type inappropriate, incorrect, or mislabeled; wrong part specified or used.
MU	STRESS	Material overstressed/overpressurized (no true defect identified).
MW	MISWIR	Miswired or misrouted.
PZ	EEE	EEE part defect.
PR	WRONG	Wrong EEE part used.
SC	SFTCOD	Software/firmware source coding error.
SR	SFTREQ	Software/firmware requirement incorrect or insufficient.
U	NO TTE/FA	No TTE/Failure Analysis (FA) - Bag and Tag.
XA	NOFA	No failure analysis performed at all.
XB	NOFAP	No failure analysis performed on parts.
XN	NA	No defect applicable.
XU	UNK	Defect unknown - Unexplained anomaly.
ZC	CHICK	This CAR is a chick and requires final coding upon hen closure.
ZD	DUPLICATE	This problem is a duplicate.
ZT	TRKNG	This CAR is on the tracking list and requires final coding upon closure.
ZZ	ZZ	Not a reportable problem.
CN	CONTAM	Contaminated, dirty or wet; inclusion in material; discolorization. Obsolete code for problems after April 2001.
EV	EL VAL	Obsolete code for problems after 1981.
MM	MISSIN	Material or part missing or omitted (oversight in assembly). Obsolete code for problems after April 2001.
MT	TYPE W	Material or part type inappropriate, incorrect, or mislabeled; wrong part specified or used. Obsolete code for problems after April 2001.
PA	ELECLK	Electrical leakage. Obsolete code for problems after April 2001.
PB	HERGRS	Failure of gross hermetic leakage test. Obsolete code for problems after April 2001.
PC	HERFIN	Failure of fine hermetic leakage test. Obsolete code for problems after April 2001.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Defect (Element 29A)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
PE	VOID	Void, hole, hillock. Obsolete code for problems after April 2001.
PF	MIGRTN	Migration of metal in EEE part. Obsolete code for problems after April 2001.
PG	IMG	Intermetallic growth, "purple plague". Obsolete code for problems after April 2001.
PK	PRTCLE	EEE part contaminated with internal particles. Obsolete code for problems after April 2001.
PL	CHEM	EEE part material chemically contaminated internally/externally. Obsolete code for problems after April 2001.
PP	TEMP	Incorrect temperature associated with EEE part process (curing, etc). Obsolete code for problems after April 2001.
PQ	TIME	Incorrect time associated with EEE part process (curing, etc). Obsolete code for problems after April 2001.
PS	OPEN	Open in EEE part circuitry. Obsolete code for problems after April 2001.
PT	SHORT	Short in EEE part internal circuitry. Obsolete code for problems after April 2001.
PU	SMEAR	Material in EEE part smeared. Obsolete code for problems after April 2001.
PX	PRT OK	Problem unconfirmed, part check out OK. Obsolete code for problems after April 2001.
PW	DIMEN	Dimension in EEE part incorrect/wrong size/thick/thin/protruding/recessed. Obsolete code for problems after April 2001.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Material (Element 30B)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
A	CIRC'T	Electrical circuit element(s) - No more specific classification applies.
B	CIRCBDB	Electrical circuit board - No more specific classification applies.
C	EEE	EEE part - capacitor, connector, transistor, diode, integrated circuit, resistor, relay, etc. (Failure Supply Code for Manufacturers Group 59) - No more specific classification applies.
CR	BEAR'G	Defect in bearing/rotor/pivot.
CS	ELECND	Electrically conducting pin, socket (connector) or terminal, see 'E' for JSC.
CT	CRIMP	Defect in crimp (electrical terminations/thermal compression bond).
D	DIE	Active or passive element of an electronic circuit device.
E	EL C/W	Electrical conductor - Circuit breaker, switch contacts, or wipers; connector pin, part lead, or wire, JSC - Electrically conducting connector pin (wire), socket, terminal, or filament.
EC	ELCBLE	Electrical cable.
F	INSUL	Encapsulation, insulation, conformable coating, or potting.
G	SOLDER	Solder.
GS	GROUND	Grounding or shielding.
H	WELD	Braze or weld or metallurgical bond.
J	FINISH	Finish, lacquer, paint, or plating.
K	BOND	Adhesive, chemical bond, or lamination.
L	FASTNR	Fastener - Bolt, nut, cotter pin, rivet, screw tie-down, etc.
M	LINK'G	Mechanism; hydraulic or mechanical drive linkage element(s) - No more specific classification applies.
N	HOLE	Hole, nozzle, orifice, or vent; poppet.
P	SEAL	Diaphragm; gasket, o-ring, or seal.
Q	LUBE	Grease, lubricant, or oil.
R	FLUID	Fluid - Gas or liquid, but not lube.
S	STRUCT	Structural element(s) or material - No more specific classification applies.
T	S'STRT	Substrate material - No more specific classification applies.
U	NO TTE/FA	No TTE/FA - Bag and Tag.
W	RMEDIA	Magnetic or optical recording media.
X	S'WARE	Software or firmware algorithm - No hardware detail applies.
XU	UNK	Material unknown - Unexplained anomaly.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Material (Element 30B)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
Y	OPER'N	Manner or mode of operation or use - No detail applicable.
Z	N/A	No material defect applies.
ZC	CHICK	This CAR is a chick and requires final coding upon hen closure.
ZD	DUPLICATE	This problem is a duplicate.
ZT	TRKNG	This CAR is on the tracking list and requires final coding upon closure.
ZZ	ZZ	Not a reportable problem.
CA	DEVICE	Defect in EEE part subcomponent or structure - no lower classification possible. Obsolete code for problems after April 2001.
CB	EXT LD	Defect in EEE part external lead. Obsolete code for problems after April 2001.
CC	PACKG	Defect in EEE part case/package. Obsolete code for problems after April 2001.
CD	METAL	Defect in EEE part metallization. Obsolete code for problems after April 2001.
CE	COAT'G	Defect in EEE part passivation or glassification coating. Obsolete code for problems after April 2001.
CF	DRESS	Defect in EEE part bond wire dressing. Obsolete code for problems after April 2001.
CG	WIRE	Defect in EEE part internal wire (not bondwire). Obsolete code for problems after April 2001.
CH	CONTCT	Defect in EEE part relay/switch contacts/circuit breaker/potentiometer contacts/wiper. Obsolete code for problems after April 2001.
CJ	PROCSS	Defect in EEE part manufacturing process. Obsolete code for problems after April 2001.
CK	EPOXY	Defect in epoxy material in EEE part (not die attach). Obsolete code for problems after April 2001.
CL	DI ATT	Defect in bonding EEE part die. Obsolete code for problems after April 2001.
CN	SPRING	Defect in spring within EEE part. Obsolete code for problems after April 2001.
CP	BD PAD	Defect in EEE part internal wire bonding pad. Obsolete code for problems after April 2001.
CQ	MARK'G	Defect in EEE part marking/labeling. Obsolete code for problems after April 2001.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Cause (Element 18)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
D	DESIGN	Design - When no more specific sub-code applies.
DH	DES-HDW	-Hardware design.
DHA	DES-HDW-AGE	-Age (time, shelf-life).
DHC	DES-HDW-LIFE	-Life (cycle, operating time).
DHE	DES-HDW-ENVR	-Hardware design environment (chemical or physical) JSC (physical) only.
DHF	DES-HDW-FLOW	-Operational flow.
DHH	DES-HDW-HFAT	-High cycle fatigue.
DHL	DES-HDW-LFAT	-Low cycle fatigue.
DHM	DES-HDW-CHEM	-Operational chemical environment.
DHO	DES-HDW-LOAD	-Overstress/loads (not Externally Induced [EI]).
DHT	DES-HDW-THRM	-Operational thermal environment.
DHV	DES-HDW-VIBR	-Operational vibration.
DF	DES-FRM	Software/firmware design.
E	EXTERNAL	Externally induced.
EIC	EI-CONTAM	Contamination (includes induced).
EMI	EMI	Electromagnetic Interference (EMI).
ES	EI-SHIP	Induced by shipping, transporting, storage (packaging) or handling.
ET	EI-TEST	Induced by test/use (formal ATP, qualification, and subsequent ATP) - When no more specific subcode applies.
ETE	EI-TEST-ENVR	-Environment (chemical or physical) (not contamination).
ETP	EI-TEST-INST	-Instructions, planning, inspection, or procedures.
ETT	EI-TEST-EQUP	-Equipment or tooling (includes GSE).
ETW	EI-TEST-WORK	-Workmanship (includes unauthorized work).
M	MANUF'G	Manufacturing - When no more specific subcode applies.
ME	MFG- ENVR	-Environment (chemical or physical).
MI	MFG- INST	-Instructions, planning, or procedures.
MT	MFG-TOOL	-Equipment or tooling.
MW	MFG- WORK	-Workmanship (includes unauthorized work).
MP	MFG-PRC	-Manufacturing process (except assembly, inspection, and test).
OP	OPERATION	Incorrect/Insufficient maintenance (GFE only).
UF	UA-FLIGHT	Unexplained anomaly in flight hardware.
UN	UA NONFLIGHT	Unexplained anomaly in nonflight/downgraded hardware.
UK	UNK-NO-INV	Failure analysis/investigation not performed.
UT	NO TTE/FA	No TTE/FA - Bag and Tag.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Cause (Element 18)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
ZC	CHICK	This CAR is a chick and requires final coding upon hen closure.
ZD	DUPLICATE	This problem is a duplicate.
ZT	TRKNG	This CAR is on the tracking list and requires final coding upon closure.
ZZ	NO PROBLEM	Not a reportable problem.
DHP	DES-HDW-INST	-Hardware design instructions, planning or procedures - Obsolete code for JSC problems after 1981.
DHW	DES-HDW-WORK	-Hardware design workmanship - Obsolete code for JSC problems after 1981.
DS	DES-SFT	Software design. Obsolete code for problems after April 2001.
EOE	EMI	EMI. Obsolete code for problems after April 2001.
ESE	EI-SHIP-ENVR	-Environment (chemical or physical). Obsolete code for problems after April 2001.
ESP	EI-SHIP-INST	-Instructions, planning, or procedures. Obsolete code for problems after April 2001.
EST	EI-SHIP-EQUP	-Equipment or tooling. Obsolete code for problems after April 2001.
ESW	EI-SHIP-WORK	-Workmanship (includes unauthorized work). Obsolete code for problems after April 2001.
MA	MFG-ASY	-Manufacturing assembly or fabrication. Obsolete code for problems after April 2001.
MAE	MFG-ASY-ENVR	-Environment (chemical or physical). Obsolete code for problems after April 2001.
MAP	MFG-ASY-INST	-Instructions, planning, or procedures. Obsolete code for problems after April 2001.
MAT	MFG-ASY-EQUP	-Equipment or tooling. Obsolete code for problems after April 2001.
MAW	MFG-ASY-WORK	-Workmanship (includes unauthorized work). Obsolete code for problems after April 2001.
MM	MFG-MOV	-Manufacturing moving or transportation (handling). Obsolete code for problems after April 2001.
MME	MFG-MOV-ENVR	-Environment (chemical or physical). Obsolete code for problems after April 2001.
MMP	MFG-MOV-INST	-Instructions, planning, or procedures. Obsolete code for problems after April 2001.
MMT	MFG-MOV-EQUP	-Equipment or tooling. Obsolete code for problems after April 2001.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Cause (Element 18)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
MMW	MFG-MOV-WORK	-Workmanship (includes unauthorized work). Obsolete code for problems after April 2001.
MN	MFG-ISP	-Manufacturing inspection. Obsolete code for problems after April 2001.
MNE	MFG-ISP-ENVR	-Environment (chemical or physical). Obsolete code for problems after April 2001.
MNP	MFG-ISP-INST	-Instructions, planning, or procedures. Obsolete code for problems after April 2001.
MNT	MFG-ISP-EQUP	-Equipment or tooling. Obsolete code for problems after April 2001.
MNW	MFG-ISP-WORK	-Workmanship (includes unauthorized work). Obsolete code for problems after April 2001.
MPE	MFG-PRC-ENVR	-Environment (chemical or physical). Obsolete code for problems after April 2001.
MPP	MFG-PRC-INST	-Instructions, planning, or procedures. Obsolete code for problems after April 2001.
MPT	MFG-PRC-EQUP	-Equipment or tooling. Obsolete code for problems after April 2001.
MPW	MFG-PRC-WORK	-Workmanship (includes unauthorized work). Obsolete code for problems after April 2001.
MT	MFG-TST	-Manufacturing test (pre-ATP). Obsolete code for problems after April 2001.
MTE	MFG-TST-ENVR	-Environment (chemical or physical). Obsolete code for problems after April 2001.
MTP	MFG-TST-INST	-Instructions, planning, or procedures. Obsolete code for problems after April 2001.
MTT	MFG-TST-EQUP	-Equipment or tooling. Obsolete code for problems after April 2001.
MTW	MFG-TST-WORK	-Workmanship (includes unauthorized work). Obsolete code for problems after April 2001.
S	SOFTWARE	Obsolete code for problems after April 2001.
U	UNKNOWN	Cause unknown - Obsolete code for JSC problems after 1981.
UA	UNK-ONE	One time anomaly - Obsolete code for JSC problems after 1981.
UU	UNK-UND	Unknown/undetermined (JSC only) - Obsolete code for problems after 1981.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Continued

PRACA Code List for Recurrence Control (Element 31)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
0	EXPL	Explanation rather than corrective action, or no corrective action planned for all vehicles or flights. If no corrective action, use no additional code.
1	DES	Design change (engineering order release, drawing change, software change, site mandatory retrofit, mod by attrition, etc.).
2	MFG	Manufacturing method, procedure, or process changed.
3	F/TE	Facility, test, or inspection equipment changed.
4	TEST	Test, operating, or inspection procedure changed.
5	TRNG	Training or certification of personnel changed.
6	MNTN	Maintenance changed (other than a change in time or cycle use limit, includes storage).
7	LT/C	Limit time or cycle use of component.
8	SHIP	Packaging, shipping or transportation changed.
9	GSE	GSE changed.
A	PURG	Parts/components purged from inventory.
B	WAIV	None - Waiver.
C	CHICK	This CAR is a chick and requires final coding upon hen closure.
M	MOA	This CAR disposition based on rationale defined in Memorandum of Agreement.
T	TRKNG	This CAR is on the tracking list and requires final coding upon closure.
U	NO FA	No TTE/FA - Bag and Tag.
Z	ZZ	Not a reportable problem.

TABLE B.2

DATABASE CODE TRANSLATION TABLES - Concluded

PRACA Code List for Related Documents (Element 19A)

<u>Code</u>	<u>Output</u>	<u>Definition</u>
AS	ATP-SCREEN	Ref-no is prior ATP-screenable problem like Report - no problem.
A1	ALERT RECVD	ALERT through which the problem was identified.
A2	ALERT SENT	ALERT issued because of this problem.
BX	HEN REPORT	This problem resolved based on problem, Ref-no, of same type JSC - This report documents resolution of problem Ref-no.
C	CIL REF	The initial CIL reference relating to this problem.
CX	CHICK RPT	This report documents resolution of problem Ref-no JSC - Problem resolved based on problem, Ref-no of same type.
EC	CR/ECP/RECP	Change record.
HA	HAZARD RPT	Hazard report cross reference: Use only if no FMEA number exists.
LC	LGC CHN NUM	Logic change number.
M	MOA	This CAR disposition based on rationale defined in Memorandum of Agreement.
MR	MAT REV BRD	MRB directive.
NC	PROB RPT	Initial nonconformance PR.
RE	CROSS-E	Ref-no problem is cross-explained to this problem.
WA	WAIVER	Waiver to SSP requirements not specified by other code.
WC	WAIVER, CIL	Waiver to SSP CIL requirements.
WD	WAD	Work Authorization Document.
WM	WAIVER, OMRSD	Waiver to SSP OMRSD requirements.
XM	EXCEPTION	Exception to SSP OMRSD requirements.
ZA	C/O REVIEW	Closeout received for coordination.
ZB	C/O REJECT	Closeout rejected.
ZZ	PV-FCP	Problem Data System Report verified - Film cartridge page. Obsolete code for problems after April 2001.

NOTE: The MSFC and JSC PRACA databases may contain additional codes/data not listed above. The element project PRACA offices should be contacted for interpretation of this data.