

NTSB

**Aviation Coding
Manual**

CONTENTS

I.	INSTRUCTIONS	1
II.	DEFINITIONS	7
III.	SEQUENCE-OF-EVENTS MATRIX/WORKSHEET	13
IV.	CODES FOR OCCURRENCES (100-430)	14
V.	CODES FOR PHASES OF OPERATION (500-610)	15
VI.	CODES FOR CAUSES, FACTORS, AND OTHER EVENTS:	

CODES FOR SECTION IA

AIRCRAFT STRUCTURE SUBJECTS (10000-11306 & 13000-13014)

DOOR	16
FLIGHT CONTROL SURFACES/ATTACHMENTS	16
FLIGHT CONTROL SYSTEM	17
FUSELAGE	17
LANDING GEAR	18
MISCELLANEOUS, AIRFRAME	18
MISCELLANEOUS, ROTORCRAFT	19
NACELLE/PYLON	19
ROTOR DRIVE SYSTEM	19
ROTOR SYSTEM	20
ROTORCRAFT FLIGHT CONTROL SYSTEM	20
ROTORCRAFT FLIGHT CONTROL	21
STABILIZER	21
WINDOW	21
WING	21

AIRCRAFT SYSTEM SUBJECTS (12000-13110,except 13000-13014)

AIR CONDITION/HEATING/PRESSURIZATION	22
ANTI-ICE/DEICE SYSTEM	22
AUTOPILOT/FLIGHT DIRECTOR	22
COMM/NAV EQUIPMENT	22
ELECTRICAL SYSTEM	23
FIRE EXTINGUISHER	23
FIRE WARNING SYSTEM	23
FLIGHT/NAV INSTRUMENTS	24
HYDRAULIC SYSTEM	24
OTHER SYSTEM(s)	24
OXYGEN SYSTEM	24

POWERPLANT SUBJECTS (14000-16912)

ACCESSORY DRIVE ASSEMBLY	25
BLEED AIR SYSTEM	25
CARBURETOR HEAT/CONTROL	25
COMBUSTION ASSEMBLY	25
COMPRESSOR ASSEMBLY	25
CONSTANT SPEED DRIVE	25
COOLING SYSTEM	26
COWL FLAP CONTROL	26
ENGINE ACCESSORIES	26
ENGINE ASSEMBLY	26
ENGINE INSTALLATION	26
ENGINE INSTRUMENTS	27
EXHAUST SYSTEM	27
FUEL INJECTION CONTROL/SYSTEM	27
FUEL SYSTEM	28
IGNITION SYSTEM	28
INDUCTION AIR CONTROL/SYSTEM	29
LUBRICATING SYSTEM	29
MISCELLANEOUS (Engine)	29
MIXTURE CONTROL	29
OIL COOLER CONTROL	29
PROPELLER CONTROL	30
PROPELLER GOVERNOR CONTROL	30
PROPELLER SYSTEM/ACCESSORIES	30
REDUCTION GEAR ASSEMBLY	30
THROTTLE/POWER LEVER	30
THRUST REVERSER	31
TORQUEMETER SYSTEM	31
TURBINE ASSEMBLY	31
TURBOSHAFT ENGINE	31

MISCELLANEOUS AIRCRAFT/EQUIPMENT SUBJECTS (17000-17710)

AERIAL APPLICATION EQUIPMENT	32
AIRCRAFT PERFORMANCE	32
BALLOON EQUIPMENT	32
BLIMP/AIRSHIP EQUIPMENT	32
FLUID	32
LIGHT(S)	33
MISCELLANEOUS EQUIPMENT/FURNISHINGS	33
TOWING/ADVERTISING/EXTERNAL LOAD EQUIPMENT	33

<u>AIRCRAFT/EQUIPMENT MODIFIERS</u> (1101-1270)	34
(structure/systems/powerplant/misc)	

ATC/WX/ARPT FAC/EQUIP SUBJECTS (18000-19302)

AIR NAVIGATION AIDS	37
APPROACH AIDS	37
CONTROL TOWER	37
METEOROLOGICAL SERVICES	37
MISCELLANEOUS, ATC FACILITY/EQUIPMENT	37
PROCEDURES (ATC)	37
RADAR (ATC)	37
AIRPORT/FACILITIES	38
AIRPORT FIRE/RESCUE SERVICE	38
AIRPORT EQUIPMENT	38

MISCELLANEOUS/PUBLICATION SUBJECTS (21000-21104)

AIRCRAFT MANUALS	38
CHARTS/OTHER MANUALS	38

FACILITY/EQUIP/PUBLICATION MODIFIERS (2100-2127) . . . 39

(ENVIRONMENTAL CONDITIONS)

<u>TERRAIN/RUNWAY CONDITIONS (19200 & 19001)</u>	40
MODIFIERS (2401-2500)	40
<u>OBJECT CONDITIONS (20200)</u>	41
MODIFIERS (2502-2540)	41
<u>WEATHER CONDITIONS (20000)</u>	42
MODIFIERS (2201-2255)	42
<u>LIGHT CONDITIONS (20100)</u>	43
MODIFIERS (2301-2308)	43

CODES FOR SECTION IB

AIRCRAFT/EQUIPMENT PERFORMANCE SUBJECTS (22000-23318)

ANTI-ICE/DEICE SYSTEM	44
AUTOPILOT	44
COMMUNICATION EQUIPMENT	44
ELECTRICAL SYSTEM	44
FIRE EXTINGUISHING EQUIPMENT	44
FLIGHT CONTROLS	44
FUEL SYSTEM	44
HYDRAULIC SYSTEM	44
LANDING GEAR	44
POWERPLANT CONTROLS	44
EMERGENCY EQUIPMENT	45
FLIGHT/NAVIGATION INSTRUMENTS	45
ROTORCRAFT FLIGHT CONTROLS	45
MISCELLANEOUS EQUIPMENT	45

OPERATIONS/ATC/MAINTENANCE SUBJECTS (24000-25000)

AIRCRAFT HANDLING	46
AIRPORT	47
COMMUNICATIONS/INFORMATION/ATC	47
DISPATCH	48
MAINTENANCE	48
METEOROLOGICAL SERVICE	48
PLANNING-DECISION	49
ROTORCRAFT OPERATIONS	50
MISCELLANEOUS	50

PERFORMANCE/OPNS/ATC/MAINT MODIFIERS (3000-3169) . . 51

PERSON-MODIFIERS (Perf/Opns/ATC/Maint) (4000-4144) . 53

CODES FOR SECTION II

DIRECT UNDERLYING SUBJECTS (30000-84200)

AIRCRAFT/EQUIPMENT INADEQUATE	54
AIRCRAFT/EQUIPMENT, INADQT COMPLIANCE DETERMINATION	54
AIRCRAFT/EQUIPMENT, INADEQUATE DESIGN	54
FACILITY INADEQUATE	54
MATERIAL INADEQUATE	54
INFORMATION	54
PROCEDURE INADEQUATE	54

(PERSON-ORIENTED SUBJECTS)

EXCESSIVE WORKLOAD (TASK OVERLOAD)	55
IMPROPER DECISION	55
IMPROPER USE OF EQUIPMENT/AIRCRAFT	55
IMPROPER USE OF PROCEDURE	55
PHYSIOLOGICAL CONDITION	55
CORRECTING LENSES NOT WORN	55
FATIGUE	55
INCAPACITATION	55
PHYSICAL IMPAIRMENT	55
PHYSICAL STRENGTH OVERLOAD	55
SPATIAL DISORIENTATION	55
VISUAL/AURAL DETECTION	55
USE OF UNAPPROVED MEDICATION/DRUG	55
PSYCHOLOGICAL CONDITION	56
QUALIFICATION	56
<u>PERSONS MODIFIERS - DIRECT UNDERLYING</u> (5000-5413)	57

CODES FOR SECTION III

INDIRECT UNDERLYING SUBJECTS (90000-93300)

INADEQUATE SURVEILLANCE OF OPERATION	58
INSUFFICIENT STANDARDS/REQUIREMENTS	58
INADEQUATE CERTIFICATION/APPROVAL	58
INADEQUATE SUBSTANTIATION PROCESS	58
<u>PERSON/INSTITUTION MODIFIERS - INDIRECT</u> (6000-6130)	58

VII. CORRECTION/CHANGE FORM (MEMORANDUM)	59
--	----

PART I - INSTRUCTIONS

Introduction:

The National Transportation Safety Board (NTSB) Coding Manual is a source document for codes to be used in the Board's main frame computer for storage and retrieval of information concerning the findings of aviation accidents. This revision of the coding manual contains suggested changes that were received in the Regional Operations and General Aviation Division (AS-20). Procedures are in effect to update the manual on a periodic basis. Suggestions for changes or corrections should be forwarded to the Senior Analyst(s) in AS-20. Suggestions may be forwarded by using the form at the end of this manual or by telephone.

The codes are normally sent to the main frame computer through a network system by using the ADMS program. Entry of codes may be made by the individual investigator by using his (or her) PC or by personnel in AS-20. A computer matrix is provided in the ADMS program for entry of codes. The codes should be entered in the matrix to correspond with the sequence in which they led to the accident/incident.

Computerized findings are published for each accident and incident in a brief format (Brief-of-Accident or Brief-of-Incident). Each brief includes findings, which are identified in a sequence-of-events as occurrences, phases, causes, factors, and/or events. A probable cause statement is also published to provide a narrative presentation of the NTSB findings.

The codes and respective printout data are listed in the coding manual in an alphabetical order, within the respective categories, rather than in a sequential or number order. Printout data is listed in upper-case letters, whereas explanatory notes (that do not print out) are in parenthesis with lower-case wording.

The previous publication of the this manual was in January 1995. Codes that have been added or changed (since the previous publication) are annotated as follows:

- Pound sign (#) designates a change.
- Plus sign (+) designates an addition.
- Equal sign (=) designates a code for a subject (printout) that was previously used before the previous revision.
- Less-than symbol (<) interim change to previous revision.
- Asterisk (*) references definition in Part II of manual.

General Instructions:

As previously noted, the codes in this manual are intended to be used to describe the sequence-of-events of each accident and/or incident. All entries in the sequence-of-events (and brief narrative) must be substantiated by information that is documented in the Factual Report or is available in other accessible documents or publications.

Multiple occurrences, causes, factors and/or events may be used in each sequence-of-events to describe the findings. Each occurrence is coded separately and a corresponding phase of operation must be entered with each occurrence; as of the date of this publication, only five occurrences can be recorded for each mishap. There must be at least one occurrence and one cause identified with each accident or incident. The occurrences must be chronologically numbered. For accidents with multiple causes, there is no provision to show the magnitude of each cause with respect to the others. Likewise, there is no provision to show the relative magnitude of multiple factors. For retrieval purposes, elements of the probable cause (PC) statement should be coded in the sequence-of-events, if feasible.

The number of findings and the size of the PC statement are limited by the amount of space available on the second page of the computer printout. Depending on the number of occurrences and number of lines used in the probable cause statement, about 15 to 43 causes/factors/events can be listed for any one accident or incident.

The sequence-of-events matrix (see: Sequence-of-Events Worksheet, Part III) contains entry spaces for codes in the following sections:

- (1) IA - Primary Non-Person-Related Findings
(Aircraft/Environment)
- (2) IB - Primary Person-Related Findings
(Operations/Performance)
- (3) II - Direct Underlying Events
- (4) III - Indirect Underlying Events

Each section of the matrix contains columns of spaces. The spaces in the left column of each section are for "subject" codes. The long spaces to the right of the subject spaces are for modifiers/persons. The short spaces in the middle of each section are used to describe whether the subjects are causes or factors by entering "C" or "F" codes. These may be left blank, if the subject is neither a cause nor a factor, but merely an event.

Formerly, the main frame (DEC 10) computer (using System 1022) was programmed to allow entry of restricted information in the data base that would not print out in the briefs. This was accomplished by putting an "X" in the middle space to

denote the restricted information. This information was stored in the computer for use as statistical information only. Currently, there is no requirement for entry of restricted data, and the VAX/MV-4 computer (using System 1032) has not been programmed for entry of this information. The data base, however, still contains restricted information that was previously entered via the DEC 10.

Within each section of the matrix, each line entry must be completed in its entirety; i.e., each subject code must be followed by a modifier and/or person code. Sections IA and IB are used to list the primary events/findings that led to the accident or incident. Sections II and III are used to further define or explain a primary event or finding that is listed in Section IA or IB.

Section IA is used to identify the primary non-people-related findings. It contains columns of spaces to enter non-people-related subjects and modifiers. However, a code is available to allow the modifier to be left blank, if needed. The non-people-related subjects are grouped in the following categories:

- Aircraft systems/components
- Air traffic facilities
- Airport facilities
- Terrain conditions
- Weather conditions
- Light conditions
- Object(s)

Section IB identifies the primary finding(s) that are people related. This section normally contains a subject, modifier, and person, although codes are available for the modifier and person to be left blank. However, the blank code for a person should only be used when no other person code can be supported by the factual report. A blank modifier code is only used in conjunction with a blank person code.

Sections II and III are used for the direct and indirect underlying findings. They are normally coded with a subject and a person (or institution), but codes are available for the person code to be left blank. Any number of underlying findings can be related to a primary finding in Section IA and/or IB. However, underlying findings in Sections II or III should only be used when they are related to a primary finding in Section IA and/or IB.

The computer system was previously programmed so that when more than one finding was entered on the same line, findings in sections/columns to the right would be indented to show a relationship. This feature is no longer available. Print-outs from the codes are now (without indentation), beginning with the first code entered on the left in line one of the matrix followed by those to the right and below.

Mandatory Conventions:

The coding manual is designed to provide a great degree of latitude and flexibility in formulating the findings. However, certain conventions should be followed to logically present some sequences-of-events.

For NTSB retrieval of multiengine aircraft information, the phrase "TOTAL LOSS OF ENGINE POWER" and "PARTIAL LOSS OF ENGINE POWER" are to be used in reference to the specific engine(s) being addressed, rather than to the overall power of the aircraft. Specifically, for a situation involving total loss of power for mechanical reasons in one engine of a multiengine aircraft, the code for that occurrence would be 351 (for "LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALFUNCTION"). Also, codes are provided in the aircraft section to identify the number of engines affected on multiengine aircraft. The following codes are intended for use with multiengine aircraft findings:

- (a) [16905] ONE ENGINE
- (b) [16906] TWO ENGINES
- (c) [16907] THREE OR MORE ENGINES
- (d) [16908] ALL ENGINES

For occurrences involving loss of engine power in multiengine aircraft, one of the above codes would normally be used as the first entry (subject) in the sequence-of-events (in Section IA); an exception would be when the number of engines that lost power was unknown. These (subject) codes should be modified by Code 1220 (blank code), so that no modifier will print out. Typically, losses of power in more than one engine would be coded as separate occurrences, except when more than one engine loses power at the same time for the same reason. If the occurrence resulted in all engines losing power (i.e., fuel exhaustion), then Code 16908 (ALL ENGINES) should be used (even if the aircraft had two or three engines, though there are codes for two and three engines).

For example, consider a turbine disk failure of the No. 1 engine of a Boeing 727 that resulted in a total loss of power of that engine; then shortly thereafter, partial loss of power occurred in the No. 2 and No. 3 engines due to a fuel system problem.

In coding this scenario, there would be two occurrences involving loss of power; i.e. the first occurrence would be coded "LOSS OF ENGINE POWER (TOTAL)-MECH FAILURE/MALFUNCTION." The first subject code for this occurrence would be 16905, (ONE ENGINE), which would be modified by Code 1220 (blank space). Of course, additional findings would follow to describe the appropriate cause(s) and/or factor(s).

The second occurrence would be coded "LOSS OF ENGINE POWER (PARTIAL) - MECHANICAL FAILURE/MALF." The first subject code for the second occurrence would be 16906 (TWO ENGINES) followed by Code 1220 (blank space).

For single-engine aircraft accidents/incidents, there is no reason to provide a code for the number of engine, since "one engine" would be obvious.

A progressive loss of power may be considered a single event. For example, a bearing failure may result in a partial loss of power at first, but the power loss could deteriorate until there was a total loss of power. For all practical purposes, this would be one occurrence.

Whenever an occurrence mandates a forced landing, the next occurrence in the sequence-of-events would normally be "FORCED LANDING" (180). The associated phase of operation will often be "EMERGENCY DESCENT/LANDING" (576), but the phase could be "MANEUVERING - TURN TO LANDING AREA (EMERGENCY)" (583), "EMERGENCY LANDING AFTER TAKEOFF" (575), "EMERGENCY LANDING" (574), or "LANDING" (570). Forced landings are often presented with no other findings listed for that occurrence. However, there are some typical findings that are occasionally used with forced landings, if they are appropriate and substantiated; i.e., "EMERGENCY PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND" if and when appropriate, and "AUTOROTATION - PERFORMED - PILOT IN COMMAND" when a helicopter is involved in an autorotation during a forced landing.

Code 502, "STANDING - STARTING ENGINE(S)," is used for hand propping/runaway accidents. The typical convention for coding this situation would be as follows:

1st Occurrence - MISCELLANEOUS/OTHER (430)
1st Phase - STANDING-STARTING ENGINE(S) (502)
2nd Occurrence - [Usually a collision with object or terrain.]
2nd Phase - [Usually "TAXI" (510), although the aircraft could become airborne before the 2nd occurrence & result in an in-flight collision with terrain or object.]

For occurrences involving carburetor ice, the sequence-of-events should include the environmental condition and the events leading to the situation as well as listing the cause/factor(s). The following is a typical convention for mechanical loss of power due to carburetor heat control failure and subsequent carburetor ice:

LOSS OF ENGINE POWER (TOTAL) - MECH FAILURE/MALE (351)
1. WEATHER - CARBURETOR ICING CONDITIONS (20000/F/2202)
2. CARB HEAT CONTROL - FAILURE, TOTAL (16400/C/1135)
3. FUEL SYSTEM, CARBURETOR - ICE (15109/C/1146)

For nonmechanical loss of power due to improper use of the carburetor heat by the pilot:

LOSS OF ENGINE POWER (TOTAL) - NON-MECHANICAL (353)
1. WEATHER - CARBURETOR ICING CONDITIONS (20000/F/2202)
2. FUEL SYSTEM, CARBURETOR - ICE (15109/C/1146)
3. CARB HEAT - IMPROPER USE OF - PIC (22304/C/3110/4000)

PART II - DEFINITIONS

ABRUPT MANEUVER: An intentional maneuver that directly results in personal injury or aircraft damage.

ALTITUDE DEVIATION, UNCONTROLLED: For an occurrence in which there is a loss of control that results in a loss or gain in the altitude, but recovery is accomplished (i.e., autopilot malfunction of airliner that results in altitude deviation & injury to unbelted occupant).

COLLECTIVE BIAS: A mechanism, system, or function of a helicopter that automatically adjusts engine power to maintain rotor rpm, when an increase or decrease in collective is made. (The mechanism is also known as a throttle/collective correlator box.)

DITCHING: A planned event in which a flight crew knowingly makes a controlled emergency landing in water. (Excludes float plane landings in normal water landing areas.)

DRAGGED WING, ROTOR, POD, FLOAT, OR TAIL: Use as a first occurrence only, when this results in an aircraft accident or incident during taxi, takeoff, or landing. (Not used in conjunction with a hard landing or after a gear collapse or ground loop/swerve.)

DYNAMIC ROLLOVER: Ground rollover mishap of a helicopter, which results from a cumulative effect of dynamic forces. These forces cause a roll reaction that results in the helicopter exceeding its static rollover angle.

ENGINE TEARAWAY: An occurrence in which one or more engines are torn away from an aircraft, but not due to contact with an external object. (Includes tearaway due to internal damage from foreign object damage.)

FORCED LANDING: An emergency landing involving circumstances in which the pilot does not have the option to selectively choose the time and appropriate location for landing. (See "precautionary landing" for circumstances in which the pilot has the time and option to choose an appropriate landing area.)

GEAR COLLAPSE: Collapse of the landing gear due to mechanical failure other than malfunction of the retracting system. When the landing gear collapses as a result of a hard landing, the gear collapse will be the subsequent (second) occurrence.

FIRE/EXPLOSION: Use as an occurrence for fire, explosion, or heavy smoke occurring in flight, and for aircraft fires occurring on the ground, except those resulting from impact.

GEAR RETRACTION: Retraction of the landing gear (on ground or runway) due to malfunction of the retraction system, or due to inadvertent or premature retraction by the crew. (Gear retraction on takeoff will be coded as gear retraction in the takeoff phase, and will not be recorded as a wheels-up landing. Excludes intentional gear retractions.)

GO-AROUND: A maneuver following an uncompleted approach, which involves transition to a climbing flightpath.

GROUND LOOP: An involuntary uncontrolled (abrupt) turn of an aircraft, while moving along the ground (i.e., ground taxiing or moving on the takeoff or landing run).

GROUND RESONANCE: Dangerous natural vibration of a helicopter on the ground, caused by stiffness and frequency of the landing gear legs, amplifying the primary frequency of the main rotor. (Includes the self-excited vibration of a helicopter, occurring whenever the frequency of oscillation of the blades about the lead-lag hinges of an articulated rotor becomes the same as the natural frequency of the fuselage.)

HARD LANDING: Stalling onto or flying into a runway or other intended landing area with abnormally high vertical speed. For rotorcraft, includes "tail-down" landings and those where the main rotor contacts the tail boom on landing.

HEIGHT/VELOCITY CURVE: Fundamental plot of indicated airspeed against altitude, which is included in the helicopter flight manual; indicates region(s) from which safe autorotative descent is possible, normally assuming zero wind, sea level, and maximum takeoff weight.

HELIPAD: Prepared area (of land, water or structure) designated as a takeoff/landing area for helicopters (no facilities other than markings needed); includes truck or trailer that is routinely used as heliport.

HELIPORT: A facility used for operating, basing, housing, and maintaining helicopters.

IN-FLIGHT ENCOUNTER WITH WEATHER: Weather encountered that is not normal to the intended phase of operation. Use as an occurrence only when it leads to an accident or incident. (Excludes: vortex turbulence and operations in normal crosswind or IFR conditions.)

MISSING AIRCRAFT: For purposes of coding, a missing aircraft is one that is presumed to have crashed, and the location of the crash is unknown. If credible witness(es) or pieces of wreckage can reasonably verify the accident and location, then the aircraft would not be considered as missing.

NOSE DOWN: When an aircraft noses down on the ground, water, or runway without going inverted.

NOSE OVER: When an aircraft goes inverted on the ground, water, or runway, while taxiing or on takeoff or landing.

NOTAR SYSTEM: Helicopter "No Tail Rotor" System. (For McDonnell Douglas Helicopters: consists of an enclosed variable pitch fan driven by the transmission, a circulation control tail boom, direct-jet thruster, and vertical stabilizers.)

OCCURRENCE: Distinct major event of relative significance that leads to an accident or incident.

ON-GROUND ENCOUNTER WITH WEATHER: An occurrence involving weather that is not normal to the phase of operation. (Excludes: vortex turbulence, jet/prop blast, and normal IFR or crosswind conditions.)

OVERRUN: The continuation of aircraft movement beyond the end of the runway; i.e., overrunning the intended landing or takeoff area. (Used in takeoff and landing phases.)

PHASE OF OPERATION: The point in aircraft operations during which an occurrence takes place.

PIBAL: Small balloon launched to check wind direction before takeoff of hot air balloon to assist in visualizing ground track relative to anticipated flightpath.

PRECAUTIONARY LANDING: A landing involving a sense of urgency due to an emergency or pending emergency, in which the pilot has the option and time to selectively choose an appropriate landing area.

PROPELLER FAILURE/MALFUNCTION: An occurrence concerning failure or malfunction of a propeller blade, hub, or related part, including separation or overspeeding of a propeller, or failure of a propeller system. (Note: When propeller failure results from engine seizure, crankshaft failure, etc., the occurrence should be coded as an engine failure.)

ROLL OVER: Refers to rotorcraft only. Includes tilting with the main rotor blades striking the ground.

ROTOR FAILURE/MALFUNCTION: An occurrence concerning failure or malfunction of a rotor blade, hub, or related part, including separation or overspeeding of a rotor or failure of the rotor drive system.

SETTLING WITH POWER: A condition of helicopter power settling, in which hover power required exceeds power available, normally resulting from an attempt to hover out of ground effect with insufficient power available to compensate for elevation, temperature, and/or humidity.

UNAPPROVED PART: A part, component, or material that has not been manufactured in accordance with the approval procedures in FAR 21.305 or repaired in accordance with FAR Part 43; does not conform to an approved type design; or does not conform to established industry or U.S. specifications (standard parts). Examples of an unapproved part include, but are not limited to: (1) Counterfeit or fraudulently marked parts, components, or materials; (2) Parts shipped directly to users by a manufacturer, supplier, or distributor who does not hold, or operate under the authority of, a production approval for the part; and (3) Parts that have been maintained or repaired and returned to service by persons or facilities not authorized under FAR Parts 43 or 145.

UNDERSHOOT: A condition that occurs during an approach to landing that results in an inadvertent landing or contact with the ground or an object short of the runway or intended landing area, normally due to misjudgment of distance, speed, and/or altitude on final approach. For IFR approaches, an undershoot will occur only after the field or intended landing area is in sight. An undershoot will always be followed by a subsequent occurrence; i.e., in-flight collision with object or terrain, etc. (Does not include occurrences in which the aircraft could not have reached the intended landing area; i.e. after loss of engine power.)

VORTEX RING STATE: An area of nonuniform and unsteady airflow around a rotating main rotor or tail rotor in which the rotor is affected by an induced velocity of airflow that approaches or exceeds the airflow being produced by the affected rotor. It is characterized by a sudden requirement for increased power and/or rotor pitch when airflow from the affected rotor is forced back through and around the rotor.

WHEELS-UP LANDING: Code as an occurrence when the landing gear is not lowered and locked before contact with the ground/runway during a landing. (Excludes inadvertent retraction on the ground and retractions due to failure or malfunction of the gear assembly and/or retracting mechanism. Includes intentional wheels-up landing and inability to extend the gear due to malfunction of the gear extension system.)

V_{LOF}	<u>"Lift-off speed"</u>
V_{MCG}	<u>"Minimum control speed on the ground"</u> The minimum speed at which, the critical engine having been made suddenly inoperative at that speed and having been recognized by the pilot, it is possible to maintain control of the airplane with the engine still inoperative, using primary aerodynamic controls alone, and thereafter maintain a straight path parallel to that originally intended.
V_{MCA}	<u>"Minimum control speed"</u> The minimum speed at which, when the critical engine is suddenly made inoperative at that speed, it is possible to recover control of the airplane with the engine still inoperative and to maintain it in a straight flight at a speed, either with zero yaw or with an angle of bank not in excess of 5°.
V_{YSE}	<u>"Best rate-of-climb single-engine speed"</u>
V_{XSE}	<u>"Best angle-of-climb single-engine speed"</u>
V_S	<u>"Stalling speed"</u> The minimum speed in flight at which the airplane can develop a lift equal to the weight of the airplane.
V_{SO}	<u>"The power off stall speed"</u> or minimum steady flight speed in the landing configuration.
V_{FE}	<u>"Maximum flap extended speed"</u>
V_{LO}	<u>"Maximum landing gear extension/retraction speed"</u>
V_{LE}	<u>"Maximum landing gear extended speed"</u>
V_A	<u>"Design maneuvering speed"</u> The maximum speed for which the aircraft is designed for full abrupt control deflection without incurring structural damage.
V_{MO}	<u>"Maximum operating limit speed"</u>
V_{NE}	<u>"Never-exceed speed"</u>
V_{REF}	<u>"Landing approach speed"</u> The indicated airspeed that the aircraft should be at 50 feet above the landing area in the landing configuration. ($1.3 \times V_{SO}$)
V_R	<u>"Rotation speed"</u>
V_{TOSS}	<u>"Takeoff safety speed"</u> (Category A helicopter)

- V₁** "Takeoff decision speed" (Formerly denoted as critical engine failure speed.) The speed at which, should the critical engine fail, the pilot could elect to abandon the takeoff or continue.
- V₂** "Takeoff safety speed" A reference speed obtained after lift-off at which the required one-engine-inoperative climb performance can be achieved.
- V_{2MIN}** "Minimum takeoff safety speed" ($1.15 \times V_S$ for two and three engine propeller-driven aircraft or $1.10 \times V_S$ for four engine propeller-driven aircraft or $1.10 \times V_{MCA}$, whichever is greater.)

PART III - SEQUENCE-OF-EVENTS MATRIX/WORKSHEET

Docket Number: _____

NTSB ID Number: _____

Occurrence # _____

	IA			IB			II				III		
	PRIMARY NON-PERSON RELATED SUBJECT	C/F	PERSON MODIFIER	PRIMARY RELATED SUBJECT	C/F	MODIFIER	DIRECT PERSON	UNDERLYING SUBJECT	C/F	INDIRECT UNDERLYING PERSON	SUBJECT	C/F	PERSON
1.	_____	___	_____	_____	___	_____	_____	_____	___	_____	_____	___	_____
2.	_____	___	_____	_____	___	_____	_____	_____	___	_____	_____	___	_____
3.	_____	___	_____	_____	___	_____	_____	_____	___	_____	_____	___	_____
4.	_____	___	_____	_____	___	_____	_____	_____	___	_____	_____	___	_____
5.	_____	___	_____	_____	___	_____	_____	_____	___	_____	_____	___	_____
6.	_____	___	_____	_____	___	_____	_____	_____	___	_____	_____	___	_____
7.	_____	___	_____	_____	___	_____	_____	_____	___	_____	_____	___	_____

PART IV - CODES FOR OCCURRENCES

100 ABRUPT MANEUVER*
130 AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION (incl'd inflt brkup)
131 PROPELLER FAILURE/MALFUNCTION
132 ROTOR FAILURE/MALFUNCTION (main or tail rotor of helicopter)
110 ALTITUDE DEVIATION, UNCONTROLLED (i.e.; after auto-plt malfunction)
120 CARGO SHIFT
140 DECOMPRESSION
150 DITCHING*
160 DRAGGED WING, ROTOR, POD, FLOAT OR TAIL/SKID*
355 ENGINE TEARAWAY
170 FIRE/EXPLOSION
172 EXPLOSION
171 FIRE
180 FORCED LANDING
190 GEAR COLLAPSED
194 COMPLETE GEAR COLLAPSED
191 MAIN GEAR COLLAPSED
192 NOSE GEAR COLLAPSED
195 OTHER GEAR COLLAPSED
193 TAIL GEAR COLLAPSED
198 GEAR RETRACTION ON GROUND*
200 HARD LANDING
210 HAZARDOUS MATERIALS LEAK/SPILL (fumes/smoke therefrom)
220 IN FLIGHT COLLISION WITH OBJECT (object modifiers, 20200 series)
230 IN FLIGHT COLLISION WITH TERRAIN/WATER (trrn modfrs, 19200 series)
231 WHEELS DOWN LANDING IN WATER
232 WHEELS UP LANDING
240 IN FLIGHT ENCOUNTER WITH WEATHER* (wx modifiers, 20000 series)
250 LOSS OF CONTROL - IN FLIGHT (includes stall, spin, vmc roll, & inability to ctl acft after becoming spatially disoriented)
260 LOSS OF CONTROL - ON GROUND/WATER (excludes intentional gnd loop)
350 LOSS OF ENGINE POWER (includes loss of power for unknown reason)
352 LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
354 LOSS OF ENGINE POWER(PARTIAL) - NONMECHANICAL
351 LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALFUNCTION
353 LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
270 MIDAIR COLLISION (when both aircraft involved are airborne)
271 COLLISION BETWEEN AIRCRAFT (OTHER THAN MIDAIR) (excludes unoccupied acft)
420 MISSING AIRCRAFT*
430 MISCELLANEOUS/OTHER
280 NEAR COLLISION BETWEEN AIRCRAFT
290 NOSE DOWN*
300 NOSE OVER*
310 ON GROUND/WATER COLLISION WITH OBJECT (obj mod, 20200 series)
320 ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER (trrn/19200 series)
330 ON GROUND/WATER ENCOUNTER WITH WEATHER* (wx mod, 20000 series)
340 OVERRUN*
360 PROPELLER BLAST OR JET EXHAUST/SUCTION
370 PROPELLER/ROTOR CONTACT TO PERSON
380 ROLL OVER (normally associated with helicopter)
390 UNDERSHOOT*
400 UNDETERMINED
410 VORTEX TURBULENCE ENCOUNTERED

* See definition
+ Denotes an addition
Denotes a change
= Code that was previously used
< Interim change to previous revision

PART V - CODES FOR PHASES OF OPERATION

500 STANDING
501 STANDING - PRE-FLIGHT
502 STANDING - STARTING ENGINE(S)
503 STANDING - ENGINE(S) OPERATING
504 STANDING - ENGINE(S) NOT OPERATING
505 STANDING - IDLING ROTORS
510 TAXI (includes runaway while hand-propping)
511 TAXI - PUSHBACK/TOW
512 TAXI - TO TAKEOFF
513 TAXI - FROM LANDING
514 TAXI - AERIAL (includes air/hover taxi)
520 TAKEOFF (modify with operational code 24563, if on touch-&-go)
523 TAKEOFF - ABORTED
522 TAKEOFF - INITIAL CLIMB (to 1st power reduction or pattern altitude; includes crosswind leg)
521 TAKEOFF - ROLL/RUN (ground or water)
530 CLIMB
531 CLIMB - TO CRUISE
540 CRUISE (includes low altitude straight and level flight)
541 CRUISE - NORMAL
550 DESCENT
551 DESCENT - NORMAL
552 DESCENT - EMERGENCY (plt initiated; i.e., after decompression)
553 DESCENT - UNCONTROLLED
560 APPROACH
561 APPROACH - VFR PATTERN - DOWNWIND
562 APPROACH - VFR PATTERN - BASE TURN
563 APPROACH - VFR PATTERN - BASE LEG/BASE TO FINAL
564 APPROACH - VFR PATTERN - FINAL APPROACH
566 APPROACH - IAF TO FAF/OUTER MARKER (IFR)
567 APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)
568 APPROACH - CIRCLING (IFR) (in conjunction with IFR approach)
569 MISSED APPROACH (IFR)
565 GO-AROUND (VFR) (before touchdown)* (see 573 for after touchdown)
570 LANDING (modify with operational code 24563, if touch-&-go)
573 LANDING - ABORTED (balked - after touchdown)
571 LANDING - FLARE/TOUCHDOWN
572 LANDING - ROLL
574 EMERGENCY LANDING
575 EMERGENCY LANDING AFTER TAKEOFF (i.e., forced lndg after tkof)
576 EMERGENCY DESCENT/LANDING (i.e., with forced landing, except after takeoff or during landing approach)
580 MANEUVERING (includes buzzing)
581 MANEUVERING - AERIAL APPLICATION (includes swath run)
582 MANEUVERING - TURN TO REVERSE DIRECTION
583 MANEUVERING - TURN TO LANDING AREA (EMERGENCY)
542 MANEUVERING - HOLDING(IFR)
590 HOVER (stationary; excludes aerial taxi)
591 HOVER - IN GROUND EFFECT
592 HOVER - OUT OF GROUND EFFECT
600 OTHER
610 UNKNOWN

PART VI - CODES FOR CAUSES, FACTORS, AND OTHER EVENTS

SECTION IA - AIRCRAFT STRUCTURE SUBJECTS

10500	DOOR
10505	DOOR, CARGO/BAGGAGE
10504	DOOR, EMERGENCY EXIT (Also, see Window, Emerg Exit, 10606)
10507	DOOR, ENTRANCE STAIR
10502	DOOR, EXTERIOR CREW
10510	DOOR, INSPECTION
10508	DOOR, INTERIOR
10501	DOOR, INTERIOR CREW
10509	DOOR, LANDING GEAR
10503	DOOR, PASSENGER
10506	DOOR, SERVICE
10300	FLIGHT CONTROL SURFACES/ATTACHMENTS
10308	FLIGHT CONTROL, AILERON
10312	FLIGHT CONTROL, AILERON ATTACHMENT
10309	FLIGHT CONTROL, AILERON SURFACE (i.e., torn fabric, damaged skin, delaminated surface)
10311	FLIGHT CONTROL, AILERON TAB (& tab attachment)
10301	FLIGHT CONTROL, ELEVATOR
10304	FLIGHT CONTROL, ELEVATOR ATTACHMENT
10302	FLIGHT CONTROL, ELEVATOR SURFACE (see note for code 10309)
10303	FLIGHT CONTROL, ELEVATOR TAB (& tab attachment)
10320	FLIGHT CONTROL, FLAP
10322	FLIGHT CONTROL, FLAP ATTACHMENT
10321	FLIGHT CONTROL, FLAP SURFACE (see note for code 10309)
10329	FLIGHT CONTROL, GUST LOCK
10331	FLIGHT CONTROL, LEADING EDGE FLAP
10333	FLIGHT CONTROL, LEADING EDGE FLAP ATTACHMENT
10332	FLIGHT CONTROL, LEADING EDGE FLAP SURFACE
10330	FLIGHT CONTROL, LIFT AUGMENTATION (includes bndry layer ctl)
10313	FLIGHT CONTROL, RUDDER
10314	FLIGHT CONTROL, RUDDER SURFACE (see note for code 10309)
10316	FLIGHT CONTROL, RUDDER TAB (& tab attachment)
10733	FLT CONTROL SYSTEM, RUDDER CONTROL ATTACH POINTS
10317	FLIGHT CONTROL, RUDDERVATOR
10319	FLIGHT CONTROL, RUDDERVATOR ATTACHMENT
10318	FLIGHT CONTROL, RUDDERVATOR SURFACE(see note for code 10309)
+10337	FLIGHT CONTROL, RUDDERVATOR TAB (& attachment)
10323	FLIGHT CONTROL, SLAT
10325	FLIGHT CONTROL, SLAT ATTACHMENT
10324	FLIGHT CONTROL, SLAT SURFACE
10326	FLIGHT CONTROL, SLOT
10334	FLIGHT CONTROL, SPEED BRAKE
10336	FLIGHT CONTROL, SPEED BRAKE ATTACHMENT
10335	FLIGHT CONTROL, SPEED BRAKE SURFACE
10305	FLIGHT CONTROL, STABILATOR
10307	FLIGHT CONTROL, STABILATOR ATTACHMENT
10306	FLIGHT CONTROL, STABILATOR SURFACE (see note for code 10309)

9910001: Aircraft Structure

```

10700    FLIGHT CONTROL SYSTEM
10701        FLT CONTROL SYST, AILERON CONTROL
10728        FLT CONTROL SYST, AILERON CONTROL BEARING
10729        FLT CONTROL SYST, AILERON CONTROL CABLE/ROD
10702        FLT CONTROL SYST, AILERON TRIM/TAB CONTROL
10715        FLT CONTROL SYST, AILERON TRIM INDICATOR
10711        FLT CONTROL SYST, BOOST SYSTEM
10703        FLT CONTROL SYST, ELEVATOR CONTROL (excludes cable/rod/brg)
>10731        FLT CONTROL SYST, ELEVATOR CONTROL BEARING
10732        FLT CONTROL SYST, ELEVATOR CONTROL CABLE/ROD
10704        FLT CONTROL SYST, ELEVATOR TRIM/TAB CONTROL
10716        FLT CONTROL SYST, ELEVATOR TRIM INDICATOR
            #FLT CONTROL SYST, FLAP CONTROL (see: Wing Flap Control)
10742        FLT CONTROL SYST, FLY-BY-WIRE
10713        FLT CONTROL SYST, HORIZ STAB DRIVE (stabilizer)
10714        FLT CONTROL SYST, HORIZ STAB POSITION INDICATOR
10710        FLT CONTROL SYST, LOAD FEEL (artificial feel)
10719        FLT CONTROL SYST, MACH TRIM
10712        FLT CONTROL SYST, POWER REVERSAL MECHANISM EJECTOR
10705        FLT CONTROL SYST, RUDDER CONTROL (excludes ctl cable/rod)
10734        FLT CONTROL SYST, RUDDER CONTROL BEARING
10735        FLT CONTROL SYST, RUDDER CONTROL CABLE/ROD
10706        FLT CONTROL SYST, RUDDER TRIM/TAB CONTROL
10718        FLT CONTROL SYST, RUDDER TRIM INDICATOR
10743        FLT CONTROL SYST, RUDDERVATOR (i.e., v-tail mixing unit)
10724        FLT CONTROL SYST, SPEED BRAKE SYSTEM
            #(For spoiler, see 10720 for wing spoiler system)
10708        FLT CONTROL SYST, STABILATOR CONTROL
10737        FLT CONTROL SYST, STABILATOR CONTROL BEARING
10738        FLT CONTROL SYST, STABILATOR CONTROL CABLE/ROD
10707        FLT CONTROL SYST, STABILATOR TRIM
10717        FLT CONTROL SYST, STABILATOR TRIM INDICATOR
10744        FLT CONTROL SYST, STABILITY AUGMENTATION SYST (SAS)
            ( see 13001 for rotorcraft SAS)
10709        FLT CONTROL SYST, WING FLAP CONTROL #(includes actuator & motor)
10740        FLT CONTROL SYST, WING FLAP CONTROL BEARING
10741        FLT CONTROL SYST, WING FLAP CONTROL CABLE/ROD
10723        FLT CONTROL SYST, WING LEADING EDGE FLAP SYSTEM
10722        FLT CONTROL SYST, WING SLAT SYSTEM
10720        FLT CONTROL SYST, WING SPOILER SYSTEM
10745        FLT CONTROL SYST, YAW DAMPER
10726        FLT CONTROL SYST, YOKE/CONTROL STICK
10000    FUSELAGE (see: 13000 misc rotorcraft & 11300 misc airframe)
10013        FUSELAGE, FIREWALL (includes eng firewall)
10008        FUSELAGE, ATTACHMENT
10004        FUSELAGE, BULKHEAD (also, see: fuselage pressure bulkhead)
10003        FUSELAGE, CABIN
10002        FUSELAGE, CARGO COMPARTMENT
10001        FUSELAGE, CREW COMPARTMENT
10010        FUSELAGE, FAIRING
10005        FUSELAGE, FLOOR
10012        FUSELAGE, INSTRUMENT/ELECTRICAL PANEL
10007        FUSELAGE, LONGERON
10014        FUSELAGE, PRESSURE BULKHEAD
10011        FUSELAGE, SEAT
10006        FUSELAGE, SKIN
10009        FUSELAGE, STRINGER

```

9910001: Aircraft Structure

10400 LANDING GEAR
 10419 LANDING GEAR, ANTI-SKID BRAKE SYSTEM
 10412 LANDING GEAR, AXLE
 10420 LANDING GEAR, BRAKE TEMPERATURE SYSTEM
 10421 LANDING GEAR, EMERGENCY BRAKE SYSTEM
 10407 LANDING GEAR, EMERGENCY EXTENSION ASSEMBLY
 10414 LANDING GEAR, FLOAT ASSEMBLY (see 13006 for emerge floats)
 10416 LANDING GEAR, GEAR INDICATING SYSTEM
 10424 LANDING GEAR, GEAR LEVER
 10422 LANDING GEAR, GEAR LOCKING MECHANISM
 10423 LANDING GEAR, GEAR SWITCH
 10415 LANDING GEAR, GEAR WARNING SYSTEM
 10401 LANDING GEAR, MAIN GEAR
 10404 LANDING GEAR, MAIN GEAR ATTACHMENT
 10402 LANDING GEAR, MAIN GEAR SHOCK ABSORBING STRUT
 10431 LANDING GEAR, MAIN GEAR STRUT SCISSORS
 10432 LANDING GEAR, MAIN GEAR SPRING
 10403 LANDING GEAR, MAIN GEAR STRUT
 10426 LANDING GEAR, NORMAL RETRACTION/EXTENSION ASSEMBLY
 10418 LANDING GEAR, NORMAL BRAKE SYSTEM
 10405 LANDING GEAR, NOSE GEAR
 10429 LANDING GEAR, NOSE GEAR ATTACH POINT
 10406 LANDING GEAR, NOSE GEAR ASSEMBLY
 #NOSE GEAR STEERING SYSTEM (see: code 10425)
 10428 LANDING GEAR, NOSE GEAR STRUT
 +10434 LANDING GEAR, OVERSIZED TIRES (includes Tundra Tires)
 10427 LANDING GEAR, PARKING BRAKE
 10413 LANDING GEAR, SKI ASSEMBLY
 10417 LANDING GEAR, SKID ASSEMBLY (includes tailskid & X-tube)
 10425 LANDING GEAR, STEERING SYSTEM
 10408 LANDING GEAR, TAILWHEEL
 10409 LANDING GEAR, TAILWHEEL ASSEMBLY (includes tailwheel strut)
 10430 LANDING GEAR, TAILWHEEL LOCK
 10411 LANDING GEAR, TIRE (# see 10434 for oversized/tundra tires)
 +10435 LANDING GEAR, TIRE VALVE STEM
 10433 LANDING GEAR, TOWBAR/ATTACHMENT
 10410 LANDING GEAR, WHEEL
 11300 MISCELLANEOUS, AIRFRAME
 11301 AIRFRAME (can use for airframe ice or airframe vibration)
 11302 EMPENNAGE (i.e., empennage vibration or empennage ice)
 11303 #MISCELLANEOUS, BOLT/NUT/FASTENER/CLAMP/SPRING (airframe or engine;
 see: 14015 for "Connecting Rod Bolt" & 15304 for
 "Engine Mounting Bolt")
 11304 MISCELLANEOUS, DOWEL/PIN (airframe or engine)
 +11308 MISCELLANEOUS, DRAIN PLUG
 11305 MISCELLANEOUS, HELICOIL (airframe or engine)
 +11309 MISCELLANEOUS, SEAL/BOOT/GASKET
 +11307 PANEL
 11306 RADOME

9910001: Aircraft Structure


```

13000    MISC ROTORCRAFT
13001    MISC ROTORCRAFT, AUTOMATIC STABILIZATION SYSTEM (includes
        rotorcraft stability augmentation sys/SAS)
13010    MISC ROTORCRAFT, CHIP DETECTOR SYSTEM, GEAR BOX
13005    MISC ROTORCRAFT, DUAL TACHOMETER
13006    MISC ROTORCRAFT, EMERGENCY FLOATATION GEAR
13011    MISC ROTORCRAFT, MAIN ROTOR RPM WARNING SYSTEM
13012    MISC ROTORCRAFT, MAIN ROTOR/TAIL BOOM CONTACT (use as a
        finding with blank code:1220; not as a cause or factor)
        #MAST BUMPING (see: 24806)
13013    MISC ROTORCRAFT, PARTICLE SEPARATOR
13007    MISC ROTORCRAFT, TAIL BOOM
13009    MISC ROTORCRAFT, TAIL CONE
13008    MISC ROTORCRAFT, TAIL PYLON
13002    MISC ROTORCRAFT, TRANSMISSION OIL PRESS IND
13014    MISC ROTORCRAFT, TRANSMISSION SUPPORT TUBE/ATCHMNT
13004    MISC ROTORCRAFT, TRANSMISSION TEMP IND
13003    MISC ROTORCRAFT, TRANSMISSION WARNING TEST IND
10200    NACELLE/PYLON
10205    NACELLE/PYLON, ATTACHMENT (includes fuse pin)
10202    NACELLE/PYLON, AUXILIARY
10207    NACELLE/PYLON, FARING
10208    NACELLE/PYLON, FILLET
10206    NACELLE/PYLON, FITTING
10201    NACELLE/PYLON, MAIN FRAME
10203    NACELLE/PYLON, PLATE
10204    NACELLE/PYLON, SKIN
11000    ROTOR DRIVE SYSTEM
11022    ROTOR DRIVE SYSTEM, ANGLE GEARBOX (i.e., Sikorsky S-58)
11005    ROTOR DRIVE SYSTEM, CLUTCH ASSEMBLY
11007    ROTOR DRIVE SYSTEM, COMBINING GEARBOX
11001    ROTOR DRIVE SYSTEM, ENGINE TO TRANSMISSION DRIVE (includes
        bearing to input quill/short shaft)
11003    ROTOR DRIVE SYSTEM, FREEWHEELING SPRAG UNIT
11004    ROTOR DRIVE SYSTEM, FREEWHEELING UNIT(OTHER)
11010    ROTOR DRIVE SYSTEM, INPUT GEARBOX
11008    ROTOR DRIVE SYSTEM, INTERMEDIATE GEARBOX(42 DEG)(i.e.; Bell 205)
11019    ROTOR DRIVE SYSTEM, ISOLATION LINK
11020    ROTOR DRIVE SYSTEM, LIFT LINK
11006    ROTOR DRIVE SYSTEM, MAIN GEARBOX/TRANSMISSION (includes all
        transmissions)
11018    ROTOR DRIVE SYSTEM, MAIN ROTOR DRIVE BELT
11015    ROTOR DRIVE SYSTEM, MAIN ROTOR DRIVEN PULLEY
11016    ROTOR DRIVE SYSTEM, MAIN ROTOR DRIVING PULLEY
11017    ROTOR DRIVE SYSTEM, MAIN ROTOR IDLER PULLEY
11002    ROTOR DRIVE SYSTEM, MAIN ROTOR MAST(DRIVE SHAFT)
11012    ROTOR DRIVE SYSTEM, OIL COOLER DRIVE BELT
11013    ROTOR DRIVE SYSTEM, OIL COOLER DRIVE SHAFT
11011    ROTOR DRIVE SYSTEM, TAIL ROTOR DRIVE SHAFT
11014    ROTOR DRIVE SYSTEM, TAIL ROTOR DRIVE SHAFT BEARING
11021    ROTOR DRIVE SYSTEM, TAIL ROTOR DRIVE SHAFT COUPLING
11009    ROTOR DRIVE SYSTEM, TAIL ROTOR GEARBOX(90 DEG)

```

9910001: Aircraft Structure

```

11200 ROTOR SYSTEM
11235 ROTOR SYSTEM, MAIN ROTOR
11201 ROTOR SYSTEM, MAIN ROTOR BLADE
11206 ROTOR SYSTEM, MAIN ROTOR BLADE ABRASION STRIP
11229 ROTOR SYSTEM, MAIN ROTOR BLADE BALANCE WEIGHTS
11234 ROTOR SYSTEM, MAIN ROTOR BLADE DRAG BRACE
11207 ROTOR SYSTEM, MAIN ROTOR BLADE CUFF
11204 ROTOR SYSTEM, MAIN ROTOR BLADE POCKET
11233 ROTOR SYSTEM, MAIN ROTOR BLADE RETAINING PIN/BOLT
11203 ROTOR SYSTEM, MAIN ROTOR BLADE SKIN
11202 ROTOR SYSTEM, MAIN ROTOR BLADE SPAR
11205 ROTOR SYSTEM, MAIN ROTOR BLADE TRIM TAB
11108 ROTORCRAFT FLIGHT CONTROL SYSTEM, MAIN ROTOR BRAKE
11213 ROTOR SYSTEM, MAIN ROTOR HUB
11216 ROTOR SYSTEM, MAIN ROTOR HUB BEARING
11219 ROTOR SYSTEM, MAIN ROTOR HUB FLAPPING HINGE/STOP(S)
11217 ROTOR SYSTEM, MAIN ROTOR HUB LEAD-LAG STOP/DAMPER
11215 ROTOR SYSTEM, MAIN ROTOR HUB GRIP(SLEEVE)
11221 ROTOR SYSTEM, MAIN ROTOR HUB PILLOW BLOCK
11231 ROTOR SYSTEM, MAIN ROTOR HUB RETAINING NUT
11218 ROTOR SYSTEM, MAIN ROTOR HUB STOP(STATIC/DYNAMIC)
11220 ROTOR SYSTEM, MAIN ROTOR HUB TRUNNION
11214 ROTOR SYSTEM, MAIN ROTOR HUB YOKE(SPINDLE)
+11238 ROTOR SYSTEM, MAIN ROTOR TENSION TORSION BAR
11228 ROTOR SYSTEM, ROTOR VIBRATION ABSORBER
11227 ROTOR SYSTEM, STABILIZER BAR
11236 ROTOR SYSTEM, STAR FLEX ARM (Aerospatiale helicopter)
11237 ROTOR SYSTEM, TAIL ROTOR
11208 ROTOR SYSTEM, TAIL ROTOR BLADE
11211 ROTOR SYSTEM, TAIL ROTOR BLADE ABRASION STRIP
11230 ROTOR SYSTEM, TAIL ROTOR BLADE BALANCE WEIGHTS
11212 ROTOR SYSTEM, TAIL ROTOR BLADE CUFF
11210 ROTOR SYSTEM, TAIL ROTOR BLADE POCKET
11209 ROTOR SYSTEM, TAIL ROTOR BLADE SPAR
11222 ROTOR SYSTEM, TAIL ROTOR HUB
11223 ROTOR SYSTEM, TAIL ROTOR HUB COUNTERWEIGHT
11226 ROTOR SYSTEM, TAIL ROTOR HUB PITCH ACTUATING SHAFT
11225 ROTOR SYSTEM, TAIL ROTOR HUB PITCH CHANGE MECHANISM
      (includes Pitch Change Beam/Crosshead/Spider)
11224 ROTOR SYSTEM, TAIL ROTOR HUB PITCH LINK
11232 ROTOR SYSTEM, TAIL ROTOR HUB RETAINING NUT
+11239 ROTOR SYSTEM, TAIL ROTOR TENSION TORSION BAR
11100 ROTORCRAFT FLIGHT CONTROL SYSTEM
13001 MISC ROTORCRAFT, AUTOMATIC STABILIZATION SYSTEM (includes
      stability augmentation system (SAS))
11102 ROTORCRAFT FLIGHT CONTROL SYSTEM, AUXILIARY SERVO
11105 ROTORCRAFT FLIGHT CONTROL SYSTEM, BIAS ACTUATOR
11104 ROTORCRAFT FLIGHT CONTROL SYSTEM, COLLECTIVE TRIM
11103 ROTORCRAFT FLIGHT CONTROL SYSTEM, CYCLIC TRIM
11109 ROTORCRAFT FLIGHT CONTROL SYSTEM, FLY-BY-WIRE
11106 ROTORCRAFT FLIGHT CONTROL SYSTEM, MAGNETIC BRAKE
11108 ROTORCRAFT FLIGHT CONTROL SYSTEM, MAIN ROTOR BRAKE
11110 ROTORCRAFT FLIGHT CONTROL SYSTEM, NOTAR (no tail rotor sys) 11101
11107 ROTORCRAFT FLIGHT CONTROL SYSTEM, TAIL ROTOR SERVO

```

9910001: Aircraft Structure

10900 ROTORCRAFT FLIGHT CONTROL
 10906 ROTORCRAFT FLIGHT CONTROL, COLLECTIVE BELLCRANK
 10907 ROTORCRAFT FLIGHT CONTROL, COLLECTIVE BIAS
 10904 ROTORCRAFT FLIGHT CONTROL, COLLECTIVE CONTROL
 10905 ROTORCRAFT FLIGHT CONTROL, COLLECTIVE CONTROL ROD
 10920 ROTORCRAFT FLIGHT CONTROL, CONTROL ROD BEARING
 10903 ROTORCRAFT FLIGHT CONTROL, CYCLIC BELLCRANK
 10901 ROTORCRAFT FLIGHT CONTROL, CYCLIC CONTROL
 10902 ROTORCRAFT FLIGHT CONTROL, CYCLIC CONTROL ROD
 10921 ROTORCRAFT FLIGHT CONTROL, GYROSCOPE ROTOR CTL ARM
 10912 ROTORCRAFT FLIGHT CONTROL, MIXING UNIT
 10917 ROTORCRAFT FLIGHT CONTROL, PITCH CHANGE HORN
 10916 #ROTORCRAFT FLIGHT CONTROL, PITCH CHANGE ROD/LINK
 10914 ROTORCRAFT FLIGHT CONTROL, ROTATING SCISSORS
 10919 ROTORCRAFT FLIGHT CONTROL, STABILIZER CONTROL
 10913 ROTORCRAFT FLIGHT CONTROL, STATIONARY SCISSORS
 10915 ROTORCRAFT FLIGHT CONTROL, SWASHPLATE ASSEMBLY
 10918 ROTORCRAFT FLIGHT CONTROL, SYNCHRONIZED ELEV CTL
 10910 ROTORCRAFT FLIGHT CONTROL, T/R BELLCRANK/QUADRANT
 10911 ROTORCRAFT FLIGHT CONTROL, TAIL ROTOR CABLE
 10909 ROTORCRAFT FLIGHT CONTROL, TAIL ROTOR CONTROL
 10908 ROTORCRAFT FLIGHT CONTROL, TAIL ROTOR PEDAL
 10800 STABILIZER
 10112 CANARD
 10805 HORIZONTAL STABILIZER
 10802 HORIZONTAL STABILIZER ATTACHMENT
 10801 HORIZONTAL STABILIZER SURFACE
 10806 TAILPLANE (i.e.; tailplane - ice or tailplane - stall)
 10807 VERTICAL STABILIZER
 10804 VERTICAL STABILIZER ATTACHMENT
 10803 VERTICAL STABILIZER SURFACE
 10808 V-TAIL STABILIZER
 10600 WINDOW
 10602 WINDOW, CABIN
 10605 WINDOW, CANOPY
 10603 WINDOW, DOOR
 10606 WINDOW, EMERGENCY EXIT (also see: door, emerge exit)
 10601 WINDOW, FLIGHT COMPARTMENT WINDOW/WINDSHIELD
 10604 WINDOW, INSPECTION/OBSERVATION
 10100 WING
 10112 CANARD
 10107 WING, BRACING STRUT
 10106 WING, BRACING WIRE
 10109 WING, FARING
 10108 WING, SKIN
 10101 WING, SPAR
 10113 WING, STALL STRIPS
 10103 WING, STRINGER
 10114 WING, VORTEX GENERATORS
 10105 WING, WING ATTACHMENT BOLT
 10104 WING, WING ATTACHMENT FITTING
 10102 WING, WING RIB
 10111 WING, WINGLET
 10110 WING, WINGTIP

9910001: Aircraft Structure

SECTION IA - AIRCRAFT SYSTEM SUBJECTS

12900 AIR COND/HEATING/PRESSURIZATION
 12905 AIR COND/HEATING/PRESSURIZATION, AIR EMERGE VALVES
 12906 AIR COND/HEATING/PRESSURIZATION, CABIN TEMP CONTROL
 12907 AIR COND/HEATING/PRESSURIZATION, CABIN TEMP IND SYS
 12903 AIR COND/HEATING/PRESSURIZATION, CONTROL/INDICATOR
 12904 AIR COND/HEATING/PRESSURIZATION, FREON SYSTEM
 >12908 AIR COND/HEATING/PRESSURIZATION, OUTFLOW VALVE
 12909 AIR COND/HEATING/PRESSURIZATION, SAFETY VALVE
 12902 AIR COND/HEATING/PRESSURIZATION, PRESSURE REGULATOR
 12901 AIR COND/HEATING/PRESSURIZATION, TURBOCOMPRESSOR
 12910 CABIN HEATER (i.e., fuel heater or exhaust heater/muf sys)
 12300 ANTI-ICE/DEICE SYSTEM
 12305 ANTI-ICE/DEICE SYSTEM, CARBURETOR/HEAT (see: 16400 for carb heat control)
 12302 ANTI-ICE/DEICE SYSTEM, EMPENNAGE
 12306 ANTI-ICE/DEICE SYSTEM, FUEL
 12309 #ANTI-ICE/DEICE SYSTEM, NACELLE/ENGINE INLET ANTI-ICE
 12307 ANTI-ICE/DEICE SYSTEM, PITOT HEAT
 12304 ANTI-ICE/DEICE SYSTEM, PROPELLER
 12308 ANTI-ICE/DEICE SYSTEM, Q-SPRING INLET ANTI-ICE (see 16708 for "Alternate Air Door")
 12310 ANTI-ICE/DEICE SYSTEM, ROTOR
 12303 ANTI-ICE/DEICE SYSTEM, WINDSHIELD
 12301 ANTI-ICE/DEICE SYSTEM, WING
 12800 AUTOPILOT/FLIGHT DIRECTOR
 12807 AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)
 12801 AUTOPILOT/FLIGHT DIRECTOR, AMPLIFIER AND COMPUTER
 12806 AUTOPILOT/FLIGHT DIRECTOR, AUTO THROTTLE
 12805 AUTOPILOT/FLIGHT DIRECTOR, DISENGAGE UNIT
 12804 AUTOPILOT/FLIGHT DIRECTOR, GYRO
 12803 AUTOPILOT/FLIGHT DIRECTOR, SERVO
 12802 AUTOPILOT/FLIGHT DIRECTOR, TRANSMITTER(AUTOPILOT)
 12700 COMM/NAV EQUIPMENT
 12725 COMM/NAV EQUIPMENT, ACARS
 12724 COMM/NAV EQUIPMENT, ANTENNA
 12720 COMM/NAV EQUIPMENT, AUDIO PANEL
 12716 COMM/NAV EQUIPMENT, CB RADIO
 12706 COMM/NAV EQUIPMENT, COMPASS RECEIVER
 12710 COMM/NAV EQUIPMENT, DISTANCE MEASURING EQPT(DME)
 12721 COMM/NAV EQUIPMENT, EMERGENCY LOCATOR TRANSMITTER
 12726 COMM/NAV EQUIPMENT, FLIGHT MANAGEMENT COMPUTER (FMC)
 12714 COMM/NAV EQUIPMENT, FM TRANSMITTER/RECEIVER
 12723 COMM/NAV EQUIPMENT, GLIDE SLOPE RECEIVER
 12727 COMM/NAV EQUIPMENT, GLOBAL POSITIONING SYSTEM (GPS)
 12715 COMM/NAV EQUIPMENT, HF TRANSMITTER/RECEIVER
 12728 COMM/NAV EQUIPMENT, INSTRUMENT LANDING SYS (ILS)
 12729 COMM/NAV EQUIPMENT, INERTIAL NAVIGATION SYS (INS)
 12703 COMM/NAV EQUIPMENT, INTERCOM (includes cockpit to cabin/gnd)
 12707 COMM/NAV EQUIPMENT, LF RECEIVER
 12704 COMM/NAV EQUIPMENT, LOCALIZER RECEIVER
 12709 COMM/NAV EQUIPMENT, LORAN/OMEGA RECEIVER
 12722 COMM/NAV EQUIPMENT, MARKER BEACON RECEIVER
 12711 COMM/NAV EQUIPMENT, MLS RECEIVER
 12702 COMM/NAV EQUIPMENT, RECEIVER
 12717 COMM/NAV EQUIPMENT, RNAV
 12708 COMM/NAV EQUIPMENT, TACAN RECEIVER
 12719 COMM/NAV EQUIPMENT, TRANSCEIVER(includes handheld,except CB)
 12701 COMM/NAV EQUIPMENT, TRANSMITTER
 12718 COMM/NAV EQUIPMENT, TRANSPONDER
 12713 COMM/NAV EQUIPMENT, UHF TRANSMITTER/RECEIVER
 12712 COMM/NAV EQUIPMENT, VHF TRANSMITTER/RECEIVER
 12705 COMM/NAV EQUIPMENT, VOR RECEIVER

12000	ELECTRICAL SYSTEM
12005	ELECTRICAL SYSTEM, ALTERNATOR
12002	ELECTRICAL SYSTEM, AMMETER
12018	ELECTRICAL SYSTEM, AUXILIARY POWER UNIT (APU) (& subsystems)
12001	ELECTRICAL SYSTEM, BATTERY
12017	ELECTRICAL SYSTEM, CIRCUIT BREAKER
12006	ELECTRICAL SYSTEM, CONSTANT SPEED DRIVE UNIT
12010	ELECTRICAL SYSTEM, CONVERTER
12019	ELECTRICAL SYSTEM, DRIVE/BELT
12008	ELECTRICAL SYSTEM, DYNAMOTOR
12014	ELECTRICAL SYSTEM, ELECTRIC MOTOR
12012	ELECTRICAL SYSTEM, ELECTRIC RELAY
12015	ELECTRICAL SYSTEM, ELECTRIC SWITCH
12013	ELECTRICAL SYSTEM, ELECTRIC WIRING #(includes connectors)
12016	ELECTRICAL SYSTEM, FUSE
12004	ELECTRICAL SYSTEM, GENERATOR (includes generator mounts)
12020	ELECTRICAL SYSTEM, GROUND POWER UNIT/ADAPTER
12007	ELECTRICAL SYSTEM, INVERTER
12009	ELECTRICAL SYSTEM, RECTIFIER
12021	ELECTRICAL SYSTEM, TRANSDUCER
12011	ELECTRICAL SYSTEM, VOLTAGE REGULATOR
12003	ELECTRICAL SYSTEM, VOLTMETER
12600	FIRE EXTINGUISHER
12603	FIRE EXTINGUISHER, AIRFRAME
12607	FIRE EXTINGUISHER, APU
12604	FIRE EXTINGUISHER, CABIN
12605	FIRE EXTINGUISHER, CARGO
12602	FIRE EXTINGUISHER, HEATER
12608	FIRE EXTINGUISHER, LAVATORY
12606	FIRE EXTINGUISHER, PORTABLE
12601	FIRE EXTINGUISHER, POWERPLANT
12400	FIRE WARNING SYSTEM
12403	FIRE WARNING SYSTEM, AIRFRAME
12406	FIRE WARNING SYSTEM, APU
12404	FIRE WARNING SYSTEM, CABIN
12405	FIRE WARNING SYSTEM, CARGO
12402	FIRE WARNING SYSTEM, HEATER
12407	FIRE WARNING SYSTEM, LAVATORY
12401	FIRE WARNING SYSTEM, POWERPLANT
12408	FIRE WARNING SYSTEM, WHEEL WELL
12409	OVERHEAT WARNING SYSTEM
12410	SMOKE DETECTOR(S)

9912001: Aircraft System

```

12200 FLIGHT/NAV INSTRUMENTS
12203 FLIGHT/NAV INSTRUMENTS, AIRSPEED INDICATOR
12201 FLIGHT/NAV INSTRUMENTS, ALTIMETER
12218 FLIGHT/NAV INSTRUMENTS, ALTIMETER, ENCODING
12202 FLIGHT/NAV INSTRUMENTS, ALTIMETER, RADIO
12209 FLIGHT/NAV INSTRUMENTS, ANGLE OF ATTACK INDICATOR
12215 FLIGHT/NAV INSTRUMENTS, ATTITUDE DIRECTOR IND(ADI)
12205 FLIGHT/NAV INSTRUMENTS, ATTITUDE GYRO
12206 FLIGHT/NAV INSTRUMENTS, ATTITUDE INDICATOR
12210 FLIGHT/NAV INSTRUMENTS, COMPASS (magnetic)
12212 FLIGHT/NAV INSTRUMENTS, COURSE INDICATOR
12208 FLIGHT/NAV INSTRUMENTS, DIRECTIONAL GYRO
12220 FLIGHT/NAV INSTRUMENTS, ELEC FLT INST SYS (EFIS) (includes
      "Glass Cockpit" system)
12221 FLT/NAV INST, ENG INDCN/CREW ALERTING SYS (EICAS)
12213 FLIGHT/NAV INSTRUMENTS, FLUXGATE COMPASS (slaved)
12217 FLIGHT/NAV INSTRUMENTS, HEADING INDICATOR
12222 FLIGHT/NAV INSTRUMENTS, HEAD-UP DISPLAY (HUD)
12214 FLIGHT/NAV INSTRUMENTS, HORIZ SITUATION IND(HSI)
12219 FLIGHT/NAV INSTRUMENTS, OMNI BEARING SELECTOR
12211 FLIGHT/NAV INSTRUMENTS, RADIO MAGNETIC INDICATOR
12223 FLIGHT/NAV INSTRUMENTS, RATE GYRO
12224 FLIGHT/NAV INSTRUMENTS, TCAS (traffic alert & collision sys)
12204 FLIGHT/NAV INSTRUMENTS, TURN AND BANK (& turn coordinator)
12207 FLIGHT/NAV INSTRUMENTS, VERTICAL VELOCITY INDICATOR
12216 FLIGHT/NAV INSTRUMENTS, WEATHER RADAR SYSTEM (& stormscope)
12100 HYDRAULIC SYSTEM
12111 HYDRAULIC SYSTEM, ACCUMULATOR
12114 HYDRAULIC SYSTEM, ACTUATOR
12112 HYDRAULIC SYSTEM, AUXILIARY PUMP
12110 HYDRAULIC SYSTEM, BYPASS VALVE
12113 HYDRAULIC SYSTEM, FILTER
12106 HYDRAULIC SYSTEM, FITTING
12105 HYDRAULIC SYSTEM, LINE
12103 HYDRAULIC SYSTEM, MOTOR
12101 HYDRAULIC SYSTEM, PRESSURE REGULATOR
12102 HYDRAULIC SYSTEM, PUMP
12108 HYDRAULIC SYSTEM, RELIEF VALVE
12104 HYDRAULIC SYSTEM, RESERVOIR
12107 HYDRAULIC SYSTEM, SEAL
12109 HYDRAULIC SYSTEM, SHUTOFF VALVE
13100 OTHER SYSTEM
13104 AUXILIARY POWER UNIT
13109 COLLISION AVOIDANCE SYSTEM
13106 GROUND PROXIMITY WARNING SYSTEM
13101 PITOT/STATIC SYSTEM
13103 PNEUMATIC SYSTEM
+13111 RAIN REPELLANT SYSTEM
13108 SAFETY SYSTEM(OTHER)
13110 STALL WARNING SYSTEM
13102 VACUUM SYSTEM
13107 WARNING SYSTEM(OTHER)
13105 WATER AND WASTE SYSTEM
+13112 YAW INDICATOR STRING
12500 OXYGEN SYSTEM
12501 OXYGEN SYSTEM, CREW
12504 OXYGEN SYSTEM, MASK, CREW
12505 OXYGEN SYSTEM, MASK, PASSENGER
12502 OXYGEN SYSTEM, PASSENGER
12503 OXYGEN SYSTEM, PORTABLE

```

9912001: Aircraft System

SECTION IA - AIRCRAFT POWERPLANT SUBJECTS

14700 ACCESSORY DRIVE ASSY
14701 ACCESSORY DRIVE ASSY, CASTING
14706 ACCESSORY DRIVE ASSY, DRIVE BEARING
14707 ACCESSORY DRIVE ASSY, DRIVE GEAR
14705 ACCESSORY DRIVE ASSY, DRIVE SHAFT
14703 ACCESSORY DRIVE ASSY, EXT SHAFT BEARING
14704 ACCESSORY DRIVE ASSY, EXT SHAFT UNIVERSAL JOINTS
14702 ACCESSORY DRIVE ASSY, EXTENSION UNIT
15000 BLEED AIR SYSTEM
15003 BLEED AIR SYSTEM, ACTUATOR
15006 BLEED AIR SYSTEM, FITTINGS
15004 BLEED AIR SYSTEM, GOVERNOR
15005 BLEED AIR SYSTEM, LINES
15002 BLEED AIR SYSTEM, SENSITIVE VALVE
15001 BLEED AIR SYSTEM, VALVE
16400 CARBURETOR HEAT CONTROL (see: 12305 for carburetor/heat & 16708 for Alternate Air/Door)
16407 CARBURETOR HEAT, AIR BOX
16404 CARBURETOR HEAT CONTROL, CABLE/PUSH-PULL ROD
16405 CARBURETOR HEAT CONTROL, LINKAGE
16406 CARBURETOR HEAT CONTROL, TORQUE BOX
16408 CARBURETOR HEAT, SHROUD
14200 COMBUSTION ASSEMBLY
14203 COMBUSTION ASSEMBLY, CASING SEAL
14204 COMBUSTION ASSEMBLY, COMBUSTION LINER
14205 COMBUSTION ASSEMBLY, CROSSOVER TUBE
14206 COMBUSTION ASSEMBLY, EXPANSION SEAL
14202 COMBUSTION ASSEMBLY, INNER CASING
14201 COMBUSTION ASSEMBLY, OUTER CASING
14207 COMBUSTION ASSEMBLY, TRANSITION LINER
14100 COMPRESSOR ASSEMBLY
14109 COMPRESSOR ASSEMBLY, AIR SEAL
14104 COMPRESSOR ASSEMBLY, BLADE
14105 COMPRESSOR ASSEMBLY, BLADE RETENTION
14101 COMPRESSOR ASSEMBLY, CASTING
14112 COMPRESSOR ASSEMBLY, FORWARD FAN
14107 COMPRESSOR ASSEMBLY, IMPELLER
14110 COMPRESSOR ASSEMBLY, OIL SEAL
14108 COMPRESSOR ASSEMBLY, ROTATING GUIDE VANE
14103 COMPRESSOR ASSEMBLY, ROTOR DISC
14114 COMPRESSOR ASSEMBLY, SPACER
14113 COMPRESSOR ASSEMBLY, STATOR VANE(includes fixed inlet vanes)
14102 COMPRESSOR ASSEMBLY, STATOR VANE RETAINER
14111 COMPRESSOR ASSEMBLY, VARIABLE INLET GUIDE VANE (& actuator)
14106 COMPRESSOR ASSEMBLY, WHEEL RETENTION
14600 CONSTANT SPEED DRIVE
14607 CONSTANT SPEED DRIVE, GOVERNOR VALVE
14608 CONSTANT SPEED DRIVE, GOVERNOR VALVE FLYWEIGHT
14603 CONSTANT SPEED DRIVE, INPUT PISTON
14601 CONSTANT SPEED DRIVE, INPUT RACE
14604 CONSTANT SPEED DRIVE, OUTPUT PISTON
14602 CONSTANT SPEED DRIVE, OUTPUT RACE
14605 CONSTANT SPEED DRIVE, OVERSPEED VALVE
14606 CONSTANT SPEED DRIVE, OVERSPEED VALVE FLYWEIGHT

9913001: Aircraft Powerplant

15700 COOLING SYSTEM
 15702 COOLING SYSTEM, BAFFLE
 15701 COOLING SYSTEM, COWLING (includes engine cowling)
 15703 COOLING SYSTEM, FIN (includes cylinder fins)
 15708 COOLING SYSTEM, FITTINGS
 15706 COOLING SYSTEM, JACKET
 15707 COOLING SYSTEM, LINES
 15705 COOLING SYSTEM, PUMP
 15704 COOLING SYSTEM, RADIATOR
 16500 COWL FLAP CONTROL (see: 14903, Cowl Flaps & 15701, eng cowling)
 16502 COWL FLAP CONTROL, BELLCRANK
 16504 COWL FLAP CONTROL, CABLE
 16505 COWL FLAP CONTROL, LINKAGE
 16503 COWL FLAP CONTROL, PULLEY
 16501 COWL FLAP CONTROL, PUSH/PULL ROD
 16506 COWL FLAP CONTROL, TORQUE BOX
 14900 ENGINE ACCESSORIES
 14903 ENGINE ACCESSORIES, COWL FLAPS (includes actuating assembly,
 see: 16500 for Cowl Flap Ctl)
 14902 ENGINE ACCESSORIES, ELECTRIC PUMP
 14906 ENGINE ACCESSORIES, ENGINE STARTER
 14905 ENGINE ACCESSORIES, FEATHERING MOTOR (14516, feathering pump)
 14904 ENGINE ACCESSORIES, OIL COOLER ACTUATING ASSEMBLY (see 15206
 for engine oil cooler)
 14901 ENGINE ACCESSORIES, VACUUM PUMP
 14000 ENGINE ASSEMBLY (for turboshaft helicopter, see 15900 series)
 16902 POWERPLANT
 14001 ENGINE ASSEMBLY, BEARING
 14012 ENG ASSEMBLY, BLOWER/IMPELLER/INTEGRAL SUPERCHARGER (see 14415
 for External Supercharger & 14416 for Turbocharger)
 14002 ENGINE ASSEMBLY, CAMSHAFT
 14006 ENGINE ASSEMBLY, CONNECTING ROD
 14015 ENGINE ASSEMBLY, CONNECTING ROD BOLT
 14022 ENGINE ASSEMBLY, CONNECTING ROD CAP
 14003 ENGINE ASSEMBLY, CRANKCASE
 14004 ENGINE ASSEMBLY, CRANKSHAFT
 14020 ENG ASSEMBLY, CRANKSHAFT COUNTERWEIGHTS/VIB DAMPER
 14007 ENGINE ASSEMBLY, CYLINDER
 14023 ENGINE ASSEMBLY, GEAR (see: 14707 for accessory drive gear)
 14005 ENGINE ASSEMBLY, MASTER ROD
 14013 ENGINE ASSEMBLY, MOUNT
 14014 ENGINE ASSEMBLY, OTHER
 14008 ENGINE ASSEMBLY, PISTON
 14009 ENGINE ASSEMBLY, PUSH ROD
 14010 ENGINE ASSEMBLY, RING
 14017 ENGINE ASSEMBLY, ROCKER ARM/TAPPET
 14021 ENGINE ASSEMBLY, TIMING GEAR
 14016 ENGINE ASSEMBLY, VALVE, EXHAUST
 14011 ENGINE ASSEMBLY, VALVE, INTAKE
 14019 ENGINE ASSEMBLY, VALVE KEEPER
 14018 ENGINE ASSEMBLY, VALVE LIFTER
 15300 ENGINE INSTALLATION
 15303 ENGINE INSTALLATION, FIRE SHIELD (jet engines only)
 10013 FUSELAGE, FIREWALL (includes eng firewall)
 15304 ENGINE INSTALLATION, MOUNTING BOLT
 15305 ENGINE INSTALLATION, SAFETY STRAP
 15301 ENGINE INSTALLATION, SHOCK ABSORBERS
 15302 ENGINE INSTALLATION, SUSPENSION MOUNTS

9913001: Aircraft Powerplant

15400 ENGINE INSTRUMENTS
 15413 ENGINE INSTRUMENTS, CARB AIR TEMP GAUGE
 15417 ENGINE INSTRUMENTS, CYLINDER HEAD TEMPERATURE GAUGE
 15410 ENGINE INSTRUMENTS, EGT/TOT GAUGE
 15419 ENGINE INSTRUMENTS, ELECTRONIC FLT INFO SYS #(EFIS/EICAS/EICMS)
 15420 ENGINE INSTRUMENTS, ENGINE RPM GAUGE #(includes N1,N2,Nf,Ng &
 typically calibrated in %)
 15409 ENGINE INSTRUMENTS, EPR GAGE/SYSTEM
 15405 ENGINE INSTRUMENTS, FUEL FLOW GAUGE
 15403 ENGINE INSTRUMENTS, FUEL PRESSURE GAUGE
 15404 ENGINE INSTRUMENTS, FUEL QUANTITY GAUGE
 15401 ENGINE INSTRUMENTS, MANIFOLD PRESSURE GAUGE
 15406 ENGINE INSTRUMENTS, OIL PRESSURE GAUGE
 15407 ENGINE INSTRUMENTS, OIL QUANTITY GAUGE
 15408 ENGINE INSTRUMENTS, OIL TEMPERATURE GAUGE
 15416 ENGINE INSTRUMENTS, PROPELLER RPM GAUGE
 15402 ENGINE INSTRUMENTS, TACHOMETER #(typically calibrated in RPM)
 15411 ENGINE INSTRUMENTS, TIT GAUGE
 15412 ENGINE INSTRUMENTS, TORQUEMETER
 15418 ENGINE INSTRUMENTS, VACUUM PUMP GAUGE
 14400 EXHAUST SYSTEM
 14412 EXHAUST SYSTEM, ACTUATOR
 14403 EXHAUST SYSTEM, AUGMENTOR TUBE
 14407 EXHAUST SYSTEM, BAFFLE
 14414 EXHAUST SYSTEM, BURNER RING
 14405 EXHAUST SYSTEM, CLAMP
 14408 EXHAUST SYSTEM, END PLATE
 14420 #EXHAUST SYSTEM, EXHAUST CONE/TAILOPIPE (JET ENGINE)
 14415 EXHAUST SYSTEM, EXTERNAL SUPERCHARGER (see: 14012 & 14416)
 14418 EXHAUST SYSTEM, EYELID (any variable exhaust)
 14417 EXHAUST SYSTEM, FUEL CONNECTION (afterburner)
 14404 EXHAUST SYSTEM, GASKET
 14410 EXHAUST SYSTEM, LEAD
 14401 EXHAUST SYSTEM, MANIFOLD/PIPE
 14402 EXHAUST SYSTEM, MUFFLER
 14411 EXHAUST SYSTEM, PROBE
 14406 EXHAUST SYSTEM, STACK
 14409 EXHAUST SYSTEM, TERMINAL
 14413 EXHAUST SYSTEM, TRACK
 14416 EXHAUST SYSTEM, TURBOCHARGER (see 14012 & 14415)
 14419 EXHAUST SYSTEM, WASTEGATE
 16600 FUEL INJECTION CONTROL/SYSTEM
 16602 FUEL INJECTION CONTROL, BELLCRANK
 16604 FUEL INJECTION CONTROL, CABLE
 16605 FUEL INJECTION CONTROL, LINKAGE
 16603 FUEL INJECTION CONTROL, PULLEY
 16601 FUEL INJECTION CONTROL, PUSH/PULL ROD
 16606 FUEL INJECTION CONTROL, TORQUE BOX

9913001: Aircraft Powerplant

15100	FUEL SYSTEM
15114	FUEL SYSTEM, CAP
15109	FUEL SYSTEM, CARBURETOR
15126	FUEL SYSTEM, CARBURETOR FLOAT
15132	FUEL SYSTEM, CROSS-FEED VALVE
15113	FUEL SYSTEM, DRAIN
15115	FUEL SYSTEM, DUMP VALVE
15124	FUEL SYSTEM, ELECTRIC BOOST PUMP
15120	FUEL SYSTEM, ELECTRIC FUEL TRIMMING
15105	FUEL SYSTEM, FILTER
15119	FUEL SYSTEM, FUEL CONTROL
15127	FUEL SYSTEM, FUEL FLOW DIVIDER/DISTRIBUTOR
15405	ENGINE INSTRUMENTS, FUEL FLOW GAUGE
15123	FUEL SYSTEM, FUEL JETTISON SYSTEM
15403	ENGINE INSTRUMENTS, FUEL PRESSURE GAUGE
15121	FUEL SYSTEM, FUEL SHUTOFF
15128	FUEL SYSTEM, FUEL QUANTITY FLOAT/SENSOR
15404	ENGINE INSTRUMENTS, FUEL QUANTITY GAUGE
15133	FUEL SYSTEM, GASCOLATOR
15111	FUEL SYSTEM, INJECTOR
15102	FUEL SYSTEM, LINE
15103	FUEL SYSTEM, LINE FITTING
15134	FUEL SYSTEM, LOW FUEL WARNING LIGHT
15118	FUEL SYSTEM, NOZZLE
15117	FUEL SYSTEM, OIL DILUTION
15131	FUEL SYSTEM, PC LINE
15108	FUEL SYSTEM, PRIMER SYSTEM
15110	FUEL SYSTEM, PUMP (engine driven; see:15124 for elec/boost)
15130	FUEL SYSTEM, RESERVOIR/HEADER TANK
15107	FUEL SYSTEM, SCREEN
15104	#FUEL SYSTEM, SELECTOR/VALVE
15106	FUEL SYSTEM, STRAINER
15101	FUEL SYSTEM, TANK
15125	FUEL SYSTEM, TRANSFER PUMP
15129	FUEL SYSTEM, VAPOR RETURN SYSTEM
15122	FUEL SYSTEM, VARIABLE STATOR ACTUATOR
15112	FUEL SYSTEM, VENT
14800	IGNITION SYSTEM
14814	IGNITION SYSTEM, AUTO RE-LIGHT SYSTEM (& Auto-Start Sys)
14816	IGNITION SYSTEM, CONTINUOUS IGNITION
14802	IGNITION SYSTEM, DISTRIBUTOR
14811	IGNITION SYSTEM, EXCITER
14806	IGNITION SYSTEM, HIGH TENSION WIRING
14807	IGNITION SYSTEM, IGNITER
14812	IGNITION SYSTEM, IGNITER PLUG
14815	IGNITION SYSTEM, IGNITION POINTS
14804	IGNITION SYSTEM, IGNITION COIL
14808	IGNITION SYSTEM, IGNITION HARNESS
14810	IGNITION SYSTEM, IGNITION LEAD
14809	IGNITION SYSTEM, IGNITION SWITCH
14805	IGNITION SYSTEM, LOW TENSION WIRING
14801	IGNITION SYSTEM, MAGNETO (includes magneto drive coupling)
14813	IGNITION SYSTEM, MAGNETO GROUNDING LEAD (P-LEAD)
14803	IGNITION SYSTEM, SPARK PLUG

9913001: Aircraft Powerplant

```

16700      INDUCTION AIR CONTROL/SYSTEM
16712      ENGINE INLET ASSEMBLY
16709      INDUCTION AIR CONTROL, AIR FILTER/SCREEN
16708      #INDUCTION AIR CONTROL, ALTERNATE AIR/DOOR
16702      INDUCTION AIR CONTROL, BELLCRANK
16704      INDUCTION AIR CONTROL, CABLE
16707      INDUCTION AIR CONTROL, INTAKE MANIFOLD
16705      INDUCTION AIR CONTROL, LINKAGE
16703      INDUCTION AIR CONTROL, PULLEY
16701      INDUCTION AIR CONTROL, PUSH/PULL ROD
16706      INDUCTION AIR CONTROL, TORQUE BOX
16711      INDUCTION AIR DUCTING
16710      RAM/INDUCTION AIR
15200      LUBRICATING SYSTEM
15216      LUBRICATING SYSTEM, CHIP DETECTOR
15206      LUBRICATING SYSTEM, OIL COOLER
15212      LUBRICATING SYSTEM, OIL FILLER CAP
15215      LUBRICATING SYSTEM, OIL FILTER/SCREEN
15209      LUBRICATING SYSTEM, OIL GASKET
15203      LUBRICATING SYSTEM, OIL HOSE
15202      LUBRICATING SYSTEM, OIL LINE
15207      LUBRICATING SYSTEM, OIL MAGNETIC PLUG
15213      LUBRICATING SYSTEM, OIL PORT/PASSAGE, INTERNAL
15204      LUBRICATING SYSTEM, OIL PRESSURE PUMP
15210      LUBRICATING SYSTEM, OIL REGULATOR
15205      LUBRICATING SYSTEM, OIL SCAVENGE PUMP
15208      LUBRICATING SYSTEM, OIL SEAL
15201      LUBRICATING SYSTEM, OIL TANK
15211      LUBRICATING SYSTEM, OIL TUBING
15214      LUBRICATING SYSTEM, OIL QUICKDRAIN/DRAIN PLUG
16910      MISCELLANEOUS, ENGINE
16903      ENGINE COMPARTMENT (i.e., Eng Compartment - Fire)
16901      HOUR METER
16911      MISC, ENGINE COMPRESSOR STALL/SURGE (modifier: 1220)
+16914      MISC, ENGINE HYDRAULIC LOCK
16912      MISC, ENGINE PRE-IGNITION AND/OR DETONATION (modifier: 1220)
<16913      MISC, ENGINE UNCONTAINED FAILURE (typically use blank modifier - 1220)
16902      POWERPLANT
16905      1 ENGINE
16906      2 ENGINES
16907      3 ENGINES
16908      ALL ENGINES
16200      MIXTURE CONTROL
16202      MIXTURE CONTROL, BELLCRANK
16204      MIXTURE CONTROL, CABLE
16205      MIXTURE CONTROL, LINKAGE
16203      MIXTURE CONTROL, PULLEY
16201      MIXTURE CONTROL, PUSH/PULL ROD
16206      MIXTURE CONTROL, TORQUE BOX
16300      OIL COOLER CONTROL
16302      OIL COOLER CONTROL, BELLCRANK
16304      OIL COOLER CONTROL, CABLE
16305      OIL COOLER CONTROL, LINKAGE
16303      OIL COOLER CONTROL, PULLEY
16301      OIL COOLER CONTROL, PUSH/PULL ROD
16306      OIL COOLER CONTROL, TORQUE BOX

```

9913001: Aircraft Powerplant

16100 PROPELLER CONTROL (see: 14515 for prop control unit)
 16102 PROPELLER CONTROL, BELLCRANK
 16104 PROPELLER CONTROL, CABLE
 16105 PROPELLER CONTROL, LINKAGE
 16103 PROPELLER CONTROL, PULLEY
 16101 PROPELLER CONTROL, PUSH/PULL ROD
 16106 PROPELLER CONTROL, TORQUE BOX
 16800 PROPELLER GOVERNOR CONTROL (see: 14508 for prop governor)
 16802 PROPELLER GOVERNOR CONTROL, BELLCRANK
 16804 PROPELLER GOVERNOR CONTROL, CABLE
 16805 PROPELLER GOVERNOR CONTROL, LINKAGE
 16803 PROPELLER GOVERNOR CONTROL, PULLEY
 16801 PROPELLER GOVERNOR CONTROL, PUSH/PULL ROD
 16806 PROPELLER GOVERNOR CONTROL, TORQUE BOX
 14500 PROPELLER SYSTEM/ACCESSORIES
 14521 PROPELLER SYSTEM/ACCESSORIES, AUTO-FEATHER SYSTEM(see 14517)
 14501 PROPELLER SYSTEM/ACCESSORIES, BLADE
 14505 PROPELLER SYSTEM/ACCESSORIES, COUNTERWEIGHT
 14507 PROPELLER SYSTEM/ACCESSORIES, DOME
 14503 PROPELLER SYSTEM/ACCESSORIES, ELECTRIC PITCH CTL
 14516 PROPELLER SYSTEM/ACCESSORIES, FEATHERING PUMP(see: 14905 for
 feathering motor & 14521 for auto-feather sys)
 14517 PROPELLER SYSTEM/ACCESSORIES, FEATHERING SYSTEM
 (includes dome spring/dome air charge)
 14508 PROPELLER SYSTEM/ACCESSORIES, GOVERNOR (see:16800,gov ctl)
 14502 PROPELLER SYSTEM/ACCESSORIES, HUB
 14504 PROPELLER SYSTEM/ACCESSORIES, HYDRAULIC PITCH CTL
 14511 PROPELLER SYSTEM/ACCESSORIES, LEADING EDGE CAP
 14519 PROPELLER SYSTEM/ACCESSORIES, PHASE SYNCHRONIZER
 14518 PROPELLER SYSTEM/ACCESSORIES, PITCH CHANGE MECH
 (includes blade stops)
 14513 PROPELLER SYSTEM/ACCESSORIES, PLANETARY GEAR
 14510 PROPELLER SYSTEM/ACCESSORIES, PROP BLADE RETENTION
 14515 PROPELLER SYSTEM/ACCESSORIES, PROP CONTROL UNIT (see:16500)
 14514 PROPELLER SYSTEM/ACCESSORIES, PROPELLER SLIP RING
 14520 PROPELLER SYSTEM/ACCESSORIES, REVERSING SYSTEM
 14512 PROPELLER SYSTEM/ACCESSORIES, SAFETY CLIP
 14506 PROPELLER SYSTEM/ACCESSORIES, SPINNER
 14509 PROPELLER SYSTEM/ACCESSORIES, SYNCHRO MECHANISM
 14522 PROPELLER SYSTEM/DRIVE ASSEMBLY(excludes reduction gear asy)
 15600 REDUCTION GEAR ASSY
 15607 REDUCTION GEAR ASSY, ACCESSORY DRIVE BEARING
 15606 REDUCTION GEAR ASSY, ACCESSORY DRIVE GEAR
 15605 REDUCTION GEAR ASSY, ACCESSORY DRIVE SHAFT
 15608 REDUCTION GEAR ASSY, BOSS EYE BOLT
 15601 REDUCTION GEAR ASSY, CASTING
 15602 REDUCTION GEAR ASSY, MOUNT PAD
 15609 REDUCTION GEAR ASSY, PROPELLER SHAFT
 15610 REDUCTION GEAR ASSY, PROPELLER SHAFT BEARING
 15603 REDUCTION GEAR ASSY, REDUCTION GEAR
 15604 REDUCTION GEAR ASSY, REDUCTION GEAR BEARING
 16000 THROTTLE/POWER LEVER
 16002 THROTTLE/POWER LEVER, BELLCRANK
 16007 THROTTLE/POWER LEVER, BETA CONTROL
 16004 THROTTLE/POWER LEVER, CABLE
 16005 THROTTLE/POWER LEVER, LINKAGE
 16003 THROTTLE/POWER LEVER, PULLEY
 16001 THROTTLE/POWER LEVER, PUSH/PULL ROD
 16006 THROTTLE/POWER LEVER, TORQUE BOX

9913001: Aircraft Powerplant

15800	THRUST REVERSER
15811	THRUST REVERSER, ACCUMULATOR
15805	THRUST REVERSER, ACTUATOR
15809	THRUST REVERSER, BLOCKER DOOR
15815	THRUST REVERSER, BLOCKING DEVICE (ELECTRICAL)
15816	THRUST REVERSER, BLOCKING DEVICE (MECHANICAL)
15810	THRUST REVERSER, CASCADE
15814	THRUST REVERSER, COCKPIT CONTROL
15804	THRUST REVERSER, CONTROL VALVE
15806	THRUST REVERSER, DOOR
15808	THRUST REVERSER, EJECTOR
15802	THRUST REVERSER, FILTER
15812	THRUST REVERSER, INDICATOR
15803	THRUST REVERSER, PILOT VALVE
15801	THRUST REVERSER, PUMP
15807	THRUST REVERSER, TRACK
15813	THRUST REVERSER, WIRING
15500	TORQUEMETER SYSTEM
15502	TORQUEMETER SYSTEM,OIL PRESSURE TYPE
15501	TORQUEMETER SYSTEM,SHAFT TYPE
14300	TURBINE ASSEMBLY
14315	TURBINE ASSEMBLY, AFT FAN
14311	TURBINE ASSEMBLY, AIR SEAL
14301	TURBINE ASSEMBLY, CASING
14305	TURBINE ASSEMBLY, NOZZLE
14307	TURBINE ASSEMBLY, NOZZLE RETENTION
14306	TURBINE ASSEMBLY, NOZZLE SUPPORT
14312	TURBINE ASSEMBLY, OIL SEAL
14304	TURBINE ASSEMBLY, RING
14302	TURBINE ASSEMBLY, SEAL
14313	TURBINE ASSEMBLY, SHAFT
14314	TURBINE ASSEMBLY, SHAFT BEARING
14303	TURBINE ASSEMBLY, SHROUD (includes containment shield)
14309	TURBINE ASSEMBLY, TURBINE BLADE
14308	TURBINE ASSEMBLY, TURBINE WHEEL
14310	TURBINE ASSEMBLY, WHEEL SPACER
15900	TURBOSHAFT ENGINE (use for helicopter)
15903	TURBOSHAFT ENGINE, COMBUSTION CHAMBER
15905	TURBOSHAFT ENGINE, FREE (POWER) TURBINE
15909	TURBOSHAFT ENGINE, FREE TURBINE GOVERNOR
15911	TURBOSHAFT ENGINE, FREE TURBINE OVERSPEED SENSOR
15906	TURBOSHAFT ENGINE, FREE TURBINE SHAFT
15901	TURBOSHAFT ENGINE, GAS GENERATOR (also called gas producer)
15910	TURBOSHAFT ENGINE, GAS GENERATOR OVRSPD SENSOR/GOV
15902	TURBOSHAFT ENGINE, GAS GENERATOR TURBINE
15904	TURBOSHAFT ENGINE, GAS GENERATOR TURBINE SHAFT (includes spur adapter gear shaft)
15908	TURBOSHAFT ENGINE, POWER OUTPUT SHAFT
15907	TURBOSHAFT ENGINE, REDUCTION GEAR BOX

9913001: Aircraft Powerplant

SECTION IA - MISCELLANEOUS AIRCRAFT/EQUIPMENT SUBJECTS

17400 AERIAL APPLICATION EQUIPMENT
17402 AERIAL APPLICATION MATERIALS (i.e., dispensing materials, incendiary devices, pellets, etc)
17401 SPRAY/DUSTING EQUIPMENT #(includes emergency/load release sys)
17300 AIRCRAFT PERFORMANCE
17303 AIRCRAFT PERFORMANCE, CLIMB CAPABILITY
17311 AIRCRAFT PERFORMANCE, CROSSWIND CAPABILITY
17304 AIRCRAFT PERFORMANCE, ENGINE OUT CAPABILITY
17309 AIRCRAFT PERFORMANCE, HYDROPLANING CONDITION#(modifier:1220)
17310 AIRCRAFT PERFORMANCE, HELICOPTER HOVER PERFORMANCE
17302 AIRCRAFT PERFORMANCE, LANDING CAPABILITY
17306 AIRCRAFT PERFORMANCE, ROLLING MANEUVERS
17301 AIRCRAFT PERFORMANCE, TAKEOFF CAPABILITY
17305 AIRCRAFT PERFORMANCE, TURN CAPABILITY
17308 AIRCRAFT PERFORMANCE, TWO OR MORE ENGINES
17307 AIRCRAFT PERFORMANCE, YAWING MANEUVERS
17600 BALLOON EQUIPMENT
17602 BALLOON EQUIPMENT, BASKET
17604 BALLOON EQUIPMENT, CONTROL SYSTEM (includes ballast, vent &
17601 BALLOON EQUIPMENT, ENVELOPE
17605 BALLOON EQUIPMENT, BURNER SYSTEM (includes blast valve(s), control valve(s), ignition & pilot light)
17606 BALLOON EQUIPMENT, HEAT INDICATING SYSTEM
17603 BALLOON EQUIPMENT, SUSPENSION SYSTEM/CABLES
17710 MISCELLANEOUS, LIGHTER-THAN-AIR CRAFT/EQUIPMENT (includes mooring facilities, drop line(s), launch harness, tether system, pibal(s) & other craft with lighter-than-air or buoyant gas) (see 17500 for advertising equipment)
17700 BLIMP/AIRSHIP EQUIPMENT
17701 BLIMP/AIRSHIP, BALLAST SYSTEM
17702 BLIMP/AIRSHIP, ENVELOPE/HULL
17703 BLIMP/AIRSHIP, GAS/AIR PRESSURE/FLIGHT CONTROL SYS
17704 BLIMP/AIRSHIP, GONDOLA
17710 MISCELLANEOUS, LIGHTER-THAN-AIR CRAFT/EQUIPMENT (see same entry (17710) under "balloon equipment" above)
17000 FLUID
17004 FLUID, ADI FLUID (reciprocating engines)
17006 FLUID, ANTI-ICE ADDITIVE
17010 FLUID, COOLANT
17001 FLUID, FUEL (normally used with fuel exhaustion/starvation)
17008 FLUID, FUEL GRADE
17003 FLUID, HYDRAULIC
17011 FLUID, LAVATORY
17002 FLUID, OIL
17009 FLUID, OIL GRADE
17007 FLUID, SYNTHETIC OIL
17005 FLUID, WATER
17012 LUBRICANT, GREASE

9914001: Aircraft/Equipment Subjects

17200 LIGHT(S)
 17208 ANNUNCIATOR PANEL LIGHT(S) (warning lights)
 17205 CARGO COMPARTMENT LIGHT(S)
 17210 DOOR LIGHT(S)
 17204 EMERGENCY LIGHT(S)
 17211 EMERGENCY LIGHT(S), FLOOR/SEAT
 17207 EXTERIOR LIGHT(S)
 17209 FLASHLIGHT
 17201 FLIGHT COMPARTMENT LIGHT(S)
 17202 INSTRUMENT LIGHT(S)
 17206 LANDING LIGHT(S)
 17203 PASSENGER COMPARTMENT LIGHT(S)
 17100 MISC EQPT/FURNISHINGS
 17116 CARGO/BAGGAGE
 17117 HAZARDOUS MATERIAL
 17118 MISC EQPT/FURNISHINGS, AIRCRAFT TIE-DOWN(S)
 17101 MISC EQPT/FURNISHINGS, BUFFET
 17102 MISC EQPT/FURNISHINGS, CARGO RESTRAINTS
 17119 MISC EQPT/FURNISHINGS, ENGINE INLET COVERS
 17108 MISC EQPT/FURNISHINGS, EVACUATION ALARM
 17114 MISC EQPT/FURNISHINGS, FIRST AID EQUIPMENT
 17103 MISC EQPT/FURNISHINGS, GALLEY
 17104 MISC EQPT/FURNISHINGS, GALLEY/PERSONNEL LIFT
 17120 MISC EQPT/FURNISHINGS, HELMET
 17105 MISC EQPT/FURNISHINGS, LAVATORIES
 17109 MISC EQPT/FURNISHINGS, LIFEVEST
 17121 MISC EQPT/FURNISHINGS, MEGAPHONE
 17115 MISC EQPT/FURNISHINGS, PARACHUTE/DRAG CHUTE
 17122 MISC EQPT/FURNISHINGS, PARACHUTIST RESTRAINT SYSTEM (i.e.,
 when no seats are installed for parachutists)
 17123 MISC EQPT/FURNISHINGS, PLACARD/LABEL/MARKING(S)
 +17129 MISC EQPT/FURNISHINGS, PROTECTIVE CLOTHING
 17124 MISC EQPT/FURNISHINGS, PROTECTIVE COVER (i.e., pitot tube
 cover, engine inlet cover, air intake cover)
 17107 MISC EQPT/FURNISHINGS, RAFTS
 17110 MISC EQPT/FURNISHINGS, SEAT BELT
 17111 MISC EQPT/FURNISHINGS, SHOULDER HARNESS
 17106 MISC EQPT/FURNISHINGS, SLIDES
 +17127 MISC EQPT/FURNISHINGS, SMOKE GENERATING EQUIPMENT
 17125 MISC EQPT/FURNISHINGS, SMOKE MASKS
 17112 MISC EQPT/FURNISHINGS, STORAGE BINS/RACKS
 17113 MISC EQPT/FURNISHINGS, SURVIVAL EQUIPMENT
 +17128 MISC EQPT/FURNISHINGS, TOW BAR
 17126 MISC EQPT/FURNISHINGS, WHEEL CHOCKS
 17500 TOWING/ADVERTISING/EXTERNAL LOAD EQUIPMENT (includes non-elec
 sign; see:17400&17401 for Aerial Application Equipment")
 17502 ELECTRIC SIGN ON AIRCRAFT
 17506 EXTERNAL LOAD CABLE/HOOK (includes long line/cable)
 17505 EXTERNAL LOAD SLING/HARNESS
 17507 EXTERNAL LOAD RELEASE SYSTEM
 17504 GLIDER LAUNCH/TOW EQUIPMENT
 17503 PICKUP EQUIPMENT
 17501 SIGN TOWING EQUIPMENT

9914001: Aircraft/Equipment Subjects

SECTION IA - AIRCRAFT/EQUIPMENT MODIFIERS

(STRUCTURE/SYSTEM/POWERPLANT/MISCELLANEOUS)

1227 ACTIVATED
1101 ARCING
1102 ASSEMBLY
1103 ASYMMETRICAL
1228 AUTOMOTIVE (i.e., Fuel Grade - Automotive)
1104 BENT
1105 BINDING(MECHANICAL)
1229 BLADE STRIKE (i.e., Tail Rotor - Blade Strike)
1106 BLOCKED(PARTIAL)
1107 BLOCKED(TOTAL)
1109 BRITTLE FRACTURE
1110 BUCKLED
1230 BUMPED
1111 BURNED
1112 BURST
1113 CHAFED
1114 CLEARANCE
1209 CLOSED
1221 COLLAPSED
1208 COMPRESSION
1201 COMPOSITE MATERIAL
1115 CONTAMINATION
1231 CONTAMINATION, OTHER THAN WATER
1232 CONTAMINATION, WATER
1116 CORRODED
1117 CRACKED
1118 CROSS/STRIPPED THREADED
1233 CUT/SEVERED
1119 DECOMPRESSION
1234 DEBONDED
+1294 DEFLATED
1203 DELAMINATION
1120 DEPLOYED INADVERTENTLY
1121 DETERIORATED
1122 DIRTY(FOGGY) (i.e., Windshield - Dirty/Foggy)
1123 DISABLED
1235 DISCHARGED
1125 DISCONNECTED
1202 DISENGAGED
1124 DISINTEGRATED
1126 DISTORTED
<1271 DIVERGED
1127 DUMPED
1236 DYNAMIC IMBALANCE
+1272 ELECTROMAGNETIC INTERFERENCE
1210 ELONGATED
1128 ENGAGED
1216 ENTANGLED
1237 ENTERED
1129 ERRATIC
1207 ERODED
1130 EXCEEDED
1238 EXCESSIVE FLOW/OUTPUT
1131 EXHAUSTION
1200 EXFOLIATION
1132 EXPLODED
1239 EXTENDED
1133 EXTRANEIOUS
1240 FAILURE
1134 FAILURE,PARTIAL
1135 FAILURE,TOTAL
1136 FALSE INDICATION
1137 FATIGUE
1138 FIRE
1241 FLOW RESTRICTED

1139 FLUCTUATING
 1140 FLUTTER
 1242 FOREIGN MATERIAL/SUBSTANCE
 1141 FOREIGN OBJECT
 1145 FOREIGN OBJECT DAMAGE
 1218 FOULED
 1224 FRACTURED
 1211 FRAYED
 +1273 FRETTED
 1243 FROST (i.e., Wing - Frost)
 1142 FROZEN
 1143 FUEL
 1144 FUMES
 +1274 GALLED
 1244 HARDOVER (i.e., Flight Control System - Hardover)
 1245 HIGH PRESSURE (see 1177 for Pressure Excessive)
 1146 ICE
 1246 ICE INGESTION (i.e., engine ice ingestion)
 1247 IMPEDED
 1147 IMPROPER
 1256 #IMPROPER BALANCE
 +1275 IMPROPERLY SERVICED (i.e.; landing gear strut)
 +1276 IMPROPER/POOR WELD
 +1277 INACCURATE
 1149 INADEQUATE
 1148 INCORRECT
 1248 INGESTED
 1150 INOPERATIVE
 1151 JAMMED
 1152 LACK OF
 1153 LEADED #(i.e., Spark Plugs - Leaded)
 1154 LEAK
 1155 LIFE EXPIRED
 1156 LOCKED
 1157 LOOSE
 1249 LOOSE PART/BOLT/NUT/CLAMP/ETC
 1158 LOSS,PARTIAL
 1159 LOSS,TOTAL
 1160 LOW COMPRESSION
 1161 LOW LEVEL
 1250 LOW PRESSURE (see 1178 for pressure too low)
 1251 MALFUNCTION (use sparingly, use only when a more specific code
 is not available)
 1199 MELTED
 1252 MISROUTED
 1214 MISSING
 1162 MOVEMENT RESTRICTED
 1163 NO PRESSURE
 1253 NOT ACTIVATED
 1254 NOT CONNECTED
 +1278 NOT DEACTIVATED
 +1279 NOT DEPLOYED
 +1280 NOT DISCONNECTED
 +1281 NOT DISENGAGED
 1164 NOT DUMPED
 1165 NOT ENGAGED
 1205 NOT INSTALLED
 +1282 NOT MODIFIED
 +1283 NOT OPERATING
 1166 NOT REMOVED
 1226 NOT SAFETIED
 1213 NOT SECURED
 1167 NOT SWITCHED
 1255 OBSTRUCTED
 1168 OPEN
 +1284 OSCILLATION
 1169 OTHER
 +1285 OUT OF CALIBRATION
 1257 OUTPUT HIGH

1170 OUTPUT LOW
 +1286 OVERINFLATED
 1171 OVERLOAD
 +1287 OVERSIZE
 1172 OVERSPEED
 1173 OVERTEMPERATURE
 1174 OVERTORQUE
 1270 OVERVOLTAGE
 1175 PENETRATED
 +1288 PERFORATED
 1176 POPPED/TRIPPED
 1177 PRESSURE EXCESSIVE
 1178 PRESSURE TOO LOW
 1179 PREVIOUS DAMAGE
 +1289 PUNCTURED
 +1290 REDUCED
 1258 RESTRICTED
 1259 REVERSED
 1222 RUPTURED
 1198 ROTTED/WEATHERED
 1260 SCORED
 1215 SEIZED
 1180 SEPARATION (use for separation of component from aircraft)
 +1291 SERVICE LIFE EXCEEDED
 1204 SHEARED
 1269 SHIFTED
 1181 SHORTED
 1195 SIPHONING
 1206 SLIPPED
 1182 SMOKE
 1261 SNAGGED (i.e., External Cable - Snagged)
 1217 SOAKED
 1197 STALL (turbine engines only)
 1183 STARVATION
 1184 STRESS CORROSION
 1185 STRIPPED THREAD
 +1295 STOWED (i.e., stowed rudder pedals)
 1262 SUDDEN STOPPAGE
 1196 SURGE
 1186 SWITCHED OFF
 1263 TEAR/TORN (i.e., balloon fabric)
 1264 TIMING IMPROPER
 1187 TOO COLD
 +1292 TORCHED
 1265 TWISTED
 1266 UNAPPROVED
 1108 UNAPPROVED PART* (see definition)
 1267 UNCOMMANDED
 1223 UNDERSPEED
 1188 UNDERTORQUED
 1189 UNDETERMINED (for mech sys only) (see: 25000 for other)
 1212 UNLATCHED
 1190 UNLOCKED
 1191 UNMARKED
 1225 UNRELIABLE
 1268 VAPOR LOCK (i.e., Fuel System - Vapor Lock)
 1192 VIBRATION
 1219 WARPED
 1193 WATER (modifier; see: 17005 for Fluid, Water)
 +1293 WEAK SIGNAL
 1194 WORN
 1220 (will leave blank space, use only as required)

SECTION IA - ATC/WEATHER/AIRPORT FACILITY/EQUIPMENT SUBJECTS

18000 AIR NAVIGATION AIDS
18002 AIR NAVIGATION AIDS, DECCA
18005 AIR NAVIGATION AIDS, DME
18009 AIR NAVIGATION AIDS, GPS (global positioning system)
18006 AIR NAVIGATION AIDS, LORAN
18007 AIR NAVIGATION AIDS, NDB
18008 AIR NAVIGATION AIDS, OMEGA
18003 AIR NAVIGATION AIDS, TACAN
18001 AIR NAVIGATION AIDS, VOR
18004 AIR NAVIGATION AIDS, VORTAC
18200 APPROACH AIDS
18211 APPROACH AIDS, ASR
18201 APPROACH AIDS, COMPLETE ILS
18205 APPROACH AIDS, COMPLETE MLS
18204 APPROACH AIDS, ILS BACKCOURSE
18203 APPROACH AIDS, ILS GLIDE SLOPE
18202 APPROACH AIDS, ILS LOCALIZER
18213 APPROACH AIDS, LDA
18209 APPROACH AIDS, MARKER BEACON
18207 APPROACH AIDS, MLS GLIDE SLOPE
18206 APPROACH AIDS, MLS LOCALIZER
18212 APPROACH AIDS, PAR
18210 APPROACH AIDS, SDF
18208 APPROACH AIDS, VOR/TVOR
18500 CONTROL TOWER
18400 METEOROLOGICAL SERVICES
18406 METEOROLOGICAL EQUIPMENT
18401 METEOROLOGICAL SERVICES, ATIS
18407 METEOROLOGICAL SERVICES, COMMERCIAL
18404 METEOROLOGICAL SERVICES, EFAS
+18408 METEOROLOGICAL SERVICES, LLWAS
18402 METEOROLOGICAL SERVICES, PATWAS
18405 METEOROLOGICAL SERVICES, SCHED WEATHER BROADCAST
18403 METEOROLOGICAL SERVICES, TWEB
18600 MISCELLANEOUS, ATC FACILITY/EQUIPMENT
18601 ATC AUTOMATION SYSTEM
18300 PROCEDURES (ATC)
18307 AIRWAYS AND ROUTE SYSTEM PROCEDURE
18310 APPROACH CONTROL PROCEDURE
18301 ATC CLEARANCE PROCEDURE
18305 DEPARTURE PROCEDURE
18308 HOLDING AIRSPACE PROCEDURE
18304 INSTRUMENT APPROACH PROCEDURE
18306 INSTRUMENT DEPARTURE PROCEDURE
18302 MISSED APPROACH PROCEDURE
18309 STANDARD TERMINAL ARRIVAL PROCEDURE
18311 TRAFFIC PATTERN PROCEDURE
18303 VISUAL APPROACH PROCEDURE
18100 RADAR (ATC)
18102 RADAR, APPROACH/DEPARTURE
18106 RADAR, ASDE
18103 RADAR, ATC RADAR BEACON SYSTEM/MODE S
18104 RADAR, BRITE
18107 RADAR, CONFLICT ALERT
18101 RADAR, EN ROUTE
18105 RADAR, MSAW
18108 RADAR, WEATHER (ATC/GROUND FACILITY)

9915001: ATC/Weather/Airport Facility/Equipment Subjects

19000 AIRPORT/FACILITIES
19007 AIRPORT FACILITIES, AERONAUTICAL LIGHT BEACON(OBST)
+19029 AIRPORT FACILITIES, ARRESTING CABLE/SYSTEM
+19030 AIRPORT FACILITIES, CONSTRUCTION/SIGN/BARRIER
19019 AIRPORT FACILITIES, CENTERLINE LIGHTS
19022 AIRPORT FACILITIES, FUEL STORAGE
19018 AIRPORT FACILITIES, HELIPAD
19017 AIRPORT FACILITIES, HELIPORT
19006 AIRPORT FACILITIES, IN-RUNWAY LIGHTS
19002 AIRPORT FACILITIES, INSTRUMENT APPROACH LIGHTS
19016 AIRPORT FACILITIES, OBSTRUCTION MARKING
19023 AIRPORT FACILITIES, PERIMETER FENCE
19010 AIRPORT FACILITIES, RAMP FACILITIES
19028 AIRPORT FACILITIES, REFUELING TRUCK/EQUIPMENT
19009 AIRPORT FACILITIES, ROTATING BEACON
19005 AIRPORT FACILITIES, RUNWAY EDGE LIGHTS
19004 AIRPORT FACILITIES, RUNWAY END IDENT LIGHTS(REIL)
19001 AIRPORT FACILITIES, RUNWAY/LANDING AREA CONDITION
19008 AIRPORT FACILITIES, RUNWAY MARKING
19021 AIRPORT FACILITIES, RUNWAY OVERRUN AREA
19011 AIRPORT FACILITIES, RUNWAY REMAINING DIST MARKERS
19020 AIRPORT FACILITIES, RUNWAY SAFETY AREA
19024 AIRPORT FACILITIES, RUNWAY SIGN(S)
19013 AIRPORT FACILITIES, TAXIWAY CONDITION
19014 AIRPORT FACILITIES, TAXIWAY LIGHTING
19015 AIRPORT FACILITIES, TAXIWAY MARKING
19025 AIRPORT FACILITIES, TAXIWAY SIGN(S)
19026 AIRPORT FACILITIES, UNICOM
19003 AIRPORT FACILITIES, VISUAL APCH SLOPE IND(VASI)
19012 AIRPORT FACILITIES, WIND DIRECTION INDICATOR
19027 AIRPORT, RAMP SECURITY
19100 AIRPORT FIRE/RESCUE SERVICE
19103 AIRPORT FIRE/RESCUE SERVICE, CERTIFICATION
19102 AIRPORT FIRE/RESCUE SERVICE, EQUIPMENT
19105 AIRPORT FIRE/RESCUE SERVICE, NOTIFICATION
19104 AIRPORT FIRE/RESCUE SERVICE, RESPONSE PLAN
19101 AIRPORT FIRE/RESCUE SERVICE, RESPONSE TIME
19300 AIRPORT EQUIPMENT
19301 AIRPORT EQUIPMENT, RUNWAY BRAKING MEASUREMENT
19302 AIRPORT EQUIPMENT, SNOW REMOVAL
+19303 AIRPORT EQUIPMENT, GROUND SUPPORT (tug, APU, deice equipment, etc)
#(See 19028 for "Refueling Truck/Equipment")

9915001: ATC/Weather/ Airport Facility/Equipment Subjects

SECTION IA - MISCELLANEOUS/PUBLICATION SUBJECTS

21100 AIRCRAFT MANUALS
21102 AIRCRAFT MANUALS, PERFORMANCE INFORMATION
21103 AIRCRAFT MANUALS, PROCEDURE INFORMATION
21104 AIRCRAFT MANUALS, REVISION
21101 AIRCRAFT MANUALS, SYSTEM INFORMATION
21000 CHARTS/OTHER MANUALS
21001 APPROACH CHARTS
21004 ATC MANUALS
21002 EN ROUTE CHARTS
21003 CHART REVISION

9916001: Publication Subjects

SECTION IA - ATC/WX/ARPT FACILITY/EQUIPMENT/PUBLICATION MODIFIERS

+2128 BEND/CURVE IN RUNWAY/LANDING AREA
2114 CLOSED
2100 CONGESTED
2112 DELAYED
2115 EXPOSED RUNWAY LIP/EDGE
2116 EXPOSED TAXIWAY EDGE
2101 FAILURE,PARTIAL
2102 FAILURE,TOTAL
2117 FALSE/INCORRECT INDICATION
2103 FOREIGN SUBSTANCE COVERED
2118 GRADIENT, EXCESSIVE (i.e., runway or taxiway gradient)
+2131 HARD/PAVED SURFACE (use only if it contributes to adverse situation; i.e.,
adverse spin-up of oversized tires, tire slippage on rim, problem related
to lndg of ski equipped acft, run-on lndg of skid equipped helicopter, etc)
2119 IMPROPER
2105 INACCURATE
2104 INADEQUATE
2106 INOPERATIVE
2120 LACK OF FRANGIBILITY (i.e.; runway/taxiway signs)
2107 LOSS(PARTIAL)
2108 LOSS(TOTAL)
2121 NARROW
+2129 NOT AVAILABLE (i.e.; ground support equipment not available)
2122 NOT AVAILABLE ON SELECTED RUNWAY (i.e.,Lights- Not Avail on Rwy)
2123 NOT INSTALLED
2113 NOT MAINTAINED
2111 NOT OPERATING
2124 OTHER
2109 UNAPPROVED
2110 UNAVAILABLE
2125 UNEVEN #(i.e., runway uneven or hump/crown in runway)
2126 UNIDIRECTIONAL (i.e., unidirectional runway)
2127 UNMARKED
+2130 (will leave blank space, use only when required)

**17001: ATC/WX/ARPT Facility/
Equipment/Publication Modifiers**

NOTE: Terrain modifiers may be used for runway, overrun & taxiway conditions.

SECTION IA - TERRAIN/RUNWAY CONDITIONS

19001 AIRPORT FACILITIES, RUNWAY/LANDING AREA CONDITION (subject)
19200 TERRAIN CONDITIONS (subject)

TERRAIN/RUNWAY MODIFIERS

2435 BERM
2437 BLIND/BOX CANYON
2441 CLIFF
2442 CONGESTED/CONFINED AREA (congested parking or confined taxi/takeoff area)
2443 CONSTRUCTION AREA
2401 CROP
2402 #DIRT BANK/RISING EMBANKMENT (includes levee)
2403 DISPLACED THRESHOLD
2404 DITCH (see 2436 for Ravine)
2405 DOWNHILL.
2444 #DROP-OFF/DESCENDING EMBANKMENT
2406 FOAMED
2433 FROZEN
2440 GRASS
2407 GROUND
2411 HIDDEN OBSTRUCTION(S) (i.e., in tall grass; see 2516 submerged obj)
2410 HIGH OBSTRUCTION(S) (can use for tall objs, when not impacted)
2408 HIGH TERRAIN
2409 HIGH VEGETATION (weeds, brush, willows, tall grass; not mature trees)
2412 ICY
2445 LARGE WAVE/SWELL (i.e., during water landing or takeoff)
2413 LOOSE GRAVEL/SANDY (see 2421 for sand bar)
2414 LOOSE OBJECTS
2416 MOUNTAINOUS/HILLY
+2451 MUDDY
+2452 MUSKEG
2415 NONE SUITABLE
2417 OPEN FIELD
2446 OTHER
2447 PINNACLE
2438 PITCHING DECK
+2453 PLOWED/FURROWED (i.e., plowed/furrowed farmland)
2436 RAVINE (see: 2404 for ditch)
2439 RESIDENTIAL AREA
2418 RISING
2431 ROADWAY/HIGHWAY
2448 ROCK(S)/BOULDER(S)
2419 ROUGH/UNEVEN
2420 RUNWAY
2421 SAND BAR
2449 SHORT RUNWAY/LANDING AREA
2422 SLUSH COVERED
2424 SNOW COVERED
2423 SNOWBANK
2425 SOFT
2450 SWAMPY (includes marsh)
2434 TUNDRA
2426 UPHILL
2430 WATER
2432 WATER, FROZEN (river/lake)
2427 WATER, GLASSY
2428 WATER, ROUGH
2429 WEAK ICE (on river/lake)
2500 WET

9918001: Terrain/runway Conditions

SECTION IA - OBJECT CONDITIONS

20200 OBJECT (subject)

OBJECT MODIFIERS

2502 AIRCRAFT MOVING ON GROUND
2503 AIRCRAFT PARKED/STANDING
2504 AIRPORT FACILITY
2534 AIRPORT SIGN/MARKER (Code "2525-sign" for non-airport sign)
2535 HANGAR/AIRPORT BUILDING
2536 VASI LIGHT/SYSTEM
2537 WIND SOCK/INDICATOR
2505 ANIMAL(S) (can be a cause)
2538 ANTENNA
2506 APPROACH LIGHT/NAVAID
2507 BIRD(S)
2526 BRIDGE/OVERPASS
2508 BUILDING(NONRESIDENTIAL)
2510 ELECTRICAL TOWER
2509 ELECTRICAL TOWER(MARKED)
2511 FENCE
2529 FENCE POST
2539 GROUND POWER UNIT
2512 GUY WIRE (see 2521 thru 2524 for other wire codes)
2532 OTHER
2513 OTHER PERSON
2528 POLE (see 2518/2519 for utility pole codes)
2514 RESIDENCE
2515 RUNWAY LIGHT
2525 SIGN(i.e.,road sign hit drg emerg lndg;also see arpt sign/marker)
2516 SUBMERGED OBJECT
2540 TAXIWAY LIGHT
2530 TOWER(MARKED)
2531 TOWER
2517 TREE(S)
2533 UNDETERMINED
2519 UTILITY POLE
2518 UTILITY POLE(MARKED)
2520 VEHICLE
2527 WALL/BARRICADE
2522 WIRE,STATIC (see 2512 for Guy Wire)
2521 WIRE,STATIC(MARKED)
2524 WIRE,TRANSMISSION
2523 WIRE,TRANSMISSION(MARKED)

19001: Object Conditions

SECTION IA - WEATHER CONDITIONS

20000 WEATHER CONDITION (subject)

WEATHER MODIFIERS

2201 BELOW APPROACH/LANDING MINIMUMS (visibility/RVR)
2202 CARBURETOR ICING CONDITIONS
2204 CLOUDS
2203 CROSSWIND
2205 DOWNDRAFT
2240 #DRIZZLE/MIST
2245 DUST DEVIL/WHIRLWIND
2206 FOG
2246 FREEZING RAIN
2207 GUSTS
2208 HAIL
2209 HAZE/SMOKE
2212 HIGH DENSITY ALTITUDE
2210 HIGH WIND
2211 HURRICANE
2213 ICING CONDITIONS
2233 ICE FOG
2215 LIGHTNING
2216 LIGHTNING STRIKE
2214 LOW CEILING
2239 MICROBURST/DRY
2238 MICROBURST/WET
2217 MOUNTAIN WAVE
2234 NO THERMAL LIFT (for gliders/sailplanes)
2218 OBSCURATION
2248 OTHER
2247 PRECIPITATION STATIC CONDITIONS
2219 RAIN
2237 SAND/DUST STORM
2220 SNOW #(includes sleet)
2221 STATIC DISCHARGE
2249 SUDDEN WINDSHIFT
2222 TAILWIND
2223 TEMPERATURE EXTREMES
2250 TEMPERATURE, HIGH
2251 TEMPERATURE, LOW
2252 TEMPERATURE INVERSION
2235 THERMAL LIFT (for gliders/sailplanes)
2228 THUNDERSTORM
2244 THUNDERSTORM, OUTFLOW
2229 TORNADO
2224 TURBULENCE
2226 TURBULENCE IN CLOUDS
2227 TURBULENCE(THUNDERSTORMS)
2225 TURBULENCE,CLEAR AIR
+2256 TURBULENCE, CONVECTION INDUCED
2253 TURBULENCE, TERRAIN INDUCED (see: 2217 for mountain wave)
2232 UNFAVORABLE WIND
2236 UPDRAFT
2254 VARIABLE WIND
2255 VOLCANIC ASH
2230 WHITEOUT
2231 WINDSHEAR

9920001: Weather Conditions

SECTION IA - LIGHT CONDITIONS

20100 LIGHT CONDITION (subject)

LIGHT CONDITION MODIFIERS

2307 BRIGHT NIGHT
2305 DARK NIGHT
2301 DAWN
2302 DAYLIGHT
2303 DUSK
2304 NIGHT
2308 OTHER (i.e., strobe light, shadows, bright light/lamp, etc)
2306 SUNGLARE

9930001:Light Conditions

SECTION IB - AIRCRAFT/EQUIPMENT PERFORMANCE SUBJECTS

22600 ANTI-ICE/DEICE SYSTEM
 22900 AUTOPILOT
 22700 COMMUNICATION EQUIPMENT
 22701 TRANSPONDER
 22400 ELECTRICAL SYSTEM
 22402 ALTERNATOR
 22401 BATTERY
 22405 CIRCUIT BREAKER
 22403 GENERATOR
 22404 INVERTER
 22800 FIRE EXTINGUISHING EQUIPMENT
 22100 FLIGHT CONTROLS
 22104 AILERON
 22105 AILERON TRIM
 22101 ELEVATOR
 22103 ELEVATOR TRIM
 22121 FLAPS (i.e., improper use of)
 22111 LOWERING OF FLAPS
 22115 LOWERING OF LEADING EDGE FLAPS
 22113 LOWERING OF SLATS
 22110 RAISING OF FLAPS
 22114 RAISING OF LEADING EDGE FLAPS
 22112 RAISING OF SLATS
 22119 REMOVAL OF CONTROL/GUST LOCK(S)
 22106 RUDDER
 22109 RUDDERVATOR
 22107 RUDDER TRIM
 22118 SPEED BRAKES
 22117 SPOILER EXTENSION
 22116 SPOILER RETRACTION
 22102 STABILATOR
 22108 STABILATOR TRIM
 22120 TRIM SETTING
 22200 FUEL SYSTEM
 22202 FUEL BOOST PUMP SELECTOR POSITION
 22203 FUEL DUMPED
 22205 FUEL MANAGEMENT
 22204 FUEL SUPPLY
 22201 FUEL TANK SELECTOR POSITION
 22500 HYDRAULIC SYSTEM
 22000 LANDING GEAR
 22010 BRAKES, ANTI-SKID
 22005 BRAKES(EMERGENCY)
 22004 BRAKES(NORMAL)
 22003 GEAR DOWN AND LOCKED
 22002 GEAR EXTENSION
 22009 GEAR PIN (includes scissor pin)
 22001 GEAR RETRACTION
 22007 NOSEWHEEL STEERING
 22006 PARKING BRAKES
 22008 TAILWHEEL LOCK
 22300 POWERPLANT CONTROLS
 22308 ADEQUATE ROTOR RPM (see 24558 for "rotor rpm")
 +22317 ALTERNATE AIR/CONTROL
 22315 AUTO-IGNITION/AUTO-START SYSTEM
 22304 CARBURETOR HEAT
 22305 COWL FLAPS
 22311 COWL FLAP POSITION
 22316 ENGINE SHUTDOWN (i.e., intentional)
 22303 MIXTURE
 22312 MIXTURE CONTROL FRICTION LOCK
 22302 PROPELLER
 22313 PROPELLER CONTROL FRICTION LOCK
 22306 REVERSERS
 22307 PROPELLER FEATHERING
 22301 THROTTLE/POWER CONTROL

9940001: Aircraft/Equipment
 Performance Subjects

22314	THROTTLE/POWER CONTROL FRICTION LOCK
22309	WRONG ENGINE SHUTDOWN
22310	WRONG PROPELLER FEATHERED
23000	EMERGENCY EQUIPMENT
23001	CAUTION/WARNING SYSTEM/LIGHT(S)
23002	EMERGENCY FLOATS
23100	FLIGHT/NAVIGATION INSTRUMENT(S)
23108	AIRSPEED INDICATOR
23107	ALTIMETER
23103	ALTIMETER SETTING
23106	APPROACH RECEIVER
23113	ATTITUDE INDICATOR
23110	ENGINE INSTRUMENT
23109	HEADING INDICATOR
23114	MAGNETIC COMPASS
23104	NAVIGATION RECEIVER #(includes GPS)
23105	NAVIGATION COMPUTER
23102	RADAR ALTIMETER (radio altimeter)
23115	STANDBY ALTIMETER
23111	STANDBY ATTITUDE INDICATOR
23112	TURN AND BANK INDICATOR (includes turn coordinator)
23101	WEATHER RADAR
23200	ROTORCRAFT FLIGHT CONTROLS
23201	CYCLIC
23202	COLLECTIVE
23205	CONTROL FRICTION
23206	LOWERING OF COLLECTIVE
23204	MIXING UNIT
23203	TAIL ROTOR/ANTI-TORQUE CONTROL
23300	MISCELLANEOUS EQUIPMENT
+23319	AIR CONDITIONING/HEATING/PRESSURIZATION SYSTEM(S)
23313	AIRCRAFT PROTECTIVE COVERING (i.e.; pitot, wing, eng, etc.)
23303	APU
23310	EMERGENCY LIGHTS
23314	EXTERIOR/NAV LIGHT(S)
23311	EXTERNAL LOAD EQUIPMENT
23315	GLIDER/TOW/LAUNCH EQUIPMENT
23312	GLIDER/TOW RELEASE
23304	GROUND PROXIMITY WARNING SYSTEM
23316	GROUND TIE-DOWN ROPE/STRAP
23307	LANDING LIGHTS
23317	LOAD TIE-DOWN/SECURITY
23308	OXYGEN SYSTEM
23301	PITOT SYSTEM
+23320	PORTABLE ELECTRICAL EQUIPMENT (i.e.; cellular phone, lap top computer)
23305	SEAT BELT
23306	SEAT BELT SIGN
23309	SHOULDER HARNESS
23318	STROBE LIGHT(S)
+23321	SURVIVAL EQUIPMENT (raft, life jackets/vests, etc)
23302	VACUUM SYSTEM
+23322	WHEEL CHOCKS

9940001: Aircraft/Equipment Performance Subjects

SECTION IB - OPERATIONS/ATC/MAINTENANCE SUBJECTS

24500 AIRCRAFT HANDLING (see 24566 for "Aircraft Control")
24501 AEROBATICS
24502 ABORT
24503 ABORT ABOVE V1
24504 ABORTED LANDING
24505 ABORTED TAKEOFF
24566 AIRCRAFT CONTROL
24506 AIRSPEED
24568 AIRSPEED(V1)*
24569 AIRSPEED(V2)*
24570 AIRSPEED(V2 min)*
24515 AIRSPEED(VA)*
24513 AIRSPEED(VFE)*
24571 AIRSPEED(VLE)*
24514 AIRSPEED(VLO)*
24507 AIRSPEED(VLOF)*
24509 AIRSPEED(VMC)*
24508 AIRSPEED(VMCG)*
24516 AIRSPEED(VMO)*
24572 AIRSPEED(VNE)*
24573 AIRSPEED(VR)*
24517 AIRSPEED(VREF)*
24511 AIRSPEED(VS)*
24512 AIRSPEED(VSO)*
24574 AIRSPEED(VXSE)*
24510 AIRSPEED(VYSE)*
24518 ALTITUDE
24577 ALTITUDE/CLEARANCE (i.e., lateral and/or vertical clearance)
24520 AUTOROTATION
24521 BUZZING
24578 CIRCLING APPROACH
24526 CLEARANCE (physical clearance; not ATC clearance)
24527 CLIMB
24579 CROSSWIND COMPONENT
24522 DECISION HEIGHT
24524 DESCENT
24538 DESIGN STRESS LIMITS OF AIRCRAFT
24539 DIRECTIONAL CONTROL
24523 DISTANCE
24580 DISTANCE/ALTITUDE(i.e., misjudge on final, lead to undershoot)
24581 DISTANCE/SPEED (i.e., misjudge on final can lead to overrun)
24545 EMERGENCY PROCEDURE
24582 EVASIVE MANEUVER
24535 FLARE
24565 FORMATION FLYING
24536 GO-AROUND*
24537 GROUND LOOP/SWERVE
24534 LEVEL OFF (see 24535 - Flare)
24533 LIFT-OFF
24540 LOAD JETTISON
24583 LOW ALTITUDE FLIGHT/MANEUVER
24541 LOW PASS
24543 MANEUVER
24584 MANEUVER TO AVOID OBSTRUCTIONS
24529 MINIMUM DESCENT ALTITUDE
24544 MISSED APPROACH
24585 NOISE ABATEMENT PROCEDURE
24564 #PORPOISE/PILOT-INDUCED OSCILLATION
24557 POWER ON LANDING
24546 PRECAUTIONARY LANDING
24530 PROPER ALIGNMENT (can use for rwy alignment; see 24108 for
"Maintenance Alignment")
24519 PROPER ALTITUDE
24528 PROPER CLIMB RATE
24525 PROPER DESCENT RATE
24532 PROPER GLIDEPATH

9950001:Operations/Act/
Maintenance Subjects

24531	PROPER TOUCHDOWN POINT
24547	PULL-UP
24562	RECOVERY FROM BOUNCED LANDING
24542	REMEDIAL ACTION
24548	ROTATION
24558	ROTOR RPM
24559	RUN ON LANDING
24560	RUNNING TAKEOFF
24586	SHORT FIELD LANDING/PROCEDURE
24587	SHORT FIELD TAKEOFF/PROCEDURE
24576	SLOPE CAPABILITY
24588	SLOW FLIGHT
24589	SOFT FIELD LANDING/PROCEDURE
24590	SOFT FIELD TAKEOFF/PROCEDURE
24550	SPIRAL
24551	STALL
24553	STALL/MUSH
24552	STALL/SPIN
24591	TAILPLANE STALL
24549	STARTING PROCEDURE
24575	TAXI SPEED
24592	TORQUE/P-FACTOR
24563	TOUCH-AND-GO
24567	TOUCHDOWN
24593	VASI
24561	VERTICAL TAKEOFF
24554	WATER LOOP/SWERVE
24555	WHEELS DOWN LANDING IN WATER
24556	WHEELS UP LANDING
24200	AIRPORT
24204	AIRPORT OPERATIONS
24202	AIRPORT SNOW REMOVAL
24203	OTHER AIRPORT/RUNWAY MAINTENANCE
24201	RUNWAY MAINTENANCE
24600	COMMUNICATIONS/INFORMATION/ATC
24621	AIR/GROUND COMMUNICATIONS
24631	APPROACH/DEPARTURE CONTROL SERVICE
24606	ARTCC SERVICE
24622	ATC CLEARANCE
24623	CLEARANCE TO WRONG RUNWAY
24608	COMMUNICATIONS
24607	CONTROL TOWER SERVICE
24625	CREW/GROUP BRIEFING
24624	CREW/GROUP COORDINATION #(includes crew resource management (CRM)
24630	DF STEER
24605	FLIGHT ADVISORIES
24613	FSS SERVICE

9950001:Operations/Act/ Maintenance Subjects

24603 IDENTIFICATION OF AIRCRAFT ON RADAR
 24604 IDENTIFICATION OF AIRCRAFT VISUALLY
 24617 IFR SEPARATION STANDARDS
 24620 IN FLIGHT WEATHER AVOIDANCE ASSISTANCE
 24609 INFORMATION
 24602 INSTRUCTIONS, WRITTEN/VERBAL
 24601 INTERPRETATION OF INSTRUCTIONS
 24610 MONITORING
 24626 PASSENGER BRIEFING
 24616 RADAR ASSISTANCE TO VFR AIRCRAFT
 24619 RADAR SEPARATION
 24614 RADAR TRAFFIC INFORMATION SERVICE
 24611 RADIO COMMUNICATIONS
 24615 SAFETY ADVISORY
 24627 SUPERVISION
 24612 TRAFFIC ADVISORY
 24628 UNSAFE/HAZARDOUS CONDITION
 24629 UNSAFE/HAZARDOUS CONDITION WARNING
 24618 VISUAL SEPARATION
 24632 UNICOM
 24300 DISPATCH
 24301 DISPATCH PROCEDURES
 24302 FLT WITH INADQT EN ROUTE/DESTN FACILITIES
 24100 MAINTENANCE
 24107 MAINTENANCE, ADJUSTMENT
 24108 MAINTENANCE, ALIGNMENT
 24104 MAINTENANCE, ANNUAL INSPECTION
 24105 MAINTENANCE, 100-HOUR INSPECTION
 24106 MAINTENANCE, AAIP/PROGRESSIVE PROGRAM
 24109 MAINTENANCE, BALANCING
 24110 MAINTENANCE, CALIBRATION
 24103 MAINTENANCE, COMPLIANCE WITH AD (airworthiness directive)
 24120 MAINTENANCE, DESIGN CHANGE
 24111 MAINTENANCE, INSTALLATION
 24102 #MAINTENANCE, INSPECTION
 24112 MAINTENANCE, LUBRICATION
 24113 MAINTENANCE, MODIFICATION
 24116 MAINTENANCE, MAJOR REPAIR
 24117 MAINTENANCE, MAJOR ALTERATION
 24121 MAINTENANCE, OVERHAUL
 24122 MAINTENANCE, OVERHAUL, MAJOR (engine)
 24114 MAINTENANCE, PRESSURIZING
 24123 MAINTENANCE, REBUILD/REMANUFACTURE
 24115 MAINTENANCE, REPLACEMENT
 24118 MAINTENANCE, RECORDKEEPING
 24119 #MAINTENANCE, SERVICE BULLETIN/LETTER (normally not causal)
 24101 #MAINTENANCE, SERVICE OF AIRCRAFT/EQUIPMENT
 #(see: 82127 for supplement type certificate (STC) inadequate)
 24124 MAINTENANCE, TOP OVERHAUL
 24400 METEOROLOGICAL SERVICE (these may be aircrew related)
 24403 HAZARDOUS WEATHER ADVISORY
 24406 IN-FLIGHT BRIEFING SERVICE
 24407 IN-FLIGHT WEATHER ADVISORIES
 24405 PREFLIGHT BRIEFING SERVICE
 24404 UPDATING OF RECORDED WEATHER INFORMATION
 24401 WEATHER FORECAST
 24402 WEATHER OBSERVATION
 24408 WEATHER SERVICE

9950001:Operations/Act/ Maintenance Subjects

24000 PLANNING/DECISION
 24002 AIRCRAFT PREFLIGHT
 24003 AIRCRAFT SERVICE
 24005 AIRCRAFT UNATTENDED/ENGINE(S) RUNNING
 24006 AIRCRAFT WEIGHT AND BALANCE
 24033 ALL AVAILABLE RUNWAY
 24014 BECAME LOST/DISORIENTED (see 33400, spatial disorientation)
 24030 CHECKLIST
 24026 COMPENSATION FOR WIND CONDITIONS
 24017 DOCUMENTATION #(includes maint write-up/squawk/discrepancy notification)
 24036 FLIGHT INTO ADVERSE WEATHER
 24023 FLIGHT INTO KNOWN ADVERSE WEATHER
 24018 FLIGHT MANUALS (see 21100 for aircraft manuals)
 =24025 FLIGHT TO ALTERNATE DESTINATION (use only when 24037/38/39 not applicable)
 24037 FLIGHT TO DESTINATION ALTERNATE (otr than takeoff alternate)
 24038 FLIGHT TO NEW DESTINATION (when destn is changed en route)
 24039 FLIGHT TO TAKEOFF ALTERNATE (i.e., when unable to return to
 takeoff airport)
 24012 FUEL CONSUMPTION CALCULATIONS
 24004 ICE/FROST REMOVAL FROM AIRCRAFT
 24024 IFR PROCEDURE (used when IFR apch plate/procedure not flwd)
 24010 IN-FLIGHT PLANNING/DECISION
 24031 JUDGMENT
 24027 LANDED AT WRONG AIRPORT
 24040 LOADING OF CARGO
 24013 NOTAMS
 24007 OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT
 24019 PERFORMANCE DATA
 24034 PLANNED APPROACH
 24001 PREFLIGHT PLANNING/PREPARATION (see 24002 for acft preflt)
 24032 PROCEDURES/DIRECTIVES
 24009 PROPER ASSISTANCE
 24020 REFUELING
 24035 SECURITY OF CARGO
 24627 SUPERVISION(often used with CFI when dual student is causal)
 24008 TIE DOWN
 24029 UNSUITABLE TERRAIN OR TAKEOFF/LANDING/TAXI AREA
 24015 VFR FLIGHT INTO IMC
 24016 VFR PROCEDURES
 24021 VISUAL LOOKOUT (i.e., "Inadequate" to see-&-avoid)
 24022 WEATHER EVALUATION
 24011 WIND INFORMATION
 24028 WRONG RUNWAY
 24041 WRONG TAXI ROUTE

9950001:Operations/Act/ Maintenance Subjects

24800 ROTORCRAFT OPERATIONS (see 23200 for rotorcraft flight controls)
 24520 AUTOROTATION
 24801 DYNAMIC ROLLOVER*
 24802 GROUND RESONANCE* (often leads to airframe failure/code 130)
 24803 HEIGHT/VELOCITY CURVE (deadman's curve)
 24804 HOVERING TURN
 24805 LOSS OF TAIL ROTOR EFFECTIVENESS
 24806 MAST BUMPING
 24807 NEVER EXCEED SPEED, ONE ENGINE INOPERATIVE
 24808 OUT OF GROUND EFFECT
 24809 RETREATING BLADE STALL
 24810 ROTOR BLADE TIE-DOWN(S)
 24558 ROTOR RPM
 24559 RUN ON LANDING
 24560 RUNNING TAKEOFF
 24811 SETTLING WITH POWER*
 24812 SLOPE LIMITATIONS
 24813 TAIL ROTOR EFFECTIVENESS
 24814 TAKEOFF SAFETY SPEED (VTOSS) (category-A helicopter only)
 24815 TRANSLATIONAL LIFT
 24816 TRANSVERSE FLOW
 24561 VERTICAL TAKEOFF
 24817 VORTEX RING STATE
 24700 MISCELLANEOUS
 24717 BAIL-OUT/EMERGENCY EJECTION
 +24719 CANOPY JETTISON
 24705 CONTROL INTERFERENCE
 24701 DISTURBANCE
 24702 EQUIPMENT, OTHER
 24712 EVACUATION
 24703 HIJACKING
 24709 HOT START
 24704 INSTALLATION
 24716 NAVAID SIGNAL
 +24720 PERSONAL PROTECTIVE GEAR/CLOTHING (helmet, gloves, Nomex, etc)
 24718 PROPELLER/JET BLAST ENCOUNTER
 24706 RELINQUISHING OF CONTROL
 24714 RESCUE
 24710 SABOTAGE
 24713 SEARCH
 24711 SECURITY
 24708 STOLEN AIRCRAFT/UNAUTHORIZED USE
 24707 SUICIDE (needs substantiation)
 24715 WAKE TURBULENCE (see 410, "Vortex Turbulence Encountered")
 25000 REASON FOR OCCURRENCE UNDETERMINED (previously Undetermined)

9950001:Operations/Act/ Maintenance Subjects

SECTION IB - PERFORMANCE/OPERATIONS/ATC/MAINTENANCE MODIFIERS

3002 ABORTED
3000 ABOVE
3146 ABRUPT
+3021 ACCEPTED (i.e.; ATC clearance/instruction accepted)
+3022 ACTIVATED
3100 ATTEMPTED
3101 BELOW
3103 CONFLICTING
3142 CONFUSING
3102 CONTINUED
+3023 CONTINUED BELOW (i.e., continued below decision height)
3104 DELAYED
3003 DIMINISHED
3144 DISCONTINUED
3105 DISPATCHED
3106 DISREGARDED
3147 ENCOUNTERED
3107 EXCEEDED
3108 EXCESSIVE
+3024 HIGH (i.e.; high airspeed/altitude/approach, etc)
3109 IMPROPER
3110 IMPROPER USE OF
3111 INACCURATE
3115 INADEQUATE
3113 INADVERTENT
3149 INADVERTENT ACTIVATION
3116 INADVERTENT DEACTIVATION
3117 INADVERTENT USE
3112 INATTENTIVE
+3033 INCORRECT
3148 INFORMATION INSUFFICIENT
3118 INITIATED
3114 INTENTIONAL
3119 ISSUED
3004 LOW (i.e., airspeed, altitude, etc)
3120 MISJUDGED
3121 MISREAD
3005 NOT ADVISED
3006 NOT APPLICABLE
3007 NOT APPROVED
3122 NOT ATTAINED
3008 NOT AVAILABLE
+3025 NOT CALCULATED
3009 NOT COMPLIED WITH
+3026 NOT COORDINATED/DISEMINATED (i.e.; discrepancy not coordinated or info not
disseminated with responsible party)
3123 NOT CORRECTED
3010 NOT DEPLOYED
+3027 NOT DETECTED
3124 NOT FOLLOWED
3125 NOT IDENTIFIED
3126 NOT ISSUED
3127 NOT MAINTAINED
3129 NOT OBTAINED
3011 NOT OBTAINED/MAINTAINED
3128 NOT PERFORMED
3131 NOT POSSIBLE
3132 NOT RECEIVED
+3028 NOT RECOGNIZED
+3029 NOT RELAYED (i.e.; operator did not relay wx info from NWS to plts)
3012 NOT REMOVED
3013 NOT REQUIRED
3133 NOT SELECTED
3014 NOT SET
+3030 NOT SUCCESSFUL (i.e.; evacuation not successful)
3130 NOT UNDERSTOOD

3134 NOT USED
3015 NOT VERIFIED
3016 OBTAINED
3017 OVERDUE
3135 PERFORMED
3136 POOR (avoid use of this modifier)
3137 PREMATURE
3143 RECOMMENDED
3138 REDUCED
3018 REMOVED
3019 REQUIRED
3145 RESTRICTED
3020 REVERSED
3139 SELECTED
+3031 RESET/REPOSITIONED (i.e., circuit breaker reset)
3141 SIMULATED
3150 UNAVAILABLE
3140 UNCONTROLLED
+3032 USED
3001 (will leave blank space, use only when required)

SECTION IB - PERFORMANCE/OPERATIONS/ATC/MAINTENANCE - PERSON MODIFIERS

4125 AIRPORT PERSONNEL
4109 ATC PERSONNEL(ARTCC)
4110 ATC PERSONNEL(DEP/APCH)
4112 ATC PERSONNEL(FSS)
4138 ATC PERSONNEL(NON-FAA) (i.e., USAF, Navy, civilian)
4113 ATC PERSONNEL(SUPERVISOR)
4111 ATC PERSONNEL(LCL/GND/CLNC)
4105 CHECK PILOT (not for biennial flight review)
4107 COMPANY MAINTENANCE PERSONNEL
4121 COMPANY/OPERATOR MANAGEMENT (includes owner/oper)
4100 COPILOT/SECOND PILOT
4137 DESIGNATED EXAMINER (designated by FAA)
4122 DISPATCHER
4131 DRIVER OF VEHICLE
4101 DUAL STUDENT
4114 FAA INSPECTOR
4119 FAA (AIRWAYS FACILITY PERSONNEL)
4117 FAA(OTHER/ORGANIZATION)
4116 FAA(PRINCIPAL MAINTENANCE INSPECTOR)
4115 FAA(PRINCIPAL OPERATIONS INSPECTOR)
4118 FBO PERSONNEL
4126 FLIGHT ATTENDANT
4139 FLIGHT CREW (i.e., one or both pilots in a 2 pilot operation)
4102 FLIGHT ENGINEER
4104 FLIGHT INSTRUCTOR(ON GROUND)
4124 GROUND PERSONNEL
4144 KIT MANUFACTURER
4123 MANUFACTURER
4120 NWS PERSONNEL
4106 OTHER CREW MEMBER
4132 OTHER GOVERNMENT PERSONNEL
4140 OTHER INSTITUTION (i.e., ALPA, AOPA, EAA, etc)
4108 OTHER MAINTENANCE PERSONNEL
4133 OTHER PERSON
4141 OWNER/BUILDER (see 4129 for Production/Design Personnel)
4142 OWNER/PILOT MECHANIC (for use with maintenance codes)
4127 PASSENGER
4000 PILOT IN COMMAND (includes solo student)
4103 PILOT IN COMMAND(CFI)
+4145 PILOT OF A PREVIOUS FLIGHT (i.e.; did not coordinate a discrepancy)
4128 PILOT OF OTHER AIRCRAFT
4135 PILOT PASSENGER
4129 PRODUCTION/DESIGN PERSONNEL
4130 SPECTATOR
+4146 SUPPLIER/DISTRIBUTOR OF PARTS (other than manufacturer or maint psnl)
4143 UNICOM OPERATOR (not normally listed as a cause or factor)
4136 UNKNOWN
4134 UNQUALIFIED PERSON
4001 (will leave blank space, use only when required)

**SECTION II - DIRECT UNDERLYING SUBJECTS
(AIRCRAFT/EQUIPMENT/FACILITY/MATERIAL/INFORMATION/PROCEDURES)**

```

82000    AIRCRAFT/EQUIPMENT INADEQUATE
82128      ACFT/EQUIP, INADEQUATE AIRCRAFT COMPONENT
82124      ACFT/EQUIP, INADEQUATE AIRCRAFT MANUALS
82126      ACFT/EQUIP, INADEQUATE AIRFRAME
82125      ACFT/EQUIP, INADEQUATE HANDLING/PERF CAPABILITIES
82116      ACFT/EQUIP, INADEQUATE COCKPIT/WORKPLACE
82117      ACFT/EQUIP, INADEQUATE COCKPIT/WORKPLACE, LIGHTING
82119      ACFT/EQUIP, INADEQUATE COCKPIT/WORKPLACE, NOISE
82120      ACFT/EQUIP, INAD COCKPIT/WORKPLACE, FUMES/SMOKE
82200    ACFT/EQUIP, INADEQUATE COMPLIANCE DETERMINATION
82114      ACFT/EQUIP, INADEQUATE CONTROL LOCATION
82115      ACFT/EQUIP, INADEQUATE CONTROL SHAPE/SIZE
82100    ACFT/EQUIP, INADEQUATE DESIGN
82122      ACFT/EQUIP INADEQUATE, EQUIPMENT INTERFERENCE
82118      ACFT/EQUIP, INADEQUATE EXTERNAL LIGHTING
82123      ACFT/EQUIP, INADEQUATE FLIGHT MANAGEMENT SYSTEM
82111      ACFT/EQUIP, INADEQUATE INSTRUMENT DISPLAY
82112      ACFT/EQUIP, INADEQUATE INSTRUMENT LOCATION
82113      ACFT/EQUIP, INADEQUATE INSTRUMENT LIGHTING
82110      ACFT/EQUIP, INADEQUATE STANDARD/REQUIREMENT
82127      ACFT/EQUIP INADEQUATE, SUPPLEMENTAL TYPE CERT
82121      ACFT/EQUIP INADEQUATE, VISUAL RESTRICTION
70000    FACILITY INADEQUATE
70114      FACILITY, INADEQUATE CONTROL LOCATION
70115      FACILITY, INADEQUATE CONTROL SHAPE/SIZE
70122      FACILITY, INADEQUATE, EQUIPMENT INTERFERENCE
70118      FACILITY, INADEQUATE EXTERNAL LIGHTING
70200      FACILITY, INADEQUATE COMPLIANCE DETERMINATION
70220      FACILITY, INADEQUATE COMPLIANCE (DOCUMENTATION)
70210      FACILITY, INADEQUATE COMPLIANCE (REVIEW)
70100      FACILITY, INADEQUATE DESIGN
70110      FACILITY, INADEQUATE DESIGN (STANDARD/REQUIREMENT)
70123      FACILITY, INADEQUATE FLIGHT MANAGEMENT SYSTEM
70111      FACILITY, INADEQUATE INSTRUMENT DISPLAY
70112      FACILITY, INADEQUATE INSTRUMENT LOCATION
70113      FACILITY, INADEQUATE INSTRUMENT LIGHTING
70124      FACILITY, INADEQUATE MANUALS/DIRECTIVES
70121      FACILITY, INADEQUATE, VISUAL RESTRICTION
70116      FACILITY, INADEQUATE WORKPLACE
84000    MATERIAL INADEQUATE
84110      INADEQUATE QUALITY CONTROL
84100      MATERIAL DEFECT
84120      MATERIAL DEFECT (INADEQUATE QUALITY OF MATERIAL)
84200      MATERIAL INADEQUATE, IMPROPER
+84111    REPETITIVE HIGH STRESS/HIGH CYCLE OPERATION
35000    INFORMATION
35100      INFORMATION INSUFFICIENT
35200      INFORMATION UNAVAILABLE
35300      INFORMATION UNCLEAR
35320      INFORMATION UNCLEAR (LANGUAGE)
35310      INFORMATION UNCLEAR (PHRASEOLOGY)
80000    PROCEDURE INADEQUATE
80100      CONDITION(S)/STEP(S) NOT LISTED
80200      CONDITION(S)/STEP(S) INSUFFICIENTLY DEFINED
80300      CONDITION(S)/STEP(S) IN ERROR
80400      CONDITION(S)/STEP(S) IN IMPROPER SEQUENCE

```

9970001:Direct
Underlying subjects

(PERSON-ORIENTED SUBJECTS)

32000 EXCESSIVE WORKLOAD (TASK OVERLOAD)
60000 IMPROPER DECISION
40000 IMPROPER USE OF EQUIPMENT/AIRCRAFT
30000 IMPROPER USE OF PROCEDURE
33000 PHYSIOLOGICAL CONDITION
33700 #CORRECTING LENSES, NOT WORN
+33701 CORRECTING LENSES, IMPROPER (i.e.; use of contact)
33600 FATIGUE
33610 FATIGUE (CHRONIC)
33660 FATIGUE (CIRCADIAN RHYTHM)
+33601 FATIGUE (CONDITIONS CONDUCTIVE TO PILOT FATIGUE)
33630 FATIGUE (FLIGHT SCHEDULE)
33650 FATIGUE (FLIGHT AND GROUND SCHEDULE)
33640 FATIGUE (GROUND SCHEDULE)
33620 FATIGUE (LACK OF SLEEP)
33200 INCAPACITATION
33230 INCAPACITATION (ALCOHOL)
33211 INCAPACITATION (ANOXIA/HYPOXIA)
33214 INCAPACITATION (CARBON MONOXIDE)
33240 INCAPACITATION (DRUGS)
33212 #INCAPACITATION (CARDIOVASCULAR)(i.e.; heart attack)
33216 INCAPACITATION (HYPOGLYCEMIA/DIET)
33250 INCAPACITATION (LOSS OF CONSCIOUSNESS)
33218 INCAPACITATION (MOTION SICKNESS)
33221 INCAPACITATION (OTHER ORGANIC PROBLEM)
33215 INCAPACITATION (OTHER TOXIC)
33219 INCAPACITATION (NEUROLOGIC)(i.e., stroke)
33220 INCAPACITATION (VISUAL DEFICIENCY)
33100 PHYSICAL IMPAIRMENT
33130 IMPAIRMENT (ALCOHOL)
33140 IMPAIRMENT (DRUGS) (includes drug or medication,
when the drug/medication is a cause or factor)
33111 PHYSICAL IMPAIRMENT (ANOXIA/HYPOXIA)
33114 PHYSICAL IMPAIRMENT (CARBON MONOXIDE)
33112 #PHYSICAL IMPAIRMENT (CARDIOVASCULAR)(i.e.; heart attack)
33116 PHYSICAL IMPAIRMENT (HYPOGLYCEMIA/DIET)
33118 PHYSICAL IMPAIRMENT (MOTION SICKNESS)
33115 PHYSICAL IMPAIRMENT (OTHER TOXIC)
33121 PHYSICAL IMPAIRMENT (OTHER ORGANIC PROBLEM)
33119 PHYSICAL IMPAIRMENT (NEUROLOGIC)(i.e., stroke)
33120 PHYSICAL IMPAIRMENT (VISUAL DEFICIENCY)
33300 PHYSICAL STRENGTH OVERLOAD
33400 SPATIAL DISORIENTATION (see 24566/3127, when "Aircraft
Control, Not Maintained."
33500 VISUAL/AURAL DETECTION (concerns ability to see or hear)
33141 #USE OF INAPPROPRIATE MEDICATION/DRUG` (use only as a finding)

9960001:Person-oriented Subjects

31000	PSYCHOLOGICAL CONDITION
31180	ANXIETY/APPREHENSION
31140	COMPLACENCY
+ 31181	DEPRESSION
31110	DIVERTED ATTENTION
31250	EMOTIONAL REACTION
31230	EXPECTANCY
31270	HABIT INTERFERENCE
31120	INATTENTIVE
31240	INTERPERSONAL RELATIONS
31220	MENTAL PERFORMANCE OVERLOAD
31130	MOTIVATION
31260	OSTENTATIOUS DISPLAY
31280	OTHER PSYCHOLOGICAL CONDITION
31160	OVERCONFIDENCE IN PERSONAL ABILITY
31170	OVERCONFIDENCE IN AIRCRAFT'S ABILITY
31190	PANIC
31200	PRESSURE
31202	COMPANY-INDUCED PRESSURE
31204	PRESSURE INDUCED BY CONDITIONS/EVENTS
31203	PRESSURE INDUCED BY OTHERS
31201	SELF-INDUCED PRESSURE
31150	UNDERCONFIDENCE IN PERSONAL ABILITY
31210	VISUAL/AURAL PERCEPTION (concerns interpretation of what is seen or heard)
31211	VISUAL ILLUSION
34000	QUALIFICATION
34001	LACK OF CERTIFICATION
34100	IMPROPER TRAINING
34110	IMPROPER INITIAL TRAINING
34120	IMPROPER RECURRENT TRAINING
34140	IMPROPER TRAINING (EMERGENCY PROCEDURE(S))
34130	IMPROPER TRANSITION/UPGRADE TRAINING
34200	INADEQUATE TRAINING
34210	INADEQUATE INITIAL TRAINING
34220	INADEQUATE RECURRENT TRAINING
34240	INADEQUATE TRAINING (EMERGENCY PROCEDURE(S))
34230	INADEQUATE TRANSITION/UPGRADE TRAINING
34300	LACK OF EXPERIENCE (not normally used with student)
34310	LACK OF FAMILIARITY WITH AIRCRAFT
34320	LACK OF FAMILIARITY WITH GEOGRAPHIC AREA
34340	LACK OF RECENT EXPERIENCE
34342	LACK OF RECENT EXPERIENCE IN KIND OF AIRCRAFT (category/class of aircraft; i.e., se, me, glider, balloon, jet, hvy, etc)
34343	LACK OF RECENT EXPERIENCE IN TYPE OF AIRCRAFT (make/model of aircraft)
34345	LACK OF RECENT EXPERIENCE IN TYPE OPERATION
34344	LACK OF RECENT INSTRUMENT TIME
34330	LACK OF TOTAL EXPERIENCE
34332	LACK OF TOTAL EXPERIENCE IN KIND OF AIRCRAFT (category/class of aircraft; i.e., se, me, glider, balloon, jet, hvy, etc)
34333	LACK OF TOTAL EXPERIENCE IN TYPE OF AIRCRAFT (make/model of aircraft)
34335	LACK OF TOTAL EXPERIENCE IN TYPE OPERATION
34334	LACK OF TOTAL INSTRUMENT TIME

9960001:Person-oriented Subjects

SECTION II - PERSON MODIFIERS - DIRECT UNDERLYING

5350 AIRPORT PERSONNEL
5190 ATC PERSONNEL(ARTCC)
5200 ATC PERSONNEL(DEP/APCH)
5220 ATC PERSONNEL(FSS)
5408 ATC PERSONNEL(NON-FAA)(i.e., USAF, Navy, civilian)
5230 ATC PERSONNEL(SUPERVISOR)
5210 ATC PERSONNEL(LCL/GND/CLNC)
5150 CHECK PILOT
5170 COMPANY MAINTENANCE PERSONNEL
5310 COMPANY/OPERATOR MANAGEMENT (includes owner/operator)
5100 COPILOT/SECOND PILOT
5407 DESIGNATED EXAMINER (designated by FAA)
5320 DISPATCHER
5403 DRIVER OF VEHICLE
5110 DUAL STUDENT
5240 FAA INSPECTOR
5280 FAA(AIRWAYS FACILITY PERSONNEL)
5270 FAA(ORGANIZATION)
5260 FAA(PRINCIPAL MAINTENANCE INSPECTOR)
5250 FAA(PRINCIPAL OPERATIONS INSPECTOR)
5290 FBO PERSONNEL
5360 FLIGHT ATTENDANT
5409 FLIGHT CREW (i.e., one or both pilots in a 2 pilot operation)
5120 FLIGHT ENGINEER
5140 FLIGHT INSTRUCTOR(ON GROUND)
5340 GROUND PERSONNEL
5331 KIT MANUFACTURER
5330 MANUFACTURER
5300 NWS PERSONNEL
5160 OTHER CREW MEMBER
5370 OTHER GOVERNMENT PERSONNEL
5410 OTHER INSTITUTION (i.e., ALPA, AOPA, EAA, etc)
5180 OTHER MAINTENANCE PERSONNEL
5380 OTHER PERSONNEL
5411 OWNER/BUILDER (see 5400 for Production/Design Personnel)
5412 OWNER/PILOT MECHANIC (for use with maintenance codes)
5401 PASSENGER
5000 PILOT IN COMMAND
5130 PILOT IN COMMAND(CFI)
+5191 PILOT OF A PREVIOUS FLIGHT (i.e.; did not coordinate a discrepancy)
5390 PILOT OF OTHER AIRCRAFT
5405 PILOT PASSENGER
5400 PRODUCTION/DESIGN PERSONNEL (see "Owner/Builder" above)
5402 SPECTATOR
+5381 SUPPLIER/DISTRIBUTOR OF PARTS (other than manufacturer or maint psnl)
5413 UNICOM OPERATOR
5406 UNKNOWN
5404 UNQUALIFIED PERSON
5001 (will leave blank space, use only when required)

SECTION III

INDIRECT UNDERLYING SUBJECTS

90000 INADEQUATE SURVEILLANCE OF OPERATION
90100 INADEQUATE SURVEILLANCE OF OPERATION, INSUFFICIENT STAFF
90200 INADEQUATE SURVEILLANCE OF OPERATION, INADEQUATE PROCEDURE

91000 INSUFFICIENT STANDARDS/REQUIREMENTS
91200 INSUFFICIENT STANDARDS/REQUIREMENTS, AIRCRAFT
91100 INSUFFICIENT STANDARDS/REQUIREMENTS, AIRMAN
91500 INSUFFICIENT STANDARDS/REQUIREMENTS, AIRWAYS/AIRSPACE
91400 INSUFFICIENT STANDARDS/REQUIREMENTS, MANUFACTURER
91300 INSUFFICIENT STANDARDS/REQUIREMENTS, OPERATION/OPERATOR

92000 INADEQUATE CERTIFICATION/APPROVAL
92200 INADEQUATE CERTIFICATION/APPROVAL, AIRCRAFT
92100 INADEQUATE CERTIFICATION/APPROVAL, AIRMAN
92400 INADEQUATE CERTIFICATION/APPROVAL, MANUFACTURER
92300 INADEQUATE CERTIFICATION/APPROVAL, OPERATOR

93000 INADEQUATE SUBSTANTIATION PROCESS
93300 INADEQUATE SUBSTANTIATION PROCESS, INADEQUATE DOCUMENTATION
93100 INADEQUATE SUBSTANTIATION PROCESS, INADEQUATE METHOD OF
COMPLIANCE DTRMTN RCRDKPNG
93200 INADEQUATE SUBSTANTIATION PROCESS, INSUFFICIENT REVIEW

SECTION III - PERSON/INSTITUTION MODIFIERS - INDIRECT UNDERLYING

6000 COMPANY/OPERATOR MGMT
6110 FAA(ORGANIZATION)
6100 MANUFACTURER
6120 OTHER GOVT ORGANIZATION
6130 OTHER INSTITUTION
+6001 (will leave blank space, use only when required)

9980001: Indirect Underlying Subjects

DATE:

TO: Analyst Function, AS-20

THRU: (Supervisor/Regional Director, as appropriate)

FROM:

SUBJ: Suggested Change/Correction to Coding Manual

Page:_____ Description of proposed change/correction:_____

For suggestion of new code(s), please show how the new code can be used (include subject, modifier & person codes, as appropriate):
