**INTERAGENCY COMMITTEE FOR AVIATION POLICY**

**FEDERAL AGENCY AIRCRAFT**

**GENERAL MAINTENANCE MANUAL GUIDE**

PREFACE

The General Maintenance Manual (GMM) Guide provides information for developing an agency GMM. An agency GMM should include procedures that adequately cover all Federal Aviation Regulations (FAR) that pertain to your agency and its unique aviation operations. The GMM Guide was developed to reduce that time required to develop appropriate operational procedures in a standardized format.

The GMM Guide is intended for use as a sample in the development of an agency GMM. Each agency GMM should be developed within the FAR's that pertain to its specific aviation operation. In that regard, an agency operating a Gulfstream GII or Boeing B-727 would have a different GMM requirement than an agency operating a Cessna CE-182. Material included in portions of this guide may not directly relate to or be required by a referenced FAR; however, that material may be considered a necessary part of any GMM.

A GMM must contain an agency's policies and procedures. A policy is a statement of intent. For example, if an agency requires a check to ensure the fuel in the tanker is the correct grade prior to fueling operations, this is a policy. The procedure outlines how the crewmember will obtain and test the fuel sample. A procedure should explain:

1.WHO

Who the procedure is speaking to.

Who will accomplish the procedure.

Who is responsible to see the procedure is accomplished.

Who is the accountable individual (a position, a facility, agency etc.).

2.WHAT

What the procedure is about.

What the procedure is trying to accomplish.

What the person performing the procedure should do.

3.WHEN

When the procedure will be accomplished:

a.The intervals (hours, cycles or calendar).

b.The specific date or time.

4.WHERE

Where the procedure will be accomplished.

a.The specific facility and location.

b.The specific type of facility.

5.WHY

Why the procedure is required.

Why the procedure is to be accomplished.

6.HOW

How the procedure will be accomplished.

a.In accordance with:

1.Manufacturers recommended procedures.

2.Procedures approved by the FAA.

3.Agency approved procedures.

Each agency's GMM should be developed to address all operations as they relate to maintenance operation standards. This guide provides a sample GMM as well as a standardized format to follow when developing the agency's maintenance operations standards. A close working relationship with the FAA Flight Standards District Office is necessary from the initial regulatory review, program development, and FAA/FSDO acceptance.

1.ABBREVIATIONS

The following abbreviations are to assist personnel when completing maintenance forms.

A/WAirworthy

A/PAutopilot

A to DAnalog to Digital

A/CAircraft

A.T.Auto Throttle

A&PAirframe and Powerplant

AASAircraft Alteration Station

ACAlternating Current

ACCAccessory

ACCELAccelerometer

ACCUMAccumulator

ACFTAircraft

ACMAir Cycle Machine

ACTActuator

ADAirworthiness Directive

ADCAir Data Computer

ADFAuto Direction Finder

ADIAttitude Deviation Indicator

ADPAutomatic Data Process

AFISAutomatic Flight Inspection System

AFLAircraft Flight Log

AFMAirplane Flight Manual

AFTAirworthiness Flight Test

AGCAutomatic Gain Control

AIAnti-Ice

AICAirborne Interphone Comm

AILAileron

AIRCONDAir Conditioning

ALTERAlternate

ALTDAltitude

ALTMAltimeter

ALTNAlternator

AMPMTRAmmeter

AMBAmbient

AMPAmplifier

ANGAngle

ANLGAnalog

ANSKDAnti-Skid

ANTAntenna

AOAAngle of Attack

AOGAircraft on Ground

A/PAutopilot

APPApproach

APUAuxiliary Power Unit

A/SAir Speed

ARRAeronautical Reliability Reports

ARTArtificial

ASSTAssist

ASSYAssembly

ASYMAsymmetry

ATCAir Traffic Control

ATMAir Turbine Motor

ATTAttitude

AUGAugmentation

AUTOAutomatic

AUXAuxiliary

AVAvionics

AWIAlcohol Water Injection

AWRAirworthiness Release

BALBalance or Ballast

BATTBattery

BCBench Check

BCNBeacon

BEWBasis Empty Weight

BFSBad from Stock

BLDBleed

BLDARBleed Air

BLKBlock

BLMTHBellmouth

BLRBlower

BOWBasic Operating Weight

BRCBrace

BRGBearing

BRKBrake

BRKTBracket

BRLESSBrushless

BSHBrush

BSTBoost

BSTRBooster

BTBench Test

BYPASBypass

C/WClockwise

C/PCabin Pressure

CALCalibrate or Calibration

CALIBCalibrator

CAMPContinuous Airworthiness Maintenance Program

CAPTCaptain

CARCargo

CARBCarburetor

CARTCartridge

CATCarburetor Air Temp

CBCircuit Breaker

CBLCable

CBNCabin

CCCard Control

CCWCounterclockwise

CDICourse Deviation Indicator

CDUControl Display Unit

CFContinuous Flow

CFRCode of Federal Regulations

CGCenter of Gravity

CHAPChapter

CHTCylinder Head Temperature

CKCheck

CKPTCockpit

CLCooling

CLRCooler

CMCondition Monitoring

CMPSTRCompensator

CNTRContainer

COContracting Officer

COMCommand

COMBCombustion

COMMCommunication

COMMUTCommutator

COMPCompass

COMPRCompressor

COMPTCompartment

COMPTRComparator

CONSConsole

CONDConducting

CONDSRCondenser

CONNConnect

CTLControl

CONTContinuous

CONTACTContactor

CONVTRConverter

COORDCoordinator

CORRCorrector

COTRContracting Officer's Technical Representative

CPLRCoupler

CPTCopilot

CRGCarriage

CRMNCrewman

CRTCathode Ray Tube

CSDConstant Speed Drive

CSHSICycles Since Hot Section Inspection

CSNCard Serial Number

CSOCycles Since Overhaul

CTRCenter

CURCurrent

CVRCockpit Voice Recorder

CW`Complied With

CYCCycle

CYCSCycles

CYLCylinder

DASDesignated Alteration Station

DBLDouble

DBSTDeboost

DCDirect Current

DCTDuct

DECDecrease

DEFDeferred

DEMDemand

DEMULPXRDemultiplexer

DEPRDepressurization

DERDesignated Engineering Representative

DETDetector

DEVDeviation

DFDirection Finder

DIDeice

DIFFDifferential

DIG; DIGTLDigital

DIGITDigitizer

DILDilution

DIRDirect

DIRECTDirection

DISCDisconnect

DISCHDischarge

DISTDistance

DISTRDistribution

DISTRBDistributor

DLDual

DLYDelay

DMEDistance Measuring Equipment

DMETDistance Measuring Equipment Transmitter

DMGDamaged

DMIDeferred Maintenance Item

DMPDump

DMPRDamper

DNLKDownlock

DNLNDown Line

DOTDepartment of Transportation

DPLRDoppler

DRDoor

DRGDrag

DRMDrum

DRNDrain

DRVDrive

DRVNDriven

DRWGDrawing

DSPLYDisplay

DVDirect Vision

DVMDigital Voltmeter

DVTRDiverter

DWNDown

DYNDynamic

E/OEngine Overhaul

ECEngine Change

EFISElectronic Flight Instrument System

EGTExhaust Gas Temperature

EHSIEngine Hot Section Inspection

EJTEjector

ELECElectrician

ELECTElectronic

ELEMElement

ELEVElevator

ELTEmergency Locator Transmitter

EMEREmergency

EMPNGEmpennage

ENGEngine

ENTEntrance

EOEngine Overhaul Time

EPREngine Pressure Ratio

EQEqualizer

EQUIPEquipment

ERPEmergency Readiness Program

ERRError

ESSEssential

ESTEstimated

EVALEvaluation

EVAPEvaporator

EXExit

EXCExchange

EXCGRExchanger

EXHExhaust

EXTExternal

EXTGExtinguish

EXTNExtension

FFuel

F.D.Flight Director

FAAFederal Aviation Administration

FARFederal Aviation Regulations

FAXFacsimile Transmission of Document

FBOFixed Base Operator

FCCFederal Communication Commission

FCDFleet Campaign Directive

FCUFuel Control Unit

FDRFlight Data Recorder

FEFlight Engineer

FEAFeathering

FIFOFlight Inspection Field Office

FIGFigure

FILFilter

FLFailed

FLOFlow

FLPFlap

FLSHFlasher

FLTFlight

FLTDKFlight Deck

FLTRFlutter

FOFlight Officer

FODForeign Object Damage

FPCFlight Pat Computer

FREQFrequency

FSBFleet Support Branch

FSDOFlight Standards District Office

FTFunctional Test

FUSFuselage

FWFirewall

FWDForward

G.S.Glide Slope

GALGallon(s)

GENGenerator

GFPGovernment Furnished Property

GLSGlass

GMMGeneral Maintenance Manual

GNDGround

GOMGeneral Operating Manual

GOVGovernor

GPUGround Power Unit

GRBSGearbox

GRNDGround

GSEGround Support Equipment

GTC Gas Turbine Compressor

GWTGross Weight

HDGHeading

HFHigh Frequency

HIHigh

HORIZHorizon

HORZHorizontal

HPHigh Pressure

HRSHours

HSIHeading Station Indicator

HTHard Time

HTRHeater

HYDHydraulic

IASIndicated Air Speed

IAWIn Accordance With

INBDInboard

ICInventory Control

IFRInstrument Flight Rules

IFSIntegrated Flight System

IGNIgnition

IISIntegrated Instrument System

ILSInstrument Landing System

INInch(es)

INCIncrease

INDIndicator

INJInjector

INLOCKInterlock

INOPInoperative

INRPTInterrupter

INSInertial Navigation System

INSPInspection

INSTInstrument

INTIntegrated

INTCLRIntercooler

INTCONInterconnect

INTPHInterphone

INVInverter

INVTInventory

IPCIllustrated Parts Catalog

IRANInspect and Repair, as Necessary

IRUInertial Reference Unit

ISOLIsolation

J BoxJunction Box

JJunction

JETJettison

JITJitter

JNTJoint

KPNKit Part Number

KTSKnots

LATLatitude

LAVLavatory

LDGLanding

LDMTRLoadmeter

LELeading Edge

LEFLPLeading Edge Flap

LGLanding Gear

LGELarge

LHLeft Hand

LIBDLeft Inboard

LKOUTLockout

LMANLeadman

LMTLimit or Limiting

LMTRLimiter

LNKLink

LOBDLeft Outboard

LOCLocalizer

LONGLongitudinal

LPLow Pressure

LPGLog Page

LRLeft Reserve

LRULine Replacement Unit

LTLeft

LUBELubricate/Lubrication

LWRLower

LVLLevel

MAMaster

M.A.C.Mean Aerodynamic Chord

MAFISMultiple Automatic Flight Inspection System

MAGMagnetic

MAINTMaintenance

MANManual

MANFManifold

MAXMaximum

MBMarker Beacon

MCOMaintenance Carry Over

MDIMagnetic Direction Indicator

MECHMechanism

MELMinimum Equipment List

MICMicrophone

MINMinimum

MIRMechanical Interruption Report

MISMechanical Interruption Summary

MISCMiscellaneous

MKRMarker

MLGMain Landing Gear

MLSMicrowave Landing System

MMMaintenance Manual

MNMain

MODModification

MONMonitor

MOSMonths

MPHMiles Per Hour

MRBMaintenance Review Board

MRRMechanical Reliability Report

MSUMode Select Unit

MTMount

MTRMotor

MULTCPLRMulticoupler

N2Nitrogen

N/ANot Applicable

NACNacelle

NAVNavigation

NCUNavigation Computer Unit

NCWNot Complied With

NDINon Destructive Inspection

NDTNon Destructive Testing

NEGNegative

NISNot in Stock

NLGNose Landing Gear

NORMNormal

NOZNozzle

#Number

NRNot Required

NRWCNon Routine Workcard

NTSNegative Torque Signal

NTSBNational Transportation Safety Board

O2Oxygen

OATOutside Air Temperature

OTBDOutboard

OBIOmni Bearing Indicator

OBSOmni Bearing Selector

OBSVRObserver

OCOn Condition

OEMOriginal Equipment Manufacturer

OICOperations Information Center

OJTOn-the-Job Training

OOOrdering Officer

OOTOut of Tolerance

OPOperational Check

OPROperator

OSCOscillator

OSGOverspeed Governor

OTBDOutboard

OTSOut of Service

OUTDCTOutlet Duct

OUTFLOOut Flow

OVHOverhaul

OVHTOverheat

OVLDOverload

OVLTOvervoltage

OVRDOverride

OZOunce(s)

P/NPart Number

P&DPressurizing and Dump

P/LPower Lever

P.U.Power Unit

PAPublic Address System

PAXPassenger(s)

PCProduction Control

PCWPreviously Complied With

PDUPlasma Display Unit

PEDPedestal

PFPreflight

PGPage

PHPhase

PICPilot in Command

PICTPictorial

PIREPPilot Report

PKGPackage

PLTPilot

PMPreventative Maintenance

PMPPump

PNPanel Number

PNEUPneumatic

PNLPanel

POPurchase Order

POOPart On Order

PORTPortable

POSPosition

POTPotentiometer

PPIPlan Position Indicator

PRESSPressure

PREAMPPreamplifier

PRGMProgram

PRIPrimary

PROPPropeller

PRTRPrinter

PSIPounds per Square Inch

PTPort

PTNPiston

PTTPush-to-Talk

PWRPower

QAQuality Assurance

QASQuality Assurance Specialist

QCQuality Control

QECQuick Engine Change

QTYQuantity

QUADQuadrant

R/RRemove and Replace

R/DResearch and Development

R/TReceiver/Transmitter

RADRadio

RATRam Air Temperature

RBCRadio Beam Coupler

RCDRRecorder

RCVRReceiver

RDRelief and Dump

RDRRadar

RECIRCRecirculate

RECTRectifier

REDReduction

REFReference

REGRegulator

RELRelease

REMRemove

REQRequired

RESReserve

RESTRRestrictor

RETRetract

REVReverse

REVCURReverse Current

RFGNRefrigeration

RFIRadio Frequency Interference

RGNRange

RGSTRRegister

RHRight Hand

RHEORheostat

RIBDRight Inboard

RIIRequired Inspection Item

RKRack

RLFRelief

RLYRelay

RMIRadio Magnetic Indicator

RNAVArea Navigation

ROBDRight Outboard

ROCRate of Change

RONRemain Over Night

RPReplenishment

RPMRevolutions Per Minute

RPTRRepeater

RRRadio Rack

RSTReset

RSVRReservoir

RTRYRotary

RTSReturn to Service

RUDRudder

RVSRReverser

RWRunway

S/CSuperchargher

S/NSerial Number

SAFISemi-Automatic Flight Inspection

SBService Bulletin

SCAVScavenger

SDRService Difficulty Report

SECSecondary

SECTSection

SELSelector

SELCASelect Call

SEMICONDSemi-Conductor

SENSensor

SENSSensitive

SEPSeparator

SEQSequence

SFARSpecial Federal Aviation Regulation

SFTShaft

SFTYSafety

SHKShock

SHMSheetmetal

SHTLShuttle

SIGSignal

SILService Information Letter

SKDSkid

SLService Letters

SLDSlide

SLTSlat

SLWINSliding Window

SMSmall

SMPSump

SOShut-off

SOLSolenoid

SPSpare

SPDSpeed

SPECSpecification

SFPSpecial Flight Permit

SPGSpring

SPKSpeaker

SPLSpoiler

SPTSupport

SRMStructural Repair Manual

SRVOServo

SSBSingle Side Band

SSIStructural Significant Item

STAStation

STABStabilizer

STARTStarter

STATStatic

STBYStandby

STCSupplemental Type Certificate

STKStick

STNRStrainer

STRSteering

STRGStorage

SUBSubmerged

SUMSummation

SUPSupply

SUPVSupervisor

SURFSurface

SVCService

SWSwitch

SYNCSynchronizer

SYSSystem

T/OTakeoff

T & BTurn and Bank

T.D.Temp Datum

T.I.T.Turbine Inlet Temp

TACHTachometer

TAIThermal Anti-Ice

TASTrue Air Speed

TATTotal Airframe Time

TBLTable

TBOTime Between Overhaul

TCTotal Cycles

TCKRTracker

TDOTechnical Direction Order

TETrailing Edge

TEMPTemperature

TENSTension

TETTotal Engine Time

TFRTransfer

TGTTurbine Gas Temperature

THMThermal

THSTThrust

TKTank

TMSTRThermister

TORQTorque

TPTailpipe

TRTransformer Rectifier

TRANTransition

TRBCOMPTurbo Compressor

TRKTruck

TRMTrim

TRQMTRTorquemeter

TRUNTrunnion

TRVLTravel

TSNTime Since New

TSOTime Since Overhaul

TSSTechnical Support Section

TSTATThermostat

TTTotal Time

TURBTurbine

UHFUltra High Frequency

UPHUpholstery

UPRUpper

UPLUplock

UPLNUpline

USMSUnited States Marshals Service

VVolts

VACVacuum

VARVariable

VCKVisual Check

VERTVertical

VGVertical Gyro

VHFVery High Frequency

VIBVibration

VLVValve

VNTVent

VNTRIVenturi

VOLTVoltage

VORVHF Omni-directional Range

VPUVoice Privacy Unit

VSIVertical Speed Indicator

WCWork Card

WDWindow

WDMWiring Diagram Manual

WGWing

WGTWeight

WHLWheel

WRNWarning

WOWork Order

WPRWiper

WTRWater

WSHLDWindshield

WXWeather

WVFRMWaveform

WWWheel Well

XCVRTransceiver

XDUCERR Transducer

XFEEDCross Feed

XFERTransfer

XFMRTransformer

XMSNTransmission

XMTRTransmitter

XOVERCrossover

XPOINTCrosspointer

XPONDERTransponder

YRYear

ZTZero Time

**Glossary of Terms**

AIRCRAFT means a device that is used or intended to be used for flight in the air.

AIRCRAFT ENGINE means an engine that is used or intended to be used for propelling aircraft. It includes turbo-superchargers, appurtenances, and accessories necessary for its functioning, but does not include propellers.

AIRFRAME means the fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces (including rotors but excluding propellers and rotating airfoils of engines), and landing gear of an aircraft and their accessories and controls.

AIRCRAFT MAINTENANCE means that work which is required to be performed by certificated persons.

AIRCRAFT MAINTENANCE BASE is an agency activity performing aircraft and avionics line maintenance functions on <Your Agency> aircraft.

AIRCRAFT OUT OF COMMISSION FOR PARTS (AOCP). The status of an aircraft which should be available for service but is not, because of the lack of a part or parts.

AIRPLANE means an engine-driven fixed-wing aircraft heavier than air, that is supported in flight by the dynamic reaction of the air against its wings.

APPROVED unless used with reference to another person, means approved by the FAA Administrator.

APPLIANCE means any instrument, mechanism, equipment, part, apparatus, appurtenance, or accessory, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, engine, or propeller.

AVIONICS MAINTENANCE means that work which is required to be performed by an avionics shop.

BENCH CALIBRATION means the calibration of equipment which is performed in an FAA approved avionics shop.

BENCH CHECK means the removal of an item of equipment from an aircraft or from stock for (1) a visual check (2) preventive maintenance, (3) minor repair, and (4) an operational check.

CALIBRATION means making precise measurements and adjustments to equipment or systems in order to obtain optimum performance and to certify that output data falls within prescribed tolerances.

COMPONENT any self-contained part, combination of parts, subassemblies or units, which perform a distinctive function necessary to the operation of the airframe, powerplant or propeller.

CONDITION MONITORING (CM) means there is no fixed overhaul time limit and, normally, no inspection/check period or scheduled task to determine the extent of deterioration or continued serviceability of an aircraft/system/component. All removals are therefore for unscheduled cause. Certain condition monitoring items may have work cards called out under one of the maintenance periods, but the task will be for servicing or a go-no-go typecheck and not a check for continued airworthiness.

CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP) means a combined program of maintenance and inspection functions used to fulfill the total maintenance needs. The program provides a maintenance program adequate to perform the work and an inspection program adequate to perform required inspections. These two organizations are separate.

CONTRACT/AGREEMENT MAINTENANCE refers to those functions of a contracting officer's representative or other designated maintenance representative in arranging for and administering contracts or agreements for providing aircraft maintenance services to the agency.

CONTROL LIMITS OR ALERT VALUES are maximum limits/values which when exceeded requires analysis for possible maintenance actions.

DISPATCH FOR MEL OPERATIONS dispatch occurs when the flightcrew releases the brakes to taxi for the purpose of flight.

ENGINE TIME CHANGES are those engines which reach maximum operating time between overhaul including engines replaced within 100 hours of maximum permitted operating time to allow replacement during scheduled inspection periods.

ENGINE FAILURE means any engine requiring unscheduled replacement due to unairworthy conditions which cannot be corrected by routine maintenance on the aircraft.

ENGINE CONVENIENCE REMOVAL applies to engines removed for update or modification which were operating satisfactorily at time of removal, or airworthy engines removed from aircraft in maintenance or storage for installation on another aircraft to expedite mission accomplishment, or engine replaced due to economic impact of maintenance required.

EXCHANGE AND REPAIR (E & R) A repairable item which, when unserviceable, is returned to the original vendor in exchange for a serviceable replacement.

FIELD MAINTENANCE means the performance of aircraft and avionic line maintenance at locations other than the <Your Agency> Hangar, <Location>.

FLIGHT TIME means the time from the moment the aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing.

HARD-TIME means a primary maintenance process that requires an appliance or part be periodically overhaul in accordance with the Agency's maintenance manual or that it be removed from service.

HEAVY MAINTENANCE Any services that can not be performed in the <Your Agency> Hangar.

HOME BASE The <Your Agency> Hangar at <Location>.

LARGE AIRCRAFT means aircraft of more than 12,500 lbs. maximum certificated takeoff weight.

LINE MAINTENANCE includes daily servicing & maintenance, routine maintenance, bench checks, calibration, repairs accomplished in support of day-to-day aircraft operations and required to maintain the <Your Agency>s aircraft fleet in a mission-capable status.

LOCAL REPAIR ITEM. A repairable item which, when unserviceable, is repaired locally either by arrangements with a commercial vendor or in local base shops.

LINE SUPPORT The services required to support the <Your Agency> fleet and Hangar facility.

MAINTENANCE INSPECTIONS include daily/preflight, segment, safety, service, special, and numbered inspections. These inspections vary in scope and frequency of performance according to types of aircraft.

MAINTENANCE MANAGER - means the person within the specific organizational structure who is directly responsible for the maintenance program. In the <Your Agency>/<Aviation Title>.

MAJOR ALTERATIONS means an alteration not listed in the aircraft, or aircraft engine/propeller specifications that (1) might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or (2) is not done according to accepted practices, or cannot be done by elementary operations.

1.AIRCRAFT MAJOR Alterations Alterations of the following parts and alterations of the following types, when not listed in the aircraft specifications issued by the FAA, use airframe major alterations:

Wings.

Tail surfaces.

Fuselage.

Engine mounts.

Control system.

Landing gear.

Hull or floats.

Elements of an airframe including spars, ribs, fittings, shock absorbers, bracings, cowlings, fairings, and balance weights.

Hydraulic and electrical activating systems and components.

Rotor blades.

Changes to the empty weight and balance which result in an increase in maximum certificated weight or center of gravity limits of the aircraft.

Changes to the basic design of the fuel, oil cooling, heating, cabin pressurization, electrical, hydraulic, de-icing, or exhaust system.

Changes to the wing or to fixed or movable control surfaces which affect flutter and vibration characteristics.

2.POWERPLANT MAJOR ALTERATIONS. The following alterations of a powerplant, when not listed in the engine specifications issued by the FAA, are powerplant major alterations:

Conversion of an aircraft engine from one approved model to another involving any changes in compression ratio, propeller reduction gear, impeller gear ratios, or the substitution of major engine parts which require extensive rework and testing of the engine.

Changes to the engine by replacing aircraft engine structural parts with parts not supplied by the original manufacturer or parts not specifically approved by the Administrator.

Installation of an accessory which is not approved for the engine.

Removal of accessories that are listed as required equipment on the aircraft or engine specification.

Installation of structural parts other than the type of parts approved for installation.

Conversions of any sort for the purpose of using fuel of a rating or grade other than that listed in the engine specifications.

3.PROPELLER MAJOR ALTERATIONS. The following alterations of a propeller when not authorized in the propeller specifications issued by the FAA are propeller major alterations:

Changes in blade design.

Changes in hub design.

Changes in the governor or control design.

Installation of a propeller governor or feathering system.

Installation of propeller de-icing system.

Installation of parts not approved for the propeller.

4.APPLIANCE MAJOR ALTERATIONS. Alterations of the basic design not made in accordance with recommendations of the appliance manufacturer or in accordance with an FAA Airworthiness Directive are appliance major alterations. In addition, changes in the basic design of radio communication and navigation equipment approved under type certification or a Technical Standard Order that have an effect on frequency stability, noise level, sensitivity, distortion, suprious radiation, AVC characteristics, or ability to meet environmental test conditions and other changes that have an effect on the performance of the equipment are also major alterations.

MAJOR INSPECTION means the performance of a specific segment of the total overhaul requirement in a series of blocks at prescribed long-term intervals.

MAJOR MODIFICATION means a modification that (1) might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities of airworthiness, or (2) is not done according to accepted practices or cannot be done by elementary operations.

MAJOR REPAIR means a repair that (1) if improperly done, might appreciably affect weight, balance, structural strength, performance, powerplant operations, flight characteristics, or other qualities of airworthiness; or (2) is not done according to accepted practices, or cannot be done by elementary operations.

1.AIRFRAME MAJOR REPAIRS. Repairs to the following parts of an airframe and repairs of the following types involving the strengthening, reinforcing, splicing, and manufacturing of primary structural members of their replacement, when replacement is by fabrication such as riveting or welding, are airframe major repairs:

Box beams.

Monocoque or semimonocoque wings or control surfaces.

Wing stringers or chord members.

Spars.

Spar flanges.

Members of truss-type beams.

Thin sheet webs of beams.

Wing main ribs and compression members.

Engine mounts.

Fuselage longerons.

Members of the side truss, horizontal truss, or bulkheads.

Main seat support braces and brackets.

Landing gear braces or struts.

Axles.

Wheels.

Parts of the control system such as control columns, pedals, shafts, brackets, or horns.

Repairs involving the substitution of material.

The repair of damaged areas in metal or plywood stressed covering exceeding six inches in any direction.

The splicing of skin sheets.

The repair of three or more adjacent wing or control surface ribs, or the leading edge of wings and control surfaces between adjacent ribs.

The repair of portions of skin sheets by making additional seams.

Repair of fabric covering involving an area greater than that required to repair two adjacent ribs.

Replacement of fabric on fabric-covered parts such as wings, fuselages, stabilizers, and control surfaces.

Repairing, including rebottoming, of removable or integral fuel tanks and oil tanks.

2.POWERPLANT MAJOR REPAIRS. Repairs of the following parts of an engine and repairs of the following types are powerplant major repairs:

Separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger.

Separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with other than spur type propeller reduction gearing.

Special repairs to structural engine parts by welding, plating, metalizing, or other methods.

3.PROPELLER MAJOR REPAIRS. Repairs of the following types to a propeller are propeller major repairs:

Any repairs to, or straightening of, steel blades.

Repairing or machining of steel hubs.

Shortening of blades.

Repair of propeller governors.

Overhaul of controllable pitch propellers.

Repairs to deep dents, cuts, scars, nicks, etc., and straightening of aluminum blades.

The repair or replacement of internal elements of blades.

Repairs to composition blades.

4.APPLIANCE MAJOR REPAIRS. Repairs of the following types to appliances are appliance major repairs:

Calibration and repair of instruments.

Calibration of radio equipment.

Rewinding the field coil of an electrical accessory.

Complete disassembly of complex hydraulic power valves.

Overhaul of pressure type carburetors, and pressure type fuel, oil, and hydraulic pumps.

MINIMUM EQUIPMENT LIST (MEL) means a regulatory authorization to continue to operate an aircraft with inoperable instruments or equipment. The aircraft may be operated under all applicable conditions and limitations contained in the minimum equipment list.

MINOR MODIFICATION means a modification that (1) will not affect the quality of airworthiness, or (2) can be done in accordance with accepted practices, or can be done by elementary operations. Normally, a minor modification is a modification other than a major modification.

MINOR REPAIR means a repair that (1) will not affect the quality of airworthiness, or (2) can be done in accordance with accepted practices, or can be done by elementary operations. Normally, a minor repair is a repair other than a major repair.

MODIFICATION means a change or series of changes in a completed system to adapt it to another use, correct deficiencies, increase reliability, or improve its effectiveness.

NON-AIRWORTHINESS ITEMS. These are items other than inoperative instruments or equipment which do not affect the airworthiness of the aircraft.

ON CONDITION ITEM (OC) means an item of equipment that must be restricted to one on which a determination of continued airworthiness may be made by a visual check, measurement, test, or other means without a teardown inspection or overhaul.

OFF STATION SITES Locations which would require Contractor support in the event of

maintenance problems that preclude the aircraft being flown to its home base.

OPERATIONAL CHECK means an "in motion" or "power on" test for determining that an item of equipment will operate at a specified performance level.

OVERHAUL means the disassembly, cleaning, inspection, necessary replacement or repair of parts, reassembly, adjustment, and testing of an item or equipment in accordance with recommended procedures.

PERFORMANCE STANDARD means a performance measurement expressed numerically which represents an acceptable level of performance.

PREVENTIVE MAINTENANCE means simple or minor preservation operations and the replacement of small standard parts not involving complex assembly operations. It is corrective action taken before it becomes necessary to make a major repair.

PROPELLER means a device for propelling an aircraft that has blades on an engine-driven shaft and that, when rotated, procedures by its action on the air, a thrust approximately perpendicular to its plane of rotation. It includes control components normally supplied by its manufacturer, but does not include main and auxiliary rotors or rotating airfoils of engines.

PUBLIC AIRCRAFT means aircraft used only in the service of a government or a political subdivision. It does not include any government-owned aircraft engaged in carrying persons or property for commercial purposes.

QUALITY CONTROL DESIGNEE means a certificated person having the required experience, judgment, and training to perform quality control functions usually in the absence of, or as a supplement to, a quality control organization.

RAMP CALIBRATION means the calibration of an aircraft-installed avionic-system.

RELIABILITY PROGRAM means a program which establishes time limitations or standards for determining time limitations for overhauls, inspections and checks of airframes, engines, propellers, appliances and emergency equipment.

REPAIR means the restoration of an item of equipment to a serviceable condition after fault detection.

REPARABLE ITEM. An item which, when becoming unserviceable, is usually repaired to reuse. The decision to repair an unserviceable item is based on the economics of discard and replacement versus repair. This includes Exchange and Repair Items, Repair and Return Items, Local Repair Items, and select E & R Equipment.

REMOVE AND REPLACE (R&R). A reparable item which, when becoming unserviceable, is removed for repair and subsequent return of the unit to serviceable stock.

REQUIRED INSPECTION ITEMS (RII) include those of maintenance and alterations which could result in a failure, malfunction, or defect endangering the safe operation of the airplane, if not performed properly, or if improper parts or material are used.

ROUTINE MAINTENANCE means the servicing of aircraft and the accomplishment of unscheduled and preventive maintenance between scheduled line maintenance inspections.

SELECT E & R EQUIPMENT. An avionic reparable which is specially controlled when unserviceable to ensure that its repair is performed by an FAA approved avionic shop.

SMALL AIRCRAFT means aircraft of 12,500 lbs, or less, maximum certificated take-off weight.

SPECIAL MAINTENANCE-INSPECTION DESIGNEE means a qualified person who is designated to (1) perform specific maintenance and inspection functions, (2) make specific airworthiness determinations, and (3) release specific items of maintenance to service.

SPECIAL INSPECTIONS include inspections to determine airworthiness following hard landings, flight through turbulent air, lightening strikes or one prescribed by an airworthiness directive, maintenance alert directive, or other instructions from the <Your Agency>/<Aviation Title>.

TIME CHANGE ITEM means an item of equipment which has an established overhaul time which is related to time in service.

TIME CONTROLLED COMPONENT means a part or component which has an established service life, at which time certain maintenance must be performed or the item scrapped. The service life may be based on operating hours, cycles, landings, calendar time, or combinations of these.

TIME IN SERVICE with respect to maintenance time records means the time from the moment an aircraft leaves the surface of the earth until it touches down at the next point of landing.

TROUBLE SHOOTING means (1) determining the probable cause of a malfunction through analysis of data flow logic and (2) employing efficient fault isolation procedures and prescribing or taking corrective action.

TURN-AROUND MAINTENANCE refers to aircraft maintenance performed by a facility of a higher category providing line maintenance services for an aircraft maintenance facility of a lower category.

<Your Agency> FLEET Aircraft operated by the <Your Agency> including aircraft under charter to the <Your Agency>.

VISUAL CHECK means checking an item of equipment for cleanliness, need for lubrication or painting, and deterioration of parts or materials.

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r Agency> GMM Form or

(b)the flight test was completed and was satisfactory, and the aircraft is released to Quality Control by completing <Your Agency> GMM Form.

If the flight test was satisfactory, the PIC will make a statement in the discrepancy block of the Aircraft Log Book that the aircraft is released to Quality Control.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(8)All discrepancies found during flight test that are related to the reason for the test flight require buy back by QC before the aircraft is returned to service.

(9)Quality Control will complete <Your Agency> GMM Form and enter an "Approval for Return to Service" statement in the corrective action block of the aircraft log book.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

15.MAINTENANCE ANALYSIS PROGRAM .

A.GENERAL.

The <Your Agency> Maintenance program is monitored by a trend analysis process. This process analyzes all report of findings and/or actions taken during aircraft and component maintenance.

B.RESPONSIBILITIES.

The <Your Agency> Maintenance Coordinator is responsible for ensuring the trend analysis program is functional, findings are reviewed, and appropriate actions taken.

C.PROGRAM ELEMENTS.

The <Your Agency> Maintenance Analysis Program shall analyze:

(1)Repair actions - aircraft and components

(2)Pilot reports (PIREPS) - especially repeat reports

(3)Repeat discrepancies of maintenance functions.

(4)Reject of new or newly overhauled components and/or parts

The data collected by this program will be grouped according to the Air Transport Association Specification 100, and the results of the findings compiled for review. Significant trends, when the data are plotted against aircraft operating hours, shall be acted upon immediately. Any trend that presents an impending airworthiness liability to <Your Agency> aircraft or danger to flight crews is considered a significant trend.

D.SPECTROGRAPHIC OIL ANALYSIS PROGRAM (SOAP).

All <Your Agency> aircraft engines shall be subjected to an oil analysis program that provides a method to monitor unusual wear to components or sub-units. The program shall be specific to the type of engine installed and provide trend analysis, immediate feedback, and recommended actions to the <Your Agency> Maintenance Coordinator.

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III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

16.MAINTENANCE ALERT PROCESS.

A.GENERAL.

Situations arise where special maintenance actions are necessary to preserve or return an aircraft's airworthy condition. These situations are normally unique to the operator's mission, environment, maintenance support, parts support program, and other factors. When the airworthiness of a <Your Agency> aircraft is impaired the <Your Agency> Maintenance Coordinator may initiate a Maintenance Alert Directive (MAD) to remedy the situation.

B.MAINTENANCE ALERT DIRECTIVE (MAD).

The MAD is a letter containing a description of the situation affecting airworthiness and specified actions signed by the <Your Agency> Supervisor of Maintenance. It will contain the following information:

(1)Date of letter

(2)Subject.

(3)Applicability.

(4)Problem identification (history).

(5)Concise instructions.

(6)Compliance and discrepancy reporting requirements.

(7)Cancellation of MAD.

C.DURATION OF MADS.

Maintenance Alert Directives are temporary, immediate issuances and will be self-cancelling upon completion.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

D.ISSUANCE AND DISTRIBUTION.

(1)Maintenance Alert Directives will be issued to transmit the following types of information.

(a)Notification to add or delete items on inspection checklists.

(b)Request for short notice maintenance actions or to provide information for the maintenance analysis program.

(c)Alert personnel to safety hazards.

(2)In urgent circumstances, MAD information may be transmitted by telephone/dispatch, and later followed by a mailed copy, to:

(a)All <Your Agency> Maintenance personnel, including the COTR

(b)Chief Pilot

(c)All <Your Agency> Maintenance Contractors and line support organizations

(3)All <Your Agency> maintenance activities, including contractors, shall ensure that all personnel are familiar with the MAD system.

E.MAINTENANCE ALERT DIRECTIVE MASTER INDEX.

(1)Master Index

The Master Index, located in office of the <Your Agency> Maintenance Coordinator, is a listing by number, subject, and approval date of all general Maintenance Alert Directives issued to <Your Agency> operated aircraft.

(2)MAD Number

This denotes <Your Agency> identification number assigned for record keeping purposes. It will contain the fiscal year and sequence number of the MAD. (i.e., 93-16)

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(3)Subject

This is a brief, descriptive title which identifies the general area of work to be accomplished.

F..COMPLIANCE..

Compliance with MAD directives shall be in accordance with standard reporting procedures in permanent aircraft/equipment records. For example, if the MAD can be accomplished during a daily inspection, the compliance will be recorded in the aircraft log book. When this process is not applicable, i.e. the MAD applies to parts in the stores area, the inspector performing the actions to comply with the MAD shall sign a copy of the MAD including the date and actions taken and return the copy to the <Your Agency> Maintenance Coordinator.

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III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

17.AIRCRAFT TIME CONTROLLED COMPONENTS.

A.GENERAL.

This section establishes a procedure for assuring timely replacement of time-controlled components and accomplishment of other compliance items. These items are to be monitored by the <Your Agency> Maintenance Coordinator and components replaced or compliance accomplished prior to the items becoming overdue.

B.OVERHAUL/NUMBERED INSPECTIONS

(1)All components on aircraft in for major inspections shall be replaced if time remaining on the component is less than the next inspection not-to-exceed (NTE) time.

(2)Exceptions

(a)Occasionally it is desirable to replace an item that has more time that paragraph B.(1) minimum. Such items are those difficult to reach except during overhaul, major components, or items requiring considerable aircraft downtime. The <Your Agency> Maintenance Coordinator shall make the economical determination in these cases and schedule replacement accordingly.

(b)If parts are not available, the <Your Agency> Maintenance Coordinator may authorize a part to remain in service when time remaining is less than paragraph B.(1), but not to exceed the established time limit.

C.REPLACEMENT SCHEDULING AND RECORDING.

(1)For accessible components/items, the <Your Agency> Maintenance Coordinator shall have the time-controlled items scheduled for replacement as close to expiration time as possible. In no case shall time limits be exceeded.

(2)Special emphasis shall be placed on keeping accessory overhaul control records current and updated as replacement components are installed on the aircraft. For components/items changed between inspections information shall be entered on the aircraft flight log book by maintenance and transferred to the accessory overhaul control record by the <Your Agency> Maintenance Coordinator.

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III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

18.PROCESSING AND RETENTION OF MAINTENANCE RECORDS.

A.PURPOSE.

This chapter establishes the responsibilities and procedures for maintaining and storing temporary and permanent aircraft records of <Your Agency> aircraft by "N" number and serial number.

B.PRIME OFFICE.

Office of the <Your Agency>, <Your Agency Aviation Title>, Supervisor of Maintenance

C.RESPONSIBILITIES.

The reviewing and updating of all records of aircraft maintenance performed is the responsibility of the <Your Agency> Maintenance Coordinator, Office of the Supervisor of Maintenance, <Your Agency>, Agency Address.

D.DEFINITIONS.

(1)TEMPORARY RECORD. Temporary aircraft records consist of segment inspections and below.

(2)PERMANENT RECORD. Permanent aircraft records consists of the permanent logbook and all forms and records used for major repairs, inspections, airworthiness directives, major/minor modifications or alterations, and major overhauls. Records of the last complete overhaul inspection cycle for each aircraft, airframe, engine, propeller, rotor, and appliance, i.e., serviceable parts tags will be replaced in the aircraft maintenance files.

E.PROCEDURES.

(1)All component overhaul times will be maintained by the <Your Agency> Maintenance Coordinator.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(2)Airworthiness Directives (AD's) compliance will be recorded in the aircraft maintenance log. Repetitive AD's will be noted in the aircraft maintenance log and tracked by the <Your Agency> Maintenance Coordinator. The person who performs the work required by the AD is responsible for recording compliance on the aircraft maintenance records.

(3)The maintenance files will contain all records required by the Federal Aviation Regulations (FAR's) as follows:

(a)The total time in service of the airframe, engine, and propeller.

(b)The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.

(c)The time since the last overhaul of each item installed on the aircraft which is required to be overhauled on a specified time basis.

(d)The identification of the current inspection status of the aircraft, including the time since the last inspections required by the inspection program under which the aircraft and its appliances are maintained.

(e)The current status of applicable airworthiness directives, including the date and methods of compliance, and if the airworthiness directive involves recurring action, the time and date when the next action is required.

(f)A list of current major alterations and repairs to each airframe, engine, propeller, rotor, and appliances (FAA Form 337and Engineering drawings may also be included.)

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

F.RECORD RETENTION

(1)Permanent Records

The permanent logbook; engine/propeller historical records; all forms and records used for major repair, modifications, or alterations; and major and overhaul inspection forms through the last complete overhaul cycle for each aircraft, airframe, engine, propeller, rotor, and appliance are permanent records and shall be:

(a)Retained as long as the aircraft is owned.

(b)Transferred to the new owner when the aircraft is sold.

(c)Retained for one year if the aircraft is disposed of as scrap or two years if the aircraft is destroyed in an accident.

(2)Temporary Records

These records will be retained until superseded by like scope and detail. These records are stored by "N" number and chronological order. Temporary aircraft records consist of minor (segment) inspections and minor repair records of each aircraft.

(a)Maintenance forms and releases used exclusively for daily or preflight inspection may be disposed of after a period of three months.

(b)Line maintenance inspection forms/cards and worksheets (excluding daily and preflight inspection form(s) shall be placed in a supplemental folder to the permanent logbook and may be disposed of after two years from the date of approval for return to service of the aircraft to which the records pertain.

(c)Inspection forms, cards, and sheets used in conjunction with major and overhaul inspections shall be retained by the performing activity until the work is superseded.

(d)Vendor's documentation shall be retained until the vendor's item is replaced.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(3)Record Location

(a)These records are maintained by the organization to which the aircraft is assigned. When the aircraft is transferred to a new location, the records will be transferred to the receiving organization by traceable means other than placing aboard the aircraft.

(b)All maintenance records required to be kept by this section will be available for inspection by the Federal Aviation Administrator or any authorized representative of the National Transportation Safety Board.

(4)Transfer of Records

The <Your Agency> Maintenance Coordinator is responsible for the maintenance and transfer of all records. (Reference page III.18.1, Responsibilities)

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

19.REPORTS OF DEFECTS OR UNAIRWORTHY CONDITIONS.

A.GENERAL.

FAA regulations require the reporting of occurrences or detection of failures, malfunctions, or defects within 72 hours of discovery to the FAA Flight Standards district office in whose area the operator has its principal operations base. The Supervisor of Maintenance will cause a report to be filed to:

Manager

Flight Standards District Office

<Your Appropriate FSDO Address>

B.CONDITIONS TO BE REPORTED.

The following conditions are to be reported within 72 hours of discovery:

(1)Fire during flight and whether the related fire warning system functioned properly.

(2)Fire during flight not protected by a related fire warning system.

(3)False fire warning during flight.

(4)An engine exhaust system that causes damage during flight to the engine, adjacent structure, equipment or components.

(5)An aircraft component that causes accumulation or circulation of smoke, vapor, or toxic or noxious fumes in the crew compartment or passenger cabin during flight.

(6)Engine shutdown during flight because of flame-out.

(7)Engine shutdown during flight when external damage to the engine or airplane structure occurs.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(8)Engine shutdown during flight due to foreign object ingestion of icing.

(9)Engine shutdown during flight or more than one engine.

(10)A propeller feathering system or inability of the system to control overspeed during flight.

(11)A fuel or fuel-dumping system that affects fuel flow or causes hazardous leakage during flight.

(12)An unwanted landing gear extension or retraction or opening or closing of landing gear doors during flight.

(13)Brake system components that result in loss of brake actuating force when the airplane is in motion on the ground.

(14)Aircraft structure that requires major repair..

(15)Cracks, permanent deformation, or corrosion of aircraft structures if more than the maximum acceptable to the manufacturer or the FAA.

(16)Aircraft components or systems that result in taking emergency action during flight (except action to shutdown an engine).

(17)Emergency evacuation systems or components including all exit doors, passenger emergency evacuation lighting system, or evacuation equipment that are found defective, or that fail to perform the intended functions during an actual emergency or during training, testing, maintenance, demonstrations, or inadvertent deployment.

C.DEFINITION

For the purposes of this subpart, "during flight" means the period from the moment the aircraft leaves the surface of the earth on takeoff until it touches down on landing.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

D.METHOD OF REPORTING.

Reports of defects and/or un-airworthy conditions shall be reported to the <Your Agency> Maintenance Coordinator in letter format or using FAA Malfunction and Defect Report, FAA form 8010-4.

(1)Information to be included in the report, as applicable, is:

(a)Aircraft registration number of the aircraft

(b)Aircraft manufacturer, model/series, and serial number

(c)Powerplant manufacturer, model/series, and serial number

(d)Propeller manufacturer, model/series, and serial number

(e)Specific part of component causing trouble

(1)Part Name

(2)Manufacturer's model or part number

(3)Serial number

(4)Part/Defect location

(f)Appliance/component assembly that includes part

(1)Appliance/component name

(2)Manufacturer

(3)Model or part number

(4)Serial number

(g)Part total time

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(h)Part time since overhaul and last overhaul facility

(i)Part condition

(j)Comments describing the malfunction or defect and the circumstances under which it occurred. State the probable cause and the recommendations to prevent recurrence. Include whether an accident or incident was involved, disposition of the component/part, and any other information that would assist in the investigation of the malfunction or defect. Indicate date and conditions under which it was discovered (i.e., 10/23/92 during C-1 check.)

The report shall be identified with the following information:

(a)Name of the submitter (i.e., AXZ Repair Station, BCA Aviation, etc.)

(b)<Your Agency> as the operator

(c)Date submitted

(d)Telephone number (405) 231-5805 for further details.

The report shall be filed even though all information required above is not available. When additional information, including information from the manufacturer or other agency, concerning a report required by this section, the information will expeditiously be submitted as a supplemental to the first report and reverence the date and place of submission of the first report.

E.REPORTS TO THE FAA.REPORTS TO THE FAA.REPORTS TO THE FAA.REPORTS TO THE FAA

The <Your Agency> Maintenance Coordinator shall review each report, determine subsequent actions, and forward a copy of the report to the FAA as required.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

20.CANNIBALIZATION OF AIRCRAFT AND/OR EQUIPMENT.

A.GENERAL.

Cannibalization of aircraft or equipment to obtain serviceable parts shall be resorted to only when the item needed is not in stock and cannot be obtained in time to meet flight schedules or other priority requirements.

B.AUTHORITY

The Supervisor of Maintenance is the approving authority for cannibalization of aircraft

C.IDENTIFICATION OF CANNIBALIZED AIRCRAFT.

A list of equipment, parts, etc., removed from the aircraft shall be entered on the aircraft logbook. A notice shall be placed on the control column of the aircraft identifying that the aircraft has been "cannibalized" to alert maintenance and other personnel who may be moving the aircraft that certain components are missing.

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III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

21.REQUIRED INSPECTION ITEM LISTS

A.GENERAL.

(1)Federal Aviation Regulations require designation of the items of maintenance and alteration that must be inspected (required inspections). This list must include at least those items that could result in a failure, malfunction, or defect endangering the safe operation of the aircraft, if not performed properly or if improper parts or material are used.

(2)In addition to the items identified in paragraph E of the Chapter, a quality control inspector or maintenance supervisor may designate any major alteration or major repair of an aircraft component, aircraft system, or aircraft as a required inspection item. The term Major Alteration and Major Repair are defined in Part 1 of the Federal Aviation Regulations and in the Glossary of Terms section of this manual.

(3)Required Inspection Items may not be signed off by the individual that performed the work. A "second person" is required to sign off any work operation that is listed on the "Required Inspection Item" list.

**NOTE**: The person performing the required inspection may give physical assistance such as lifting or holding, but cannot perform any of the critical steps or operations that require safety check, measurement, or sign-off verifying compliance with procedure.

(4)All work on Required Inspection Items shall be in accordance with the procedures, standards, and limitations contained in current <Your Agency> aircraft maintenance programs or manufacturers' manuals. The manufacturers' manuals will take precedence over <Your Agency> maintenance procedures.

(5)Persons authorized to perform inspection of "Required Inspection Items" shall be under the jurisdiction of the <Your Agency> Supervisor of Maintenance organization when performing such inspections, regardless of their current position classification with their parent organization.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

B.REQUIRED INSPECTION ITEMS (RII) INSPECTION AUTHORIZATION.

(1)Classifications of RII authority

(a)Full authority - may inspect all RII items. This authority is granted to qualified full time <Your Agency> Maintenance personnel. The authority remains in effect until revoked by the issuing authority.

(b)Limited - may inspect only RII items shown on individual authorization letters. This authority may be issued to any qualified employee within the <Your Agency> maintenance program. This authority is normally issued when a person with "Full Authority" is unavailable to perform RII functions. The authority is issued for a specific RII function and for a specific time frame.

(c)One-time Limited - may inspect only emergency maintenance item. This authority can be issued to either full time <Your Agency> maintenance personnel or contract personnel. The authority is normally issued for maintenance performed away from an <Your Agency> maintenance facility. The authority is issued for a specific RII function, and may be exercised for only one task.

(2)Required Qualifications(2)Required Qualifications

(a)Understanding and knowledge of FAR's and the <Your Agency> General Maintenance Manual.

(b)Valid FAA Mechanic Certificate with both airframe and/or power plant ratings or appropriate repairman certificate.

(c)Satisfactorily completed familiarization maintenance training on applicable type of aircraft.

(d)Satisfactorily completed RII or equivalent training course.

(3)When work is to be contracted to an outside organization involving inspection of Required Inspection Items, the <Your Agency> Supervisor of Maintenance will ensure that the contracting agency has a listing of qualified personnel, who are properly certificated, trained, and authorized to perform RII inspections.

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C.PROCEDURES FOR INSPECTION OF REQUIRED INSPECTION ITEMS.

(1)Required inspection items appearing on the work order will be clearly identified as being in the (RII) category.

(2)At the completion of maintenance on a required inspection item, the mechanic performing the maintenance will request that the item be inspected, after (s)he has signed the "MECH" or "BY" block on the work card.

(3)The inspector will then perform the required inspection as follows:

(a)Work card: If an item is approved for return to service, the inspector will so designate by signing and dating the block marked "INSPECTOR".

(b)Aircraft Log Book: If an Aircraft Log Book write-up requires an RII and is approved for return to service, the inspector will stamp and date the block marked "RII" on the log page after the mechanic enters the corrective action.

(4)Non-approved (Rejected) Inspection Buy-back Procedures

(a)Aircraft Log Book: If an Aircraft Log Book write-up requiring an RII is not approved for return to service, the inspector will not stamp the "RII" block on the log page. The inspector will contact maintenance and discuss the reason(s) for rejection.

(b)If the item is rejected, the mechanic will make the designated repairs and then request that it be re-inspected.

(c)In the case of a dispute over the rejection of an item, an inspector's decision may only be countermanded by the <Your Agency> Maintenance Coordinator.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

D.REQUIRED INSPECTION ITEMS (RII).

The following are the designated items of maintenance and alterations which must be inspected by the RII Inspector whenever the type of maintenance identified below is accomplished on the aircraft. Additionally, whenever any of these systems or components are disturbed to gain access to other components, their reinstallation must be a Required Inspection Item. The RII will require checking by a second person before release for flight. The second person cannot be the one who performed the work.

**NOTE 1:** Any non-routine item written as a result of an RII is considered a part of the original inspection and, as such, is also an RII.

**NOTE 2:**  Installation inspection is defined as an inspection of the final (prior to release for flight) installation, operation, rigging, leak check, etc., as required by the Manufacturer's maintenance manual or applicable work card.

(1)Doors and Windows

(a)Rigging of latching mechanism which require adjustment of two or more rod ends.

(b)Installation and/or performance of maintenance on entry doors, cargo doors, or any doors or exits within a pressured area.

(c)Replacement or reinstallation of any window within a pressurized area.

**NOTE:** Removal of an emergency exit for ventilation purposes or to facilitate access for maintenance does not require an inspection buy back upon re-installation, unless maintenance is performed on the exit door or adjacent structure.

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(2)Flight Controls (Primary or Secondary) - Includes the following for ailerons, elevators, rudders, landing flaps, stabilizers, trim tabs, and actuators.

(a)Installation/rig of the flight controls

(b)Complete system rig

(c)Control rod installation/rig

(d)Flight control actuators installation/rig

(e)Flight control cable installation/rig or the adjustment of any turnbuckle or control rod

(f)flight control balance

(3)Landing Gear

(a)Landing gear assembly installation/rig (excludes tire, wheels, brakes, scissor links, and servicing).

(b)Installation/rig of any component or actuator that affects extension, retraction, locking or indication system.

(c)Extension check of emergency extension system following a repair/rig that affects extension or locking.

(4)Power plants

(a)Final installation of powerplant and/or gearboxes.

(b)Engine mount installation and torquing.

(c)Final QEC buildup.

(d)Control cable/rod installation and/or rigging.

(e)Fuel control unit installation and/or rigging.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(f)Prop pitch control installation and/or rigging.

(g)Prop governor installation and/or rigging.

(h)Hot Section Inspection.

(i)APU rigging and/or final installation and operational check.

(j)Thrust reverser installation and/or rigging.

(5)Propeller

(a)Inspection of completed installation.

(b)Observe propeller functions in accordance with run-up procedures.

(6)Major Repair or Alteration of Primary Structure or Flight Control Surface

(a)Includes any repair/replacement or alteration to pressurized skin/bulkheads, and primary support frames, intercostals, webs, stringers, forgings, castings, and similar structural member. Additionally, it includes repair/replacement of structure which supports flight controls, actuators, cables, linkages, landing gear controls, or door controls.\

(b)Any maintenance or quality control supervisor may classify an operation not listed above as a required inspection item if there is reason an inspection of the work by a Quality Control Inspector is warranted.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

22.WEIGHT AND BALANCE.

A.PROCEDURES.

The following outlines the basic empty weight and balance control program for aircraft operated by the <Your Agency>. The primary goal of this control program is to establish and maintain a master file for each aircraft's weight and balance, to schedule aircraft for periodic weighing, and to provide procedures for the accountability of basic empty weight and balance during the period between weighing.

(1)The <Your Agency> Maintenance Coordinator will be responsible for administering this control system.

(2)The approved weighing interval for each type of aircraft is found in the approved maintenance program for each make and model of aircraft and applicable FAR's.

(3)Excluded from this control system are the exclusive use rental aircraft which will utilize the system prescribed by the owner.

B.GUIDELINES.

The guidelines established herein shall be adhered to in the following manner:

(1)The aircraft will utilize individual aircraft weights and normally will be weighed at intervals of 36 calendar months.

(a)The actual weighing should coincide as much as practical with major inspections or overhauls.

(b)The scheduling for a periodic weighing will be accomplished by the <Your Agency> Maintenance Coordinator.

(c)The responsibility for accountability of basic empty weight and balance changes between periodic weighing is placed with the <Your Agency> Maintenance Coordinator.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(2)Extensions of this weighing period for a particular type aircraft may be granted when the following can be ensured.

(a)All pertinent records and actual weight changes during the preceding 36 months of operation show that weight and balance records maintained are accurate.

(b)All extensions must be approved by the <Your Agency> Supervisor of Maintenance

(c)Such extensions will be limited to 12 months, and increases should not be granted which would permit any aircraft to exceed a total of 48 calendar months since the last weighing.

C.CALCULATING WEIGHT PROCEDURES

All weight changes of 1 pound or more are to be recorded and accounted for in the following manner:

(1)The aircraft and/or avionics supervisor working the aircraft is to assure that all items affecting weight and balance are recorded.

(2)This includes non-routine and routine work orders covering repairs, alterations, Airworthiness Directives, and service bulletins.

(3)The aircraft weight and balance manual shall be prepared in accordance with instructions appropriate procedures in the manual.

(4)The Airplane Flight Manual and the aircraft weight and balance manual will be used as the official record of basic empty weight and balance of an aircraft either by actual weighing or by computations.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

D.DEFINITIONS.

(1)Basic Empty Weight (BEW) is the weight of the structure, power plant, furnishings, systems, and other items of equipment that are considered an integral part of the aircraft configuration plus:

(a)Fixed ballast;

(b)Unusable fuel;

(c)Full engine oil tanks and system;

(d)Full hydraulic system;

(e)Other fluids required for normal operation of aircraft systems, except potable water and lavatory recharge water; and

(f)All items listed on the Equipment List.

(2)Operational Empty Weight (OEW) is the Basic Empty Weight plus the Operational Items.

(3)Operational Items are those personal items, equipment, and supplies that are necessary on a particular operation. These items may vary for a particular aircraft configuration according to the operator's allowances for the service intended. These services include:

(a)Manuals and navigational equipment.

(b)Air-crew members, passengers, and baggage.

(c)Removable cabin and meal service equipment.

(d)Food and beverages.

(e)Usable drinking and washing water.

(f)Emergency equipment, (life rafts, life vests, etc.).

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(g)Cargo handling system, cargo containers, and/or cargo tie down equipment if used.

(h)Flight spares, maintenance supplies, and equipment.

(4)Maximum Design Takeoff Weight or Maximum Gross Weight (MDTW or MGW) of an aircraft is the maximum weight authorized by government regulations for the takeoff condition of a dispatch-loaded aircraft, and it excludes the weight of taxi and run-up fuel. This is the aircraft weight at "Brake Release" or start of takeoff run.

(5)Maximum Design Taxi Weight (MTW) is the maximum weight allowed for ground maneuvering per applicable governmental regulations. This weight includes the weight of taxi and run up fuel.

(6)Unusable Fuel is that amount of fuel that cannot be delivered to the engines are tanks are empty.

(7)Drainable Unusable Fuel is the "Unusable Fuel" minus the "Trapped Fuel".

(8)Trapped Fuel is the un-drainable fuel remaining when the aircraft is de-fueled and sumped in the static ground attitude, by using the normal means and procedures specified.

(9)Un-drainable Fluids is the amount of fluid remaining after draining by the normal means and specified procedures. Un-drainable fluids may be Anti-detonant augmentation injection, deicing and lavatory fluids.

(10)Arm is the horizontal distance of any item, pieces of equipment, etc., from the datum line. The arms length of distance is always given or measured in inches.

(11)Datum is a reference point or line from which distance measurements to objects are taken or began; it could be real or imaginary. A Datum may also be defined as a location on a vertical plane from which all pertinent horizontal measurements are made or indicated when the aircraft is in level flight attitude.

(12)Moment is the product of a weight multiplied by its arm.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

(13)Center of Gravity (CG) of an aircraft is the pivotal point about which the nose-heavy and tail-heavy moments are equal in magnitude. It is the point about which the weight of an aircraft or any other object is concentrated.

(14)Center of Gravity Range is the distance between the most forward and most rearward CG indicated in the pertinent aircraft specifications. these limits are determined, at the time of the design and manufacture of the aircraft, as the extreme loaded CG positions obtainable within the requirements of the applicable FAR's controlling the design of the aircraft.

(15)Tare Weight is the weight of any object that must be added/subtracted from the weight of the item being weighed.

E.WEIGHING PROCEDURES.

Weighing procedures will vary with the aircraft and the type of weighing equipment employed. The weighing procedure contained in the manufacturer's manual should be followed for each particular aircraft. Accepted general procedures when weighing an aircraft are:

(1)Remove excessive dirt, grease, moisture, etc., from the aircraft before weighing.

(2)De-fuel and sump aircraft fuel system. The amount of fuel remaining in the tanks and fuel system is termed **"unusable fuel"** and is included in the aircraft empty weight.

(3)Engine oil tanks are to be full, unless otherwise noted in maintenance manual and included in the aircraft empty weight.

(4)Have all items of equipment included in the certified empty weight installed in the aircraft when weighing. These items of equipment are a part of the current weight and balance report (Equipment List).

(5)Weigh the aircraft inside a closed building to prevent error in scale reading due to wind.

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(6)A pre-weighing checklist will be used and attached to the aircraft weighing form.

(7)Properly calibrate, zero and use the scales in accordance with the scales manufacturer's instructions. Each set of scales should have been calibrated, either by the manufacturer or by a department of civil weights and measures within 1 (one) year prior to weighing any aircraft.

(8)To determine the CG, place the aircraft in a level flight attitude.

(9)Do not set brakes while taking scale readings.

(10)Note tare weight when aircraft is removed from the scales.

F.WEIGHT AND BALANCE RECORDS.

The weight and balance system includes methods which will maintain a complete, current, and continuous record of the weight and center of gravity of each aircraft. Such records will reflect all alterations and changes affecting either the weight or balance of the aircraft, and will include a complete and current equipment list.

G.DISTRIBUTION OF WEIGHT AND BALANCE CHANGE

Copies of the weight and balance change will be distributed as follows:

(1)One copy (original) placed in the Airplane Flight Manual or Weight and Balance Manual, aboard the aircraft.

(2)One copy to the <Your Agency> Maintenance Coordinator for retention in the master weight and balance file for that aircraft.

III. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP)

23.PRECISION MEASURING EQUIPMENT CONTROL.

A.GENERAL.

(1)This chapter sets forth procedures for the calibration, recalibration, and maintenance of precision measuring equipment and specialized measuring equipment used by <Your Agency> aircraft and avionic maintenance personnel/contractors.

(2)This chapter also establishes the responsibilities and procedures for determining the adequacy and currency of all precision measuring equipment.

B.DEFINITION.

(1)Equipment Categories

(a)Category I, Prime Standards. Used to calibrate Category II equipment.

(b)Category II, Calibration Shop Standards. Used to calibrate Category III equipment.

(c)Category III, Maintenance Standards. Used for maintenance, trouble-shooting, testing, and verification of aircraft equipment and components.

(d)Category IV, Uncontrolled Work Standards. Equipment which by its usage does not require periodic calibration.

(2)Approved Technical Procedures

(a)Manufacturer's manuals shall be used for the calibration process and frequency of <Your Agency> precision measuring equipment. Companies performing maintenance for the <Your Agency> shall have their own system, approved by the <Your Agency> Maintenance Coordinator, for maintaining the condition and calibration of precision measuring equipment.

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NOTE: If a manufacturer's manual does not exist, approved maintenance and calibration specifications will be furnished by the <Your Agency> Maintenance Coordinator. To obtain this information the requestor will include the following information in the request: (a) Model, part, or type number, (b) Item name, (c) Manufacturer, (d) Serial number, and (e) National Stock Number (NSN) of applicable military specification, when known.

(3)Calibration

(a)Comparison of the accuracy of an item of precision measuring equipment with a standard of known accuracy and adjusting it to required accuracy when necessary.

(4)Calibration Interval

(a)The maximum calendar time an item of precision measuring equipment may be used without recalibration.

**NOTE:** All requests for adjustment to calibration intervals on <Your Agency> owned equipment shall be submitted to the <Your Agency> Maintenance Coordinator for review and approval.

(5)Certification

(a)The act of determining by calibration and/or maintenance that precision measuring equipment meets the requirements established for the specific use of that piece of equipment.

(6)Facility Capability Review (FCR)

(a)A review to determine if a shop has the technical capability, manuals or approved engineering technical specifications, and tools and equipment to accomplish calibration and maintenance of precision measuring equipment.

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(7)Precision Measuring Equipment

(a)Aircraft and/or avionic tooling, gauging, instrumentation, and test equipment used in maintaining and overhauling aircraft and aircraft components where specific measurements are specified.

(8)Traceability of Standards

(a)All Categories I, II, and III precision measuring equipment will be traceable to the National Bureau of Standards.

C.USE.

(1)Each person using an item of precision measuring equipment and specialized tools shall check that the item:

(a)Is identified by either the manufacturer's, or an <Your Agency> assigned serial number permanently marked on the item.

(b)Has an equipment category identified.

(c)Calibration is current, and the item is in a serviceable condition.

(d)Is removed from service and tagged as unserviceable, whenever the item is damaged, deteriorated or the calibration is not current.

**NOTE:** The item shall be repaired and/or recalibrated prior to further use.

D.ORGANIZATIONAL RESPONSIBILITIES.

(1)<Your Agency> Maintenance Coordinator shall perform surveillance on the precision measuring equipment used at the Home Base to assure:

(a)All precision measuring equipment, tools, and devices are inspected for deterioration, breakage, and general condition at thirty day intervals.

(b)Proper storage and usage is occurring. Precision measuring equipment, except for Category IV items, shall not be stored in tool boxes.

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(c)Calibration is kept current.

(2)<Your Agency> Maintenance Coordinator is responsible for:

(a)Monitoring precision measuring equipment maintenance and calibration system.

(b)Performing Facility Capability Reviews.

(c)Affixing, or causing to be affixed, a label denoting the appropriate equipment category and calibration status.

(d)Processes precision measuring equipment for calibration and maintenance.

(e)Establishing maximum calibration and repair intervals for all precision measuring equipment if different than those recommended by the equipment manufacturer.

(f)Identifying and obtaining manuals for or writing specifications for repair and functional test of precision measuring equipment when no manufacturers' manual(s) exist.

(g)Resolving questions concerning test equipment equivalency and issuing appropriate instructions regarding the item(s).

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IV.TECHNICAL DATA, FORMS, AND REPORTS

1.TECHNICAL DATA LIBRARY.

A.GENERAL.

The <Your Agency> maintains a technical data library <location> (Ex.: in it's Hangar at Will Rogers World Airport, Oklahoma City, OK), that contains the technical date required for maintaining it's fleet of aircraft.

This library contains manufacturer's manuals, service bulletins, airworthiness directives, and other technical material necessary for the maintenance of the <Your Agency> fleet.

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IV.TECHNICAL DATA, FORMS, AND REPORTS

2.FORMS.

A.GENERAL.

The <Your Agency> utilizes commercial maintenance organization's forms when applicable to record maintenance performed on it's aircraft and equipment. These forms are documented by commercial maintenance programs applicable to each aircraft and approved FAA forms used by various commercial repair facilities.

Records for purchase of spare parts, components, etc., are maintained by using maintenance contractor forms and requiring applicable information to be included on their forms.

Certain forms unique to <Your Agency> operations or where commercial forms are not applicable are maintained by the <Your Agency> Aircraft Maintenance Organization. These forms and the procedures for completing them are described in this Chapter.

Example:

USMS FORM NUMBERTITLE AND PURPOSE

NoneAircraft Log Book - Used to record flight time, servicing, and maintenance requirements and actions on USMS owned aircraft.

USMS GMM DDLDeferred Discrepancy List - Used to track deferred maintenance actions

USMS GMM FLT RELMaintenance Release and Flight Request - Used to show aircraft has been released for flight test, record results of flight test, and show flight crew acceptance.

FAA Form 8010-4Malfunction and Defect Report - Used to report aircraft and component malfunctions and defects to the USMS Maintenance Coordinators and the FAA.

IV.TECHNICAL DATA, FORMS, AND REPORTS

B.AIRCRAFT LOG BOOK.

The <Your Agency> aircraft log book is used to record operations and maintenance data and is part of the aircraft permanent record system.

The aircraft log Book is printed on NCR (No Carbon Required) paper and thus requires special handling to ensure that no writing is done on paper covering these sheets. All entries except signatures will be PRINTED legibly and accurately in BLACK ink. The fly sheet attached to the back cover must be inserted under the yellow sheet before any entries are made. Each daily aircraft log book sheet consists of three pages: blue, white, and yellow, in that order. The following procedures will be used:

Example:

(1)Entries

(a)**Date** - Date shall be entered as month/day/year.

(b)**Base** - Use the station identifier symbol; for example; "OKC" - Oklahoma City, "ATL" - Atlanta.

(c)**'N' number** - United States Registry Identification. Example; N1, N92.

(d)**Crew** - The pilot in command (PIC) will enter the names of all crewmembers and any additional passengers.

(e)**Station Symbol** - Enter the station identifier symbol; for example, "OKC" - Oklahoma City, "STL" - St. Louis.

(f)**Time** - Time in service will be entered by the pilot as the time OFF the moment an aircraft leaves the surface of the earth and ON when it touches it at the next point of landing. Enter the time in 24-hour local standard time. Pilots shall enter total elapsed time in tenths as follows. If an elapsed time meter is installed, the reading before take-off shall be entered in OFF block and the reading after landing in the ON block.

(1)1 - 2 min. = .0

(2)3 - 8 min. = .1

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Example: (contd.)

(3)9 - 14 min. = .2

(4)15 - 20 min. = .3

(5)21 - 26 min. = .4

(6)27 - 33 min. = .5

(7)34 - 39 min. = .6

(8)40 - 45 min. = .7

(9)46 - 51 min. = .8

(10)52 - 57 min. = .9

(11)58 - 62 min. = 1.0

(g)**Aircraft Landings** - Total landings carried forward from previous page and total landings on current page totaled together and brought forward to the next page.

(h)**Discrepancy Block** - Discrepancies, (preparing for flight, during flight, immediately following flight, and while performing line maintenance) shall be entered in this column.

(i)**Corrective Action Block** - Enter the corrective action for the discrepancy. Each discrepancy will be signed off with a signature, certificate number, date, and station.

(j)**Item/Component Replacement** - Maintenance will enter position number, part number, and serial number in this block.

(k)**Engine Trend Monitoring Check** - Flight crews shall record engine readings during cruise at least once a day, weather permitting.

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

(l)**Airworthy Release** - This space is provided for a certificated mechanic to release the aircraft for flight after maintenance has performed a Daily/Weekly inspection and/or repair.

(1)An authorized signature in the "Aircraft Released" block verifies that:

(a)All inspection panels, and hatches (interior and exterior) are closed and secured for flight.

(b)Aircraft total time and total landings recorded and entered are correct.

(c)The aircraft has been serviced with the specified amount of fuel.

(d)Daily inspection is completed and signed.

(e)So far as the discrepancy/corrective actions the aircraft is prepared for flight. A certificated mechanic with a valid airframe and powerplant rating will be authorized to sign this block.

(m)**Oil Added** - Enter oil in pints, quarts, or gallons as appropriate in space provided.

(2)Disposition of Forms

Upon completion of each operating day, the original blue sheet will be removed and delivered to the activity maintaining the aircraft log book. All discrepancies must have corrective action entered and signed off before blue and white sheets are removed. Entries stating "transferred to Deferred Discrepancy List" are considered corrective action and should be used on any item except an MEL item if the blue and white sheets must be removed before discrepancies can be cleared. Each day the blue sheet will be removed and forwarded to the <Your Agency> Supervisor of Maintenance. The white sheet will be retained by the maintenance facility. The third copy (yellow sheet) remains in the logbook.

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

**EXCEPTION**: While aircraft are on itinerary, all sheets shall remain in the aircraft flight log until the aircraft lands at or returns to the <Your Agency> home maintenance base. It is the responsibility of the person filing the blue sheets to review the sheets for accuracy of all time entries. Incorrect entries may cause inspections or replacement of flight-hours-controlled items to occur too early or too late, resulting in increased cost or unsafe conditions.

(3)Reconciliation of Aircraft Log Book Entries

Airframe and engine times, and number of landings shown in the aircraft log book will be reconciled by the <Your Agency> Maintenance Coordinator as follows:

(a)Prior to starting each scheduled inspection.

(b)When logbook is completed.

(c)When an aircraft is reassigned.

A written entry showing the date and signature of the person making the reconciliation will be made on the appropriate page of the aircraft log book.

AIRCRAFT LOG BOOK FORM

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

C.DEFERRED DISCREPANCY LIST.

The Deferred Discrepancy List shall be used to record all deferred discrepancies. This form is located on the inside of the front cover of the aircraft log book carried in the aircraft. All sheets with outstanding items must be transferred to the new aircraft log book when it is placed in use.

(1)Entries

(a)**Entry Number** - Enter the number of the discrepancy. Entries shall be entered consecutively. When using a new sheet, use the next consecutive number.

(b)**Date** - Enter date discrepancy is entered.

(c)**Discrepancy** - Self explanatory.

(d)**Not-to-Exceed Time (NTE)** - Enter the not-to-exceed time for correcting the discrepancy.

(e)**Location** - Enter the location of the maintenance facility where work was completed.

(f)**Signature** - Signature of person making the entry.

(g)**Corrective Action** - Self explanatory.

(h)**Date Parts Order** - Self explanatory.

(i)**Work Performed By** - Self explanatory.

(j)**Sheet Number** - Deferred discrepancy list sheet numbers shall be consecutive.

(2)Disposition of Forms

When all entries on the deferred discrepancy sheet are completed, the sheet will be filed as part of the aircraft records.

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

(3)Instructions for Use

Place this sheet on the inside cover of the aircraft log book. Enter the entry number, date, discrepancy item, not to exceed time, location and signature. Signature for the deferred discrepancy item means that the discrepancy is safe for further flight. All deferred discrepancies will be processed in accordance with Chapter/Section III.9.

Example:

DEFERRED DISCREPANCY LIST FORM

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

D.MAINTENANCE RELEASE AND FLIGHT REQUEST.

This form is used to request a flight test and/or evaluation. It provides spaces for sign off by maintenance personnel showing the aircraft has been properly prepared for the flight.

(1)Entries

(a)**Registration Number** - Enter the "N" number of the aircraft being tested.

(b)**Time** - Enter the time the aircraft is ready for flight test/evaluation.

(c)**Date** - Enter the date of the flight test/evaluation.

(c)**BLOCK 1** - Flight crew will enter the reason for the flight test/evaluation.

(d)**BLOCK 2** - Enter appropriate maintenance sign offs.

(e)**BLOCK 3** - Enter the signature of the person approving the release of the aircraft for the flight test/evaluation.

(g)**BLOCK 4** - Flight crew will enter the reason for the re-flight(s).

(h)**BLOCK 5** - Flight crew will sign to show the flight was completed satisfactorily.

(i)**BLOCK 6** - Maintenance will sign to show the aircraft is released for routine service.

(2)Disposition of Form

Completed forms will be forwarded to the <Your Agency> Maintenance Coordinator for filing in the aircraft records.

Example:

MAINTENANCE RELEASE AND FLIGHT REQUEST FORM

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

E.MALFUNCTION AND DEFECT REPORT.

Reports of defects and/or un-airworthy conditions shall be reported to the <Your Agency> Maintenance Coordinator in letter format or using FAA Malfunction and Defect Report, FAA form 8010-4.

(1)Entries

(a)**BLOCK 1** - Aircraft registration number of the aircraft

(b)**BLOCK 2** - Aircraft manufacturer, model/series, and serial number

(c)**BLOCK 3** - Powerplant manufacturer, model/series, and serial number

(d)**BLOCK 4** - Propeller manufacturer, model/series, and serial number

(e)**BLOCK 5** - Specific part of component causing trouble

(1)Part Name

(2)Manufacturer's model or part number

(3)Serial number

(4)Part/Defect location

(f)**BLOCK 6** - Appliance/component assembly that includes part

(1)Appliance/component name

(2)Manufacturer

(3)Model or part number

(4)Serial number

(5) Part total time

(6)Part time since overhaul and last overhaul facility

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

(7)Part condition

(g)**BLOCK 7** - Date the report is submitted

(h)**BLOCK 8** - Comments describing the malfunction or defect and the circumstances under which it occurred. State the probable cause and the recommendations to prevent recurrence. Include whether an accident or incident was involved, disposition of the component/part, and any other information that would assist in the investigation of the malfunction or defect. Indicate date and conditions under which it was discovered (i.e., 10/23/92 during C-1 check.)

(i)The report shall be identified with the following information:

(1)Name of the submitter (i.e., AXZ Repair Station, BCA Aviation, etc.)

(2)<Your Agency> as the operator

(3)Date submitted

(4)Telephone number (405) 231-5805 for further details.

The report shall be filed even though all information required above is not available. When additional information, including information from the manufacturer or other agency, concerning a report required by this section, the imformation will expeditiously be submitted as a supplemental to the first report and reference the date and place of submission of the first report.

Example: (contd.)

MALFUNCTION AND DEFECT REPORT FORM

FAA Form 8010-4

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

F.MINIMUM EQUIPMENT LIST EXTENSION AUTHORIZATION REQUEST.

This form is to grant an extension when the repair can not be accomplished within the specified time interval granted in the Minimum Equipment List.

(1)Entries

(a)MEL Control Number. To be obtained from the <Your Agency> Maintenance Coordinator

(b)Aircraft and ATA Code and MEL Item No. Self explanatory.

(c)MEL Nomenclature and Category. In accordance with the MEL

(d)Time Recorded in Aircraft Log Book and Date. Self explanatory.

(e)Expiration Time. In accordance with MEL (hours, days, and/or landings).

(f)Supply Document Number and Estimated Delivery Date. Information concerning parts on order.

(g)Justification for Extension. Parts availability, etc.

(h)Maintenance Person Requesting Extension. Signature and title of person requesting extension.

(i)Amount of Extension Authorized. To be determined by the <Your Agency> Supervisor of Maintenance.

(j)Expiration Time and Date. To be determined by the <Your Agency> Supervisor of Maintenance.

(k)Extension Authorized By. Signature of <Your Agency> Supervisor of Maintenance or Designee.

(2)Disposition of Form

Copies of the form will be distributed as per Chapter/Section III.6.

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

MINIMUM EQUIPMENT LIST EXTENSION AUTHORIZATION REQUEST FORM

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

G.SPECIAL FLIGHT PERMIT.

This form is provided for maintenance activities to document requests for ferry flights and special flight permits.

(1)Entries

The items on this form are self explanatory.

(2)Disposition

Per Chapter/Section III. of this manual.

IV.TECHNICAL DATA, FORMS, AND REPORTS

Example: (contd.)

SPECIAL FLIGHT PERMIT FORM

IV.TECHNICAL DATA, FORMS, AND REPORTS

H.INCOMPLETE MAINTENANCE WORK TURNOVER, <Your Agency> FORM #

1.General

This form is provided to document incomplete work so that the following shift can resume the task without overlooking any step. It is not necessary to use this form for incomplete work on inspection forms as the sign-off columns depict where the work terminated. It is intended that the crew leaving an unfinished task shall initiate this form whenever it is needed. This form is not intended to replace AC Form 4100-155 or AC Form 4100-155-1 for hand-off of normal partially completed discrepancies.

(2)Instructions for Use

(a)Description of Job

Enters complete description of job being performed. Example: Replace left engine fuel pump.

(b)Work Done

Enters steps completed, lines or connections not tightened, parts replaced, etc. Example: (1) Lines loosened at carburetor: (2) fuel pump replaced and mounting bolts tightened.

(c)Work Remaining

Enters steps which must be done to complete the job. Example: (1) Hook up inlet and outlet fuel lines to pump; (2) tighten fuel line at carburetor; (3) perform leak check and adjust pressure.

(3)Disposition

Crews leaving incomplete work for which this form has been prepared, shall leave form at work station. Crew completing remaining work on form shall submit completed form to work station. Completed forms shall be filed with the main base aircraft records.

IV.TECHNICAL DATA, FORMS, AND REPORTS

INCOMPLETE MAINTENANCE WORK TURNOVER

<Your Agency> FORM #

IV.TECHNICAL DATA, FORMS, AND REPORTS

3.REPORTS.

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V. AIRCRAFT MAINTENANCE TIME LIMITS

1.GENERAL.

A.GENERAL.

This section establishes control of inspection and overhaul frequencies and prescribes the procedures to be used in establishing basic intervals of maintenance operations, functional checks, inspection, overhaul, etc., of <Your Agency> aircraft, engines, and associated equipment.

B.ESTABLISHING INSPECTION, OVERHAUL TIMES, ETC., FOR NEW AIRCRAFT OR EQUIPMENT.

When aircraft or equipment new to the system is introduced into the <Your Agency>, the following shall apply:

(1)Establishment of inspection frequencies, overhaul intervals, etc., will be based on a review of applicable maintenance information and the manufacturer's maintenance requirements. Consideration will be given to the intended mode of aircraft operation.

(2)Where only the manufacturer's recommendation exists, it will be accepted and adjusted to compensate for the intended aircraft flight profile.

(3)When no recommendations exist, and equipment is not listed in operations specifications, the following will apply:

(a)Military technical orders will be reviewed to determine time intervals when the item is of military origin.

(b)Time intervals of <Your Agency> aircraft/equipment having similar characteristics or use will be reviewed.

(c)The intended operation and environmental conditions to which the aircraft/ equipment will be subjected shall be evaluated against (a) and (b) above.

(d)If time intervals are required for one-of-a-kind or unique equipment and there is no reference to use as a guide, intervals will be established on the basis of equating (b) to the applicable portion of (c).

V. AIRCRAFT MAINTENANCE TIME LIMITS

C.INSPECTION/OVERHAUL ADJUSTMENTS.

Adjustments in time will be based on an analytical review of the maintenance program inspection findings and component removal data. Due to the small fleet size, the element of judgement and experience may, in some cases, be required to determine if an inspection/overhaul frequency should be increased or decreased.

(1)Airframe

Maintenance inspection data pertaining to the aircraft/equipment under consideration will be under continual observation to determine the significance, frequency, and quantity of component removals and discrepancies.

(2)Engines/Propellers/Associated Components/Accessories/Appliances

(a)Data accumulated through the maintenance inspection program and removal data will be evaluated, taking into consideration the frequency of malfunctions or failures as related to the quantity of component removals, component operating time, and the total number of significant discrepancies. Opinions obtained from all maintenance activities will be considered prior to making a final determination but will not be justification for change(s) without substantiating documentation.

(3)Documentation

All adjustments to routine inspections, major aircraft inspections, aircraft components, engine overhaul times, hot section inspections, and propeller overhaul times will be documented and issued as revisions or supplements to appropriate maintenance program documents.

(4)Increments

Manufacturer's recommended inspections and overhaul time intervals may be utilized in lieu of the sampling provided safe operation(s) can be expected.

V. AIRCRAFT MAINTENANCE TIME LIMITS

(5)Program Measurements - In general, reliability is measured by:

(a)Pilot reports and unscheduled removals per 1,000 aircraft hours;

(b)Shutdowns per 1,000 engine hours;

(c)Serious hazard reports.

(d)Malfunction or Defect Reports

(6)Systems are reviewed and measured against established values. Initial values are established based on the manufacturer's historical experience.

(7)As problem areas are identified, detailed investigations are initiated and appropriate corrective measures implemented.

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V. AIRCRAFT MAINTENANCE TIME LIMITS

2.AGE CONTROL OF AIRCRAFT PARTS, SUPPLIES, AND EQUIPMENT.

A.GENERAL.

This chapter prescribes time limits for storage, issue, and shipment of specific items and categories of aircraft parts, supplies, and equipment owned and managed by the <Your Agency> and prescribes the action to be taken at the end of such time limits.

B.RESPONSIBILITIES.

The <Your Agency> Supervisor of Maintenance is responsible to ensure that qualified personnel (equal to those for the Aviation Supply Clerk) are assigned to:

(1)Establish and maintain identification, condition, and status of aircraft parts, supplies, and equipment;

(2)Make systematic inspection of aircraft parts, supplies, and equipment being received, shipped, and in storage to determine if the age control period has expired or if obvious or suspected damage or deterioration has occurred which may render parts and equipment unfit for use;

(3)Establish age control time limits for other than <Your Agency> owned and managed aircraft parts and equipment that meet the age control criteria set forth by the original manufacturer.

(4)Ensure that appropriate inspection, maintenance, or disposal action is accomplished on parts and equipment requiring such action.

C.DEFINITIONS.

(1)"Age Control" is the designation of a specific maximum period of age after cure date or assembly date, based on proper preservation and method of packaging, that will assure parts or equipment will not become unserviceable due to deterioration prior to issue for use.

(2)"Cure Date" is the date that an uncured compound is cross linked to change the physical properties and produce an elastomeric or rubber like material.

V. AIRCRAFT MAINTENANCE TIME LIMITS

(3)"Assembly Date" is the date applicable parts are installed in an appliance, accessory, or higher assembly.

(4)"Functional Test" is a test using equipment and procedures specified in the appropriate overhaul, repair, or inspection manuals to determine serviceability.

D.CRITERIA.

(1)Experience shows that certain items deteriorate while in storage. Such items require inspection, functional test, or other maintenance action prior to issue or shipment if the specified age control period has elapsed since manufacture, last inspection, or overhaul. Age control periods are considered maximum safe time limits. Where assemblies contain items subject to age control, the age control period of such separate items will normally apply to the complete assembly. When an assembly is subject to age control, subassemblies will be subject to the same control.

(2)Criteria for applying age control to aircraft parts and equipment.

(a)Assemblies or components which have a direct affect on safety of flight and/or life sustaining equipment will be subject to age controls if factual data indicates that premature failure may occur as a result of deterioration while in storage.

(b)For new parts or equipment entering the inventory, experience gained on like parts or equipment will be used to establish age control limits. If no factual shelf life deterioration date is available, such items shall not be subjected to age control until experience dictates. Other items, which factual data indicates serviceability has deteriorated due to shelf life, will be considered for age control.

(c)Age controls will not be applied to items containing silicone, neoprene, or teflon merely because of the presence of these materials in the part or assembly.

(d)Supplements to this manual will be issued as necessary to provide current age control instructions.

V. AIRCRAFT MAINTENANCE TIME LIMITS

E.PERIOD INSPECTION AND FUNCTIONAL TEST.

(1)Certain parts or equipment require specific action be taken while materials are in storage or prior to issue to ensure that the designated age limit has not elapsed and the item is serviceable. If an item is not specifically identified it is "on condition" and must be visually inspected prior to installation and a complete functional and operational test performed after installation to determine serviceability. The part, supplies, or equipment manufacturer's age limits will be followed when available. As an alternate, the original equipment manufacturer's (Boeing, Cessna, etc.) recommendations may be used.

(2)Manufacturer's often permit extensions of age limits if specific tests or other conditions are met. The following procedures may be used to return items to stock when age limits have been reached:

(a)If the age limit of an item indicates that the item requires a functional test and the required maintenance action be performed prior to use

those items determined to be serviceable as a result of functional test (and maintenance action as necessary) shall have the shelf life expiration date extended for 1 year from the date of such test. Re-test and further extension of shelf life limits, if justified, shall be accomplished each succeeding year. The functional test shall consist of appropriate procedures necessary to determine operational serviceability of the part or equipment. This test may be performed at any maintenance base where adequate facilities are available or by local certificated contractor if more expedient or economical than returning the item to the <Your Agency> Home Base. When such facilities are not available, E&R items shall be processed locally. All such items returned to the <Your Agency> Home Base shall have the original serviceable parts tag and/or certification attached and appropriate repairable part tag bearing the note: "Functional Test Due."

V. AIRCRAFT MAINTENANCE TIME LIMITS

(b)If the age limit of an item indicates that the item requires maintenance action prior to issue if the designated limit has elapsed the maintenance action will include replacement of all gaskets, diaphragms, seals, and other components containing natural or synthetic rubber and, when necessary, bearings, lubricants, and any other components and/or reconditioning required to place the item in a serviceable condition. After such reconditioning, the item is eligible for issuance and use for the full term of the designated age limit.

**NOTE**: Where facilities are not equipped to provide this maintenance, E&R items shall be returned to the <Your Agency> Home Base; non-E&R items shall be processed locally. All such items shall have the original serviceable parts tag and/or certification attached and appropriate repairable part tag bearing the note: "Has exceeded storage time; maintenance action required."

(c)If the age limit of an item indicates that the item is considered unsuitable for its intended use at the expiration of the designated period, it shall be removed from stock for processing as administratively condemned parts and/or equipment.

F.INSPECTION AND DISPOSITION OF SYNTHETIC RUBBER.

(1)Personnel assigned responsibility for surveillance of parts and equipment in storage will screen stocks of age-controlled synthetic rubber parts once annually or more frequently if necessary to disclose parts suspected to be deteriorated or which will be over-age prior to next inspection.

(2)Expendable items determined to be unserviceable by designated quality control personnel shall not be issued for use on aircraft or aircraft accessories. Fuel cells (E&R items) determined to be unserviceable but reparable in accordance with applicable maintenance or repair instructions may be repaired by any facility having such capability. Whenever inspection of any expired-age fuel cell reveals no evidence of un-serviceability, the re-inspection date may be extended for 1 year, after which the fuel cell may be re-inspected and time extended for 1 more year, if still serviceable. Total allowable extension is 2 years. The age limit for bulk and precut hose and hose assemblies may be extended by being visually inspected. Total allowable extension is 1 year.

V. AIRCRAFT MAINTENANCE TIME LIMITS

(3)An accessory shall not be accepted into the <Your Agency> supply system without evidence of cure date; date of manufacture, overhaul, or test; the item shall have at least 50% of its age control limit remaining when accepted.

G.AGE CONTROL OF AVIONIC PARTS AND EQUIPMENT.

(1)Shelf time limits for avionic equipment while in storage, are based on the method of preservation which defines the maintenance action necessary when storage time limits have expired. Equipment accepted by the <Your Agency> shall have a shelf life indicated on the part serviceable tag and be based on the equipment and preservation methods used by the repair/shipping facility.

(2)Preservation methods and maintenance action prescribed herein are established to prevent deterioration of avionic equipment while in storage and are considered to be safe maximum limits for all geographic areas and storage conditions.

(3)All avionic items listed shall receive maintenance action as prescribed upon expiration of the applicable storage time limit.

H.PREFERRED PACKAGING AND/OR PRESERVATIONS.

The method of packaging and/or preservation for each item, along with the shelf life expiration date, must be identified on the serviceable part tag. A brief description of preferred methods of preservation and identification is given below. Military specification MIL-P-116 fully describes the methods and will be used as reference.

(1)Method I - Preservative coating (with grease-proof wrap as required).

(2)Method IA - Water/vapor proof enclosure (with preservative as required).

(3)Method IB - Strippable compound coating (hot dip).

(4)Method IC - Waterproof barrier (with preservative as required).

(5)Method II - Water/vapor proof barrier with desiccant (with contact preservative when required).

(6)Method III - Packaged for mechanical and physical protection only.

V. AIRCRAFT MAINTENANCE TIME LIMITS

I.MAINTENANCE ACTION AND INSPECTIONS.

(1)Avionic equipment requires a specific maintenance action to be taken upon expiration of the storage time limit. (Refer to the manufacturer's manuals for these limits and appropriate action for the item involved) Some of the actions to be taken are:

(a)A visual inspection to determine condition. Whenever there is evidence that the item is unserviceable, appropriate maintenance action shall be taken to restore its serviceability.

(b)An operational check which shall consist of performing all necessary test procedures, utilizing a suitable test stand or mockup, to determine that the item is operating properly. Items found to not be operating properly shall receive additional maintenance action as necessary to restore their serviceability.

(c)An inspection, including any necessary disassembly, to determine the operational reliability of the item. Maintenance performed during this inspection shall include removal of any rust or corrosion detected; relubrication of gear trains; replacement or repacking of bearings; reforming or replacement of electrolytic capacitors; replacement of deteriorated seals, gaskets, or rubber goods; and the replenishment of liquid levels as necessary to assure the item's reliability. The item shall be given a complete operational check utilizing a suitable test stand or mockup upon completion of any required maintenance and prior to returning to storage.

(2)New re-inspection dates will be entered on the part serviceable tag upon completion of the maintenance action. Such dates will be computed by adding the appropriate storage period time interval to the date upon which the prescribed action was accomplished.

(3)All maintenance actions and inspections shown may be performed at any maintenance activity when adequate facilities are available. Items which, because of expired storage item, require maintenance action which exceeds the capability of a maintenance facility will be appropriately identified and returned to the <Your Agency> Home Base for further action.

V. AIRCRAFT MAINTENANCE TIME LIMITS

J.ISSUING LIMITATIONS.

The personnel assigned responsibility for surveillance of avionic parts and equipment in storage will ensure that all serviceable property is stored and issued in a manner which will provide for the issuance of oldest items first.

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VI. AIRCRAFT MAINTENANCE AND INSPECTION TRAINING PROGRAM

1.PERSONNEL PERFORMING MAINTENANCE ON AIRBORNE EQUIPMENT.

A.GENERAL.

All personnel, temporary or permanent, performing maintenance or servicing of <Your Agency> aircraft or ground support equipment, may, at the discretion of the <Your Agency>, be required to undergo a criminal background check. This check may also include a history of violations and other actions contained in the individual's FAA certificate record maintained by the FAA.

Ten (10) working days prior to hiring any new employees or assigning different employees to perform maintenance or servicing of <Your Agency> aircraft or GSE, Contractors providing support to the <Your Agency> shall provide the following information on prospective employees to the <Your Agency> COTR:

(1)Full name of employee

(2)Date of birth

(3)Social security number

(4)Driver license number

(5)Place(s) of residence for the past ten (10) years

(6)FAA Certificate number, if applicable

If the <Your Agency> determines that an employee is unsuitable, the <Your Agency> shall have the right to require the replacement of said employee within five (5) working days.

VI. AIRCRAFT MAINTENANCE AND INSPECTION TRAINING PROGRAM

B.PERSONNEL QUALIFICATION.

Qualifications for each position supported by a contractor are as follows:

(1)Shift Supervisor This person shall hold a valid mechanic certificate issued by the FAA with both airframe and powerplant ratings; and have a minimum of ten (10) years of experience in aircraft and powerplant maintenance; and have a minimum of five (5) years experience with the Federal Aviation Regulations, Part 121, 125, 135, or 145 operations at the level of responsibility for making airworthiness determinations. Must possess a working knowledge of all applicable regulations and the <Your Agency> GMM.

(2)Lead Mechanic This position shall hold a valid mechanic certificate issued by the FAA with both airframe and powerplant ratings; and have held the certificate and exercised the privileges for a minimum of seven (7) years with two (2) of those years working with the type aircraft identified herein at the level of responsibility for making airworthiness decisions.

(3)Aircraft Mechanic This position shall hold a valid mechanic certificate issued by the FAA with both airframe and powerplant ratings; and have five (5) years experience with one (1) year at the level of responsibility for making airworthiness decisions.

(4)Radio and Electrical TechnicianRadio and Electrical Technician(4)Radio and Electrical Technician This position shall have a valid mechanic certificate issued by the FAA with both airframe and powerplant ratings; or a General FCC License; and have five (5) years radio, avionics, and electrical experience.

(5)Aircraft Mechanic Helper This position shall hold a valid mechanic certificate issued by the FAA with either an airframe or powerplant or both rating; and have a minimum of one (1) year training or equivalent experience.

VI. AIRCRAFT MAINTENANCE AND INSPECTION TRAINING PROGRAM

2.PERSONNEL PERFORMING MAINTENANCE ON GROUND SUPPORT EQUIPMENT.

A.GENERAL

Personnel performing maintenance on <Your Agency> owned ground support equipment must be cleared as per Chapter/Section/Paragraph VI.1.A if the equipment is located the confines of the <Your Agency> Hangar and/or ramp.

B.PERSONNEL QUALIFICATIONS.

(1)GSE Mechanic. This person shall have a minimum of five (5) years experience in aviation ground support equipment maintenance. The experience must cover those general types of GSE used by the <Your Agency>.

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3.ALL OTHER PERSONNEL (STORES, ETC.).

A.GENERAL

Personnel performing stores or aircraft cleaning duties under contract must be cleared as per Chapter/Section/Paragraph VI.1.A if their duties require them to be within the confines of the <Your Agency> Hangar and/or ramp.

B.PERSONNEL QUALIFICATIONS

(1)Aviation Supply Clerk This person shall have one (1) year experience working with aircraft tools and parts and possess a knowledge and understanding of the hazards associated with them. This person shall also have at least one (1) year experience working with the age control of aviation parts, supplies, and components.

(2)Cleaner This person shall have six (6) months experience working around aircraft or similar equipment and possess a knowledge and understanding of the hazards associated with them.

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4.MAINTENANCE AND INSPECTION TRAINING PROGRAM

A.GENERAL

(1)An effective continuous maintenance and inspection program requires formal aircraft and avionics maintenance training programs for <your agency or contractor> personnel. The training must enable the employees to perform their duties at a competent level and comply with the provisions of FAR Part 135, Section 433. The most effective training organization is an entity separate from the maintenance organization.

B.<Your Agency or Contractor> TRAINING OFFICER

(1)The duties and responsibilities of <your agency or contractor> Training Officer are listed below and may be delegated to the extent necessary, except for item (a).

(a)Responsible for the overall training of aircraft maintenance personnel except the RII training.

(b)Ensure that all maintenance personnel are current and properly trained in accordance with this GMM.

(c)<Your agency or contractor> Training Officer will arrange and schedule all needed training. This may require checking and coordinating with various universities, industry, and the FAA Academy, etc., to determine availability of training.

(d)Courses obtained or developed will be evaluated by <your agency or contractor>Training Officer

(e)Ensure that all required training records for maintenance and inspection personnel are current and in proper files. The files will be maintained in the office of the <your agency or contractor> Training Officer.

**Note**:Required Inspection Item (RII) authorization records will be the responsibility of and located in the office of the <Quality Control Section Supervisor or other approved title>

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(f)Ensure the individuals training records reflect the number of hours of training, course completion date, and includes signed documents signifying satisfactory course completion.

(g)Ensure that all required training is conducted in a timely manner.

(h)Maintain a file listing OJT Instructors, and their qualifications.

C.EQUIVALENT TRAINING EXPERIENCE

(1)The Supervisor of Maintenance may accept in lieu of training, documents, certificates, and authorizations which reflect training associated with the job function an employee received during previous employment. This experience must have been exercised within the previous three years.

(2)The <your agency or contractor:> Training Officer will be presented with a copy of all training documents and will update the employee training records.

D.TYPES OF TRAINING

(1)<Your Agency or Contractor, as appropriate> training courses.

(a)Indoctrination Training

1 Each <your agency or contractor:> employee will receive familiarization training as soon as possible, but not to exceed 120 days after entering on duty. This training will include:

aFAA rules and regulations;

bSafety and fire control;

c<Your Agency> General Maintenance Manual;

d Technical Manuals;

e<Your Agency> policies and organization;

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(b)Directed Study Courses

1This type of training is not required but is recognized as being an integral part of an employee's career progression.

(c)Out of Agency Training

1This is classroom type training which is performed under the supervision of an out-of-agency training facility.

2Documents and Certificates presented to the employee upon satisfactory completion of a course will be entered in the employee's permanent training record file.

(d)Informal On-the-Job Training

1Informal on-the-job training is conducted at the work site by a supervisor, designated instructor, or manufacturer's representative. This type instruction is limited to the demonstration of a maintenance operation or the direct supervision of an employee performing maintenance. Course material is not required.

(e) Formal On-the-Job Training

1Formal on-the-job training may be conducted by the supervisor, designated instructor, or manufacturer representative as an integral part of an employee's normal work assignment.

2Maintenance OJT Instructors will be qualified by experience, job knowledge, schooling.

(f)Ground Operations of <Your Agency> Aircraft Training

1<Your agency or contractor> will establish and continue an on-the-job proficiency program to qualify and maintain currency of mechanics who require aircraft engine run-up and taxi authorization.

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2No person shall perform engine run-up or taxi of <your agency> aircraft until checked by a designated proficiency check examiner.

3Each person recommended for run-up authorization must hold a valid airframe and powerplant rating and be recommended by the Aircraft Maintenance Foreman.

4Tests will be revised and maintained in the Aircraft Maintenance Foreman's office.

5After meeting the requirements, a Taxi and Runup Authorization will be issued and placed in the persons training file.

6Designee Examiners for each make and model of aircraft, will be an aircraft mechanic leader or foreman and will be certified by a qualified flight engineer or a pilot.

7A written request to the Training Officer from the manager of the maintenance activity will be required when designated examiners are needed.

(g)Special Situation Training

Special training courses or instruction by Classroom Projection Systems may be developed, whenever the need arises, to improve the reliability or maintenance effectiveness of a system or item of equipment or when new products and equipment are initiated into the maintenance system.

(h)Management Training

Management training furnishes a systematic approach to the development of employees having the potential ability to manage. It provides a progressive departure from maintenance skills to the management skills.

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(i)Return to Service Training

Persons authorized to approve aircraft, airframes, aircraft engines, propellers, appliances, or component parts for return to service after maintenance, preventive maintenance, rebuilding, or alteration must have:

1Received training on the system(s) to be maintained by specific make and model airframe, powerplant, accessories, or avionics equipment; OR

2Previously performed satisfactorily under the direct supervision (OJT) of a mechanic, technician or supervisor.

3Received a thorough indoctrination in the use of current technical data reflecting the configuration of the aircraft, equipment, and associated hangar, line and test equipment.

4Have a working knowledge of the forms and procedures as outlined in Chapter III.25 of the General Maintenance Manual. Documentation of authorization will be in accordance with Chapter III.25.

(j)Required Inspection Item (RII) Training

1The <Quality Control Section Supervisor or other approved title> is responsible for administering the RII training program.

2Quality Control Contracting Officer Representatives (COR), have a wide range of experience and may be designated as RII Instructors.

3Personnel being considered as RII Inspectors must have the following qualifications acceptable to the <Quality Control Section Supervisor or other approved title>:

aA valid FAA Airframe and Powerplant (A&P) Mechanic certificate.

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bMust have completed the training requirements as shown in D.(1)(a).

cDemonstrate a thorough knowledge of the <Your Agency> General Maintenance Manual, aircraft maintenance manual system, aircraft logbook, and the completion of maintenance forms and aircraft work cards.

dA good working knowledge of FAA regulations, Airworthiness Directives, and Required Inspection Items.

(k)RII Designee Training Requirements

1A review of the General Maintenance Manual required Inspection Item list contained in Section III.21.1 and a description of the inspection procedures for each item.

2A full description of the duties and responsibilities of an RII designee and the accountability to the Quality Control Section.

3The procedures for re-inspection of work ("Buy back procedures").(See III.21.3)

4Procedures for inspection and calibration of precision tools, test equipment, and the proper use of this equipment. (See III.23.1)

5Procedures to ensure that required inspection at shift change or other work interruption are properly completed before the aircraft is released to service.

6Recurrent training of RII designees is required annually and will consist of reading General Maintenance Manual Section III.21. This review must be documented in the employee's training record.

7After satisfactory completion of the RII Training, a qualification test will be administered prior to certification.

8All training will be documented.

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(l)Nondestructive Test (NDT) Training

NDT training will be completed in accordance with NDT Test Standards, TI 4151.1 prior to certification.

(m)Recurrent Training

Additional training will be scheduled when a supervisor or manager determines the need, a deficiency is discovered through surveillance, and/or analysis of data from the reliability program reflects that such training would be beneficial to the aircraft maintenance program. Recurrent training will include at least the following:

1Review and upgrade of training given during both indoctrination and technical training.

2Input from maintenance bulletins and newsletters.

3Employees qualified for run-up and taxi, Required Inspection Items, and Non-destructive Testing will receive recurrent training annually through OJT, with documentation made to the training records.

E.TRAINING RECORDS

(1)The official records for formal training are maintained in the <Your Agency or Contractor> records.

(2)It is the responsibility of the <your agency or contractor>Training Officer to maintain the Individual Training Records in the proper files.

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5.ON-THE-JOB TRAINING OUTLINE

A.GENERAL

The following course outline has been developed as a guide for the maintenance instructor. A memorandum to the mechanic or technician's training file will be prepared by the instructor, certifying that the mechanic or technician has been trained on a particular system. The mechanic or technician will sign the memorandum to certify (s)he has received the training.

B.AIRCRAFT MECHANIC COURSE

(1)Objective - to provide the mechanic with a thorough understanding of the aircraft in the <your agency> fleet, the aircraft systems, and the maintenance thereof.

(2)Course Outline

(a)Ground Handling

(b)Engine Start and APU

(c)Taxiing

(d)Engine Run-up

(e)Electrical

(f)Flight Controls

(g)Fuel

(h)Power plants and Propellers

(i)Hydraulic system, landing gear, brakes, wheels and struts

(j)Environmental

(k)Anti-ice and de-ice

(l)Fire protection

(m)Oxygen

(n)Nickel Cadmium Battery

(o)Security

(p)Hazardous Materials

(3)Reference

Applicable aircraft maintenance, parts, and wiring diagram manuals as contained in the Technical Library.

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(4)OJT Course Detail Outline

(a) Ground Handling

1Basic procedures for working around aircraft

aProper procedures for pushing, pulling, towing and parking aircraft

bAircraft tie downs

cProper procedures for shutting and locking doors

dCleaning aircraft

eSafety – work stands, ladders, oil spills

2Cowling

aRemoval

bInspection

cRepairs

dCleaning

eInstallation

3Jacking

aProper selection of jacks

bUse of ballast

cSafety pins

dRemoving aircraft from jacks

eStrut deflation and inflation

4Lubrication

aTypes of lubricants to use

bHow often to lubricate

cLocation of lubrication points

(b)Engine Start and APU

1Pre-flight inspection (oil, tires, shocks, obstructions)

2Use of checklist

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3Cockpit familiarity with controls, and switches

4Use of starters

5Instrument readings

6Engine monitoring

(c)Taxiing

1Engine monitoring before taxiing

2Lights, use of radio

3Brakes

4Use of power to aid turning

5Judgement of speed

6Stopping - nose gear steering, use of brakes

(d)Engine Run-up

1Normal

aUse of checklist

bWhat to look for

cMonitoring engines

dEmergency shut-down

eProper cool down

2Max Power

aClearance from other aircraft or obstructions

bNose gear

cUse of brakes

dMaximum time period of run-up

eSteady reduction of power

fProper Shut-down

(e)Electrical Systems

1Battery - location, removal, inspection, servicing, installation battery box, use of auxiliary power

2Primary Buss System - solenoids, lights, starter system, cables

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3Electrical motors - flaps, heaters, fuel pumps, boost pumps, landing gear

4Starter-Generators

5Lights and auxiliary system

6Switches and circuit breakers

7Indicating and monitoring systems

8Troubleshooting and repair

(f)Flight Controls and Steering

1Principals of operation

2Removal and installation

3Inspection

4Repairs

5Rigging

(g)Fuel Systems

1Fuel tanks - type, inspection, servicing, installation

2Valves, Pumps, Controls - inspection servicing, removal, installation, rigging, trouble-shooting, repairs

3Plumbing - inspection and repair, manufacturing, assembling and installation of lines

4Fuel gauges - inspection, removal, installation, troubleshooting, calibration

(h)Power Plants and Propellers

1General inspection and servicing

aEngine

bPropeller and governor

cIgnition system

dFuel system

eLubrication system

fAir induction

gAccessories

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2Removal, installation, rigging, adjustment

aEngines

bPropellers and governors

cFuel system

dIgnition

eEngine oil

fInduction

(i)Hydraulic System, landing gear, brakes, wheels, and struts

1Description and principals of operation

2Inspection

3Servicing

4Rigging

5Troubleshooting

6Removal, repair, and installation of components

(j)Environmental System

1Heating

aPrincipals of operation

bInspection

cServicing

dRigging

eTroubleshooting

fRemoval, repair, and installation of components

2Air Conditioning

aPrincipals of operation

bInspection

cServicing

dRigging

eTroubleshooting

fRemoval, repair, and installation of components

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(k)Anti-Ice and Deice System

1Propellers

aPrincipals of operation

bInspection

cServicing

dRigging

eTroubleshooting

fRemoval, repair,and replacement of components

2Windshields, Pitot, and stall warning detectors

aPrincipals of operation

bInspection

cServicing

dRigging

eTroubleshooting

fRemoval, repair,and replacement of components

3Pneumatic Systems

aPrincipals of operation

bInspection

cServicing

dRigging

eTroubleshooting

fRemoval, repair, and replacement of components

(l)Fire Protection

1Fire Detection

aPrincipals of operation

bInspection

cTesting

eTroubleshooting

fServicing

gRemoval, repair and replacement of components

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2Fire Extinguisher (engine)

aPrincipals of operation

bInspection

cTesting

eTroubleshooting

fRemoval, repair, and replacement of components

(m)Oxygen

1Principals of operation

2Inspection

3Testing

4Troubleshooting

5Removal, repair, and replacement of components

(n)Nickel Cadmium Batteries

1Theory of operation

2Installation and removal

3Preventive maintenance

4Battery repair

5Charging

6Troubleshooting

(o)Security

1See Chapter IX, page 1.1

(p)Hazardous Materials

1OSHA-Material Safety Data Sheets

2HMR 175-Transportation of Hazardous Materials aboard aircraft

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C.AVIONICS MAINTENANCE COURSE

(1)Objective: To provide the Avionics Technician with a thorough understanding of the avionics systems on the aircraft in the <your agency> fleet and the maintenance thereof.

(2)Course Outline:

(a)DATA INSTRUMENTS

Description and Operation

1 Air Data Computer

2Airspeed Indication

3Altimeter

4Mach/Airspeed

5True Airspeed

6Vertical Speed

(b)TEMPERATURE INDICATION

Description and Operation

1Total Air Temperature

2Total Air Temperature Probe

(c)AIRSPEED WARNING

Description and Operation

1Warning Horns

2Warning Switches

(c)ATTITUDE REFERENCE

Description and Operation

1Flight Director Indicator

2Horizontal Situation Indicator

3Roll and Pitch Servos and Amplifiers

4Vertical Gyro

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(d)AUTOMATIC DIRECTION FINDER

Description and Operation

1ADF Controls

2ADF Antennas

3ADF Receivers and Coupler

(e)LORAN SYSTEM

Description and Operation

1Control Panel

2Antenna and Coupler

3Indicator

4Receiver

(f)RADAR NAVIGATION AND WEATHER RADAR

Description and Operation

1Indicator

2Transmitter-Receiver

3Antenna and Wave Guide

4Accessory Unit

5Controls

(g)DME

Description and Operation

1Indicators

2Control Panel

3Antenna

4Interrogators

(h)RADIO NAVIGATION AND VOR/NAVIGATION

Description and Operation

1Attitude Director Indicator

2Control Panel

3Glide Slope

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4Horizontal Situation Indicator

5Navigation Unit

(i)POSITION COMPUTING AND FLIGHT DIRECTOR

Description and Operation

1Altitude Sensor

2Course Deviation Indicator

3Flight Director Computer

4Flight Director Indicator

5Flight Director Control Panel

(j)DOPPLER NAVIGATION

Description and Operation

(k)RADAR ALTIMETER

Description and Operation

1Indicator

2Receiver-Transmitter

3Antenna

4Controls

(l)TURN AND BANK

Description and Operation

(m)FLIGHT DIRECTOR

Description and Operation

1Course Deviation Indicator(CDI, RDI, PDI)

2Flight Director Control

3Flight Director Indicator (FDI, ADI, HDI)

4Instrument Amplifiers

5Progress Display Annunciator

6Servo-Amplifier - ILS Rack

7Steering Computer

8Vertical Gyro Switching

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D.SAMPLE TEST.

1. General Information Written Test. True or False - Circle the correct answer.

**T F (1)Chocks should be utilized for all engine starts unless aircraft is to be taxied.**

**T F (2)A fireguard is mandatory prior to engine starts.**

**T F (3)All landing gear safety pins should be removed prior to starting engines.**

**T F (4)Engine run-ups may be performed in any location.**

**T F (5)The minimum crew required to tow a multi-engine aircraft in a clear area is one person**

**T F (6)A flashing green light from the tower means to hold present position.**

**T F (7)A steady red light from the control tower means to stop and then return to starting position.**

**T F (8)Ground control should be called for any aircraft movement.**

**T F (9)Aircraft should be taxied fast due to better engine cooling.**

**T F (10)It is possible to over boost an engine on the ground.**

**T F (11)The person in the pilot's seat of the aircraft is in charge during towing operations.**

**T F (12)During night taxi and run-up operations the exterior lights should not be on unless the aircraft is on a designated taxiway.**

**T F (13)The ground APU must have the brakes set when parked near an aircraft**

**T F (14)Aircraft brakes need not be set for starting engines because the aircraft is difficult to start moving.**

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1.FUELING PROCEDURES.

A.GENERAL.

The following standard practices and procedures shall be used in conjunction with the instructions contained in the aircraft maintenance manual for each specific type aircraft to be serviced.

(1)When aircraft are located and serviced at the <Your Agency> maintenance facility, an A&P certificated mechanic will be assigned to the servicing operation. For servicing away from the <Your Agency> maintenance facility and when an A&P certificated mechanic is not available, the pilot in command will have responsibility for servicing operations.

B.POSITIONING OF AIRCRAFT FUEL SERVICING VEHICLES.

(1)Position the servicing vehicle so that a path of egress from the aircraft is maintained. The fuel servicing vehicles shall not be positioned under the wing of the aircraft during over wing fueling. Fuel servicing vehicles shall not be positioned within a 10-foot radius of aircraft fuel system vent openings. Minimum distance between aircraft being serviced and other aircraft shall be as follow: For large aircraft such as Sabreliners, B727, etc., 20 feet; for small aircraft such as Cessna 310, Cessna 210, Cessna 185, Cessna Citation, etc., 10 feet.

(2)When approaching an aircraft to be fueled, the tank truck driver should approach the aircraft parallel to the wings, unless single point locations on the aircraft require a different approach.

NOTE: The servicing vehicle shall not be driven or parked under any portion of the aircraft.

(3)Position mobile fueling equipment so it can either be rapidly driven or towed away from the aircraft in the event of an emergency. Do not park ramp equipment where it will obstruct the movement of the fuel truck.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

C.BONDING.

(1)Prior to making any fueling connection to the aircraft, the fueling equipment shall be bonded to the aircraft by use of a cable, thus providing a conductive path to equalize electrical potential between the fueling equipment and aircraft. The bond shall be maintained until fueling connections have been removed.

(2)In addition to the above, when fueling over wing, the nozzle shall be bonded to a metallic component of the aircraft that is metallically connected to the tank filler port. The bond connection shall be made before the filler cap is removed. If there is no plug receptacle or means for attaching a clip, the operator shall touch the filler cap with the nozzle spout before removing the cap so as to equalize the electrical potential between the nozzle and the filler port. The spout shall be kept in contact with the filler neck until the fueling is completed.

(3)Bonding and fueling connections shall be disconnected in the reverse order of connection.

D.FIRE EXTINGUISHER.

(1)Position two dry chemical or CO2 fire extinguishes so they will be available in case of a fuel spill, or fire.

(2)Each aircraft fuel servicing vehicle shall have at least two fire extinguishes, each having a rating of 20B, one mounted on each side of the vehicle.

E.OPERATION OF APU WHILE FUELING AIRCRAFT.

(1)The APU can be operated during fueling of the B727 if the following precautions are taken.

(2)A minimum of one crewmember or properly trained maintenance personnel must be in the cockpit.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

NOTE: Except for aircraft equipped with an external APU control panel with APU shutdown controls.

(3)The APU shall be shut down immediately and fueling discontinued in the event of fuel spill, APU malfunction, and/or APU fire.

F.PREVENTION AND CONTROL OF SPILLS.

(1)Fuel servicing equipment will be maintained in safe operating condition. Leaking or malfunctioning equipment shall be removed from service.

(a)Fuel nozzles shall not be dragged along the ground.

(b)Pouring or gravity flow shall not be permitted from a container with a capacity of more than five gallons.

(c)When a spill is observed, the fuel servicing shall be stopped immediately by release of the dead man controls. In the event that a spill continues, the equipment emergency fuel shutoff shall be actuated. The supervisor shall be notified at once and the operation shall not be continued until the spill has been cleared and it is determined to be safe.

(d)The aircraft fire crew shall be notified if a spill is over 10 feet in any dimension or over 50 square feet in area, continues to flow, or is otherwise a hazard to persons or property. This spill shall be investigated to determine the cause, whether emergency procedures were properly carried out, and what corrective measures are required.

G.EMERGENCY FUEL SHUTOFF.

(1)Access to emergency fuel shutoff control shall be kept clear at all times.

(2)Emergency fuel shutoff devices shall be operationally check at least every 3 months.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

H.OPERATION OF AIRCRAFT ENGINES AND HEATERS.

(1)Fuel servicing shall not be done on an aircraft while the aircraft engines are operating.

Exception: In an emergency resulting from the failure of an onboard auxiliary power unit on a jet aircraft and in the absence of a suitable ground support equipment, a jet engine mounted at the rear of the aircraft or on the wing on the side opposite from the fueling point may be operated during fueling to provide power.

(2)Combustion heaters on aircraft (e.g., wing and tail surface heaters, integral cabin heaters) shall not be operated during fueling operations.

I.EQUIPMENT AROUND AIRCRAFT.

(1)Internal combustion engine powered equipment, other than those performing aircraft servicing functions, shall not be permitted within 50 feet of aircraft during fuel servicing operations.

(2)Equipment performing aircraft servicing functions shall not be positioned within a 10-foot radius of aircraft fuel system vent openings.

(3)During over wing aircraft fuel servicing where aircraft fuel system vents are located on the upper wing surface, equipment shall not be positioned under the trailing edge of the wing.

J.ELECTRICAL EQUIPMENT USED ON AIRCRAFT SERVICING RAMPS.

(1)Battery chargers shall not be connected, operated, or disconnected while fuel servicing is being done on the aircraft.

(2)Aircraft ground-power generators or other electrical ground-power supplies shall not be connected or disconnected while fuel servicing is being done on the aircraft.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

(3)Electric tools or similar tools likely to produce sparks or arcs shall not be used while fuel servicing is done on the aircraft.

(a)Photographic equipment shall not be used within 10 feet of fueling equipment or of the fill or vent points of aircraft fuel systems.

(b)Battery-powered vehicle equipment shall not be operated within 10 feet of fueling equipment or spills.

(c)Communication equipment used during aircraft fuel servicing operations within 10 feet of fueling equipment or of the fill or vent points of aircraft fuel systems shall be intrinsically safe (see ANSI/UL 913-1988).

K.OPEN FLAMES ON AIRCRAFT FUEL SERVICING RAMPS.

(1)Open flames on aircraft fuel servicing ramps or aprons within 50 feet of any aircraft fuel servicing operation or fueling equipment shall be prohibited.

(2)The category of open flames and lighted open-flame devices shall include, but not be limited to, the following:

(a)Lighted cigarettes, cigars, pipes.

(b)Exposed flame heaters, liquid, solid or gaseous devices, including portable and wheeled gasoline or kerosene heaters.

(c)Heat-producing, welding or cutting devices and blowtorches.

(3)Personnel shall not carry lighters or matches on their person while engaged in fuel servicing operations.

(4)Lighters or matches are prohibited on or in fueling equipment.

L.LIGHTNING PRECAUTIONS.

Fuel servicing operations shall be suspended when there are lightning flashes in the immediate vicinity of the airport.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

M.DEADMAN CONTROL MONITORING.

(1)The fueling operator shall monitor the panel of the fueling equipment and the aircraft control panel during pressure fueling or shall monitor the fill port during over wing fueling.

(2)Fuel flow shall be controlled by use of a dead man control device.

N.FUELING.

(1)Prior to starting fueling operations, a check will be made to ensure that the fuel in the tanker is the correct grade for the aircraft. Also verify that adequate procedures have been used to prevent water in the tanker from being serviced into the aircraft fuel system.

(a)Contamination Prevention

Contamination normally occurs when the aircraft is serviced with the wrong fuel. The following procedures will help eliminate this hazard. Always ascertain that the fuel delivered is the type recommended for the aircraft. If uncertain as to the type of fuel, take a sample of fuel from the refueling truck or station before refueling is started and compare with colors listed below. After refueling is complete, take another sample from the refueling source. Repeat the color check. Use a transparent plastic container that is impervious to fuel.

**CAUTION: DO NOT USE GLASS**

(b)Some aviation fuels can be identified by color. The following color list will be of value in monitoring fuel delivery.

(1)100LL-blue

(2)Jet fuels-wide range from water-white to amber.

NOTE: The color test is nullified whenever any two of the above are mixed, since the resultant mixture could be water-clear.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

(c)Reduce the rate of fuel flow as fuel nears the top of the tank to prevent fuel spill.

(2)When single point fueling, check fuel vents for obstructions, and that air is escaping when fuel is being pumped.

O.FUEL SPILLS.

The following actions are appropriate in the event of a fuel spill, although each spill will have to be treated individually because of such variables as: size of the spill, type of flammable or combustible liquid involved, wind and weather conditions, equipment arrangement, aircraft occupancy, emergency equipment, and personnel available. Refer to National Fire Protection Association (NFPA) 407 Standard for Aircraft Fuel Servicing for a thorough discussion of fuel spills.

(1)Terminate the fueling operation; stop the flow of fuel if possible.

(2)Halt any operations in progress until a determination is made they may be continued safely.

(3)Evaluate the aircraft if the spill is such as to pose a fire threat.

(4)Mobile fueling equipment and other mobile equipment should be withdrawn or left as is until the fuel spill is removed or made safe.

(5)Notify supervisory personnel and the airport fire crew if the spill presents a fire hazard.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

2.DEFUELING PROCEDURES

A.GENERAL.

The following practices and procedures shall be used in conjunction with the instructions set out in the maintenance manual for each specific type aircraft to be serviced. It will be the responsibility of the person in charge to see the following safety practices are complied with.

B.POSITIONING DEFUEL TRUCK.

(1)When positioning an aircraft to be de-fueled, due consideration should be given to the wind to prevent fuel vapor from being carried downwind toward a course of ignition. Aircraft being de-fueled shall be positioned at least 25 feet from other aircraft and buildings.

(2)The tank truck driver will approach the aircraft parallel to the wings, unless single point locations on the aircraft require a different approach.

NOTE: Unless absolutely necessary, because of the type of aircraft involved, the servicing vehicle shall not be driven or parked under any portion of the aircraft.

(3)Position the de-fuel truck so it can either be driven or towed away from the aircraft in the event of an emergency. Do not park ramp equipment where it will obstruct the movement of the tank truck.

C.BONDING.

(1)Always make the correct bonding connections before de-fueling.

(2)Connect a bonding cable from the fuel tanker to the aircraft. Do not attach cable to propellers or radio antenna.

(3)Before removing any aircraft fuel tank filler cap, connect the bonding cable attached to the fuel hose nozzle to a metallic component of the aircraft.

(4)All containers used in de-fueling of aircraft will be grounded.

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D.FIRE EXTINGUISHER.

Portable fire extinguishes (dry chemical or CO2) shall be available on the ramp or apron in case of a fuel spill or fire to provide an immediate means of fire protection. The prominent and strategic positioning of fire extinguishes is essential so they may be of maximum value in the event of an emergency. In some situations it may be desirable to position an extinguisher near an aircraft. In this situation, locate the extinguisher upwind within 50 feet of the aircraft.

E.OPERATION OF APU WHILE DEFUELING AIRCRAFT.

The APU can be operated during single point de-fueling of the B727 to transfer fuel, if the following restrictions are taken.

(1)The APU shall not be operated if the wind velocity is less than 5 knots. This is to reduce any chance of vapor accumulation in the event of a fuel spill.

(2)One-crewmember or maintenance personnel must be in the cockpit.

NOTE: Except when the aircraft is equipped with an external APU control panel with APU shutdown controls.

(3)The APU shall be immediately shut down and de-fueling discontinued in the event of fuel spill, APU malfunction, and/or APU fire.

F.USE OF GROUND UNITS.

(1)Position ground power units upwind from the de-fueling operation as far distant as possible.

(2)Do not obstruct the path of the de-fuel truck.

G.DEFUELING.

(1)Prior to starting de-fueling operations, a check will be made to ensure that the fuel in the aircraft is the same grade as in the de-fuel truck.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

(2)Make certain storage tank, compartment, receptacle, etc., are clean and of sufficient capacity to hold the amount of fuel to be drained.

(a)Reduce rate of de-fueling as fuel nears top of storage container, to prevent overflow and subsequent hazardous fuel spillage.

(b)A second man will be required at the fuel truck to monitor tank level during de-fueling to prevent spillage.

(3)When single point de-fueling, check fuel vents for obstructions.

H.FUEL SPILLS.

The following actions are appropriate in the event of a fuel spill, although each spill will have to be treated individually because of such variables as: size of the spill, the flammable or combustible liquid involved, wind and weather conditions, equipment arrangement, aircraft occupancy, emergency equipment, and personnel available. Refer to National Fire Protection Association (NFPA) 407 Standard for Aircraft Fuel Servicing for a thorough discussion of fuel spills.

(1)Terminate the fueling operation; stop the flow of fuel if possible.

(2)Halt any operations in progress until a determination is made they may be continued safely.

(3)Evaluate the aircraft if the spill is such as to pose a fire threat.

(4)Mobile fueling equipment and other mobile equipment should be withdrawn or left as is until the fuel spill is removed or made safe.

(5)Notify supervisory personnel and the airport fire crew if the spill presents a fire hazard.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

3.FUEL TANK PURGING.

A.GENERAL.

The fuel tank purging procedures given in the various maintenance manuals all concur on several items:

(a)Safety precautions must not be compromised.

(b)During fuel tank purging, fuel vapor can be explosive.

(c)The use of warm air or cooling air is strictly for the comfort of personnel working inside the fuel tank, NOT a function of the purging operation.

B.SAFETY PRECAUTIONS.

There are several basic steps that will be taken in preparation for opening a fuel tank. Always refer to the specific aircraft maintenance manual for detail instructions.

(a)Adequately ground the airplane.

(b)No electrical power is allowed on the airplane when a fuel tank is open. Disconnect and tag the aircraft's battery. Do not restore power until the fuel tank is closed.

(c)Rope off the aircraft and post signs "DANGER - OPEN FUEL TANKS" in a clear and visible area. More than one sign should be used. Place signs in pathways where non-maintenance personnel are likely to approach the area.

(d)Purge tank using a venturi and compressed air. Position air compressor at least 100 feet from open fuel tank unless the air compressor is explosion proof.

**WARNING:FUEL VAPOR IN TANKS MAY BE TOO RICH TO IGNITE WHEN TANKS ARE INITIALLY OPENED. HOWEVER, THE VAPOR CONCENTRATION WILL PASS THROUGH AN EXPLOSIVE MIXTURE LEVEL DURING TANK VENTILATION. VAPOR MIXTURES TOO LEAN TO IGNITE, IF ALLOWED TO ACCUMULATE IN AN UNVENTILATED SPACE CAN FORM AN EXPLOSIVE MIXTURE.**

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

4.AIRCRAFT FUEL CONTAMINATION CONTROL

A.GENERAL.

Aircraft fuel, especially turbine fuel, is susceptible to water contamination. Under certain conditions any water remaining in the tanks can freeze and clog the fuel screen(s). The presence of water also supports bacterial growth which can clog fuel system components and cause corrosion. The following procedures are provided to minimize problems in this area. Depending on geographic location some activities will have more water contamination problems and require additional precautions to minimize contamination from water.

B.WHEN TO TEST FOR WATER - WHAT METHOD TO USE.

Aircraft fuel sumps are to be drained during Daily and Preflight Inspections.

(1)The fuel sample drain should total at least one quart and must be inspected for contaminants.

NOTE: BECAUSE WATER SETTLES MORE SLOWLY THROUGH TURBINE FUEL THAN THROUGH GASOLINE, AFTER REFUELING IT IS DESIRABLE TO ALLOW TIME FOR ANY FREE WATER WHICH MAY BE PRESENT TO SETTLE TO THE SUMP(S) BEFORE TAKING FUEL SAMPLE. A 15-MINUTE WAIT IS ADEQUATE, BUT A LONGER SETTLING PERIOD IS BETTER WHEN TIME PERMITS. THE DRAINED FUEL SAMPLE SHALL NOT BE RETURNED TO THE FUEL TANKS.

(2)Either of the two visual inspection check methods described in this chapter may be used after refueling. The Hydrokit check described in this text shall be performed on a fuel sample from the refueling hose when it is not practical to wait 15 minutes after refueling for water to settle. Also, the Hydrokit should be used (1) for "go, no-go" test if there is a question about the condition of the fuel after a visual check has been made; and (2) whenever an aircraft is away from its home base and being fueled by a fixed base operator whose fuel storage practices are not known, or when there is any question or doubt about the contamination of fuel being serviced.

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C.VISUAL CHECK FOR CONTAMINATION.

Visually examine the sample in a clean container, preferably in sunlight. Look for visible water (cloudy, droplets, emulsion, or separate layer). Also, swirl the fuel to create a large vortex in the center. If any free water or other foreign matter is present, it will tend to collect at the center of the vortex and at the bottom of the container. If water is detected, drain sufficient fuel from the tank sumps until visual check reveals no water contamination.

(1)Visual check, using red dye

This dye check can be used only with fuel which does not contain the Phillips

Additive PFA-55MB.

(a)This check is performed the same as the visual check, except that several drops of dye coloring are added to the drained fuel sample.

NOTE: Use regular liquid household red food dye that is used to color cake icing, (McCormick, or equivalent).

(b)Swirl the fuel sample to form a vortex and examine it for foreign matter. When the swirling stops, add several drops of dye; the drops will form into balls and fall to the bottom if no water is present. If water is present, the dye will dissolve and color the fuel sample bright red.

(c)If water is found, drain sufficient fuel from the tank sumps to eliminate the water and recheck.

(2)Hydrokit Check

This is a more precise fuel check, which provides a capability for testing the fuel contamination in the fueling truck and the aircraft.

WARNING: THE POWDER USED IN THE HYDROKIT MAY BE FATAL IF SWALLOWED: THEREFORE, EXTRA CARE SHOULD BE TAKEN IN THE DISPOSAL OF SAMPLES SO THAT THERE IS NO POSSIBILITY OF HANDLING AND INGESTING THE POWDER OF THE POWDER- FUEL MIXTURE INTO THE STOMACH FROM HANDS.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

(1)All organizations which are directly responsible for maintaining turbine-powered aircraft should stock an appropriate supply of the Hydrokits.

(2)The fuel-sampling test should be accomplished before and after fueling operations to ensure that a representative test is accomplished.

NOTE: Before Hydrokit test is performed, check the condition of the granular material (desiccant) in the bottom of the container containing Hydrokit capsules. The desiccant should be blue in color. If color is violet, pink, or white, or if the material inside the capsule has changed from grayish-white to pink or purple color, the capsule should be discarded safely.

(3)Checking procedures

(a)The fuel sample should be drawn from the aircraft side of the final filter/separator, from the piping on the fueling vehicle, or from the fueling nozzle itself.

(b)The fuel sample should be drawn about one-half minute after fuel flow into aircraft starts. If a fuel test is requested before the fueling is started or after the tanks are serviced, it should be run in addition to, not as a part of the test as described in (c)(1).

(c)Only the containers (jars) supplied with Hydrokit should be used for taking samples and testing. If dust or dirt is present, the container should be wiped out with a clean dry cloth.

(d)After a container has been used, it may be prepared for reuse. This should be done as soon as possible after test is completed.

NOTE: The Hydrokit is very sensitive to moisture and can be easily contaminated. Avoid uncapping the container in rain or with wet hands.

Fill a clean and dry sample container to the graduation mark (100cc - approximately three fluid ounces) with fuel.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

(f)Empty contents of one capsule into fuel sample. Close container tightly.

(g)Shake the sample approximately 10 seconds. Examine powder for evidence of color change.

(1)Results

(a)Color changes

If powder changes color - to purple - or if colored spots appear anywhere inside the jar within two-minutes, the sample "fails". Water concentration is 30 ppm or more of free water.

(b)No color change

If no color change is observed within the two-minute period, the sample "passes". the fuel sample is essentially dry, containing less than 30 ppm of free water.

NOTE: Ignore any color change which occurs after two minutes, and safely dispose of sample. No effort should be made to determine the amount of free water by degree of color change. Such a determination is meaningless and could be misleading.

(2)Action to be taken if test fails

(a)Cease fueling operation.

(b)Advise the appropriate supervisor or lead person.

(c)Check filter/separator sump for water accumulation.

Take additional action as indicated by the situation after informing the appropriate supervisor. This should normally include repetition of test before resuming fueling to check if the procedure during the test was at fault.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

(e)Report the incident to the immediate supervisor, with all pertinent details.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

5.AIRCRAFT GROUND HANDLING SAFETY.

A.GENERAL.

This chapter establishes safety practices for taxiing, towing, application of external electrical power, and engine run-up. Where the safety requirements of this section cannot be met, a waiver shall be secured from the division manager or facility manager, specifically stating the waiver conditions which exist within the facility that causes a need for a waiver to be issued.

B.RESPONSIBILITY.

Activities operating and/or maintaining <Your Agency> aircraft will adhere to the provisions of this chapter.

(1)Taxiing of aircraft should be held to a minimum.

(2)Extra caution should be observed when movement of aircraft is necessary during darkness and/or inclement weather. Marshallers shall use illuminated wands when guiding aircraft at night.

(3)Except in emergencies, aircraft will not be moved or operated unless the minimum approved ground crew, as specified in this chapter, is available and utilized.

C.FIREGUARD.

A properly trained individual will be stationed near the aircraft prior to engine starting. The individual will serve as fireguard and shall stand by until all engines are operating and the danger of fire during start no longer exists.

D.COCKPIT.

The appropriate cockpit checklist shall be used for starting, operating, and trouble shooting of aircraft engines. The outlined procedures shall be followed before, during, and after the operation.

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E.EXTERNAL GROUND POWER UNITS.

Ground Power Units, electrical heating, and air-conditioning units shall be located as far as practical from refueling facilities, fuel tank vents, and drains. Only properly qualified personnel shall start, operate ground power and auxiliary power units.

F.ENGINE RUN-UP.

When performing maintenance with engines running, personnel must exercise extreme caution. When making engine adjustments with cowling opened or removed. There must be direct communications between the person at the controls and the person making the adjustments. Preoccupation with the maintenance task may distract attention from spinning propellers, or intake and exhaust hazards.

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CHAPTER VII.TRAINING AND SERVICING

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6.APPROVED MARSHALLING HAND SIGNALS.

A.ASSUMING GUIDANCE OF AIRCRAFT.

The marshall person indicates "I am your marshall - am properly positioned and assuming guidance of the aircraft." Both arms are raised vertically to full length.

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B.COME AHEAD SIGNAL

The marshall person indicates the aircraft should proceed straight ahead. Both hands slightly above eye level, elbows at shoulder level. Motion with the forearms upward through the vertical position for the aircraft to come ahead. The signal will be repeated until the aircraft approaches the stop position.

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C.RIGHT TURN

The marshall person points their left arm at the right wheel of the aircraft around which it is to pivot while continuing the "Come Ahead" signal. The sharpness of the turn may be varied by increasing or decreasing the rapidity of the come ahead motion.

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D.LEFT TURN

The marshall person points their right arm at the left wheel of the aircraft around which it is to pivot while continuing the "Come Ahead" signal. The sharpness of the turn may be varied by increasing or decreasing the rapidity of the come ahead motion.

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E.SLOW DOWN.

The marshall person requests a decrease in taxi speed by extending the arms out sideways from the body, hands and wand pointing downward. With elbows slightly bent he makes a downward repetitive motion.

CHAPTER VII.TRAINING AND SERVICING

F.STOP SIGNAL - BRAKES ON.

(1)Under normal conditions the "stop" signal should flow naturally from either the "Come Ahead" or "Slow Down" signals. Beginning with arms extended horizontally, sideways, the marshall person modulates the closure rate of the aircraft to the parking spot by raising arms toward the vertical. The nose wheel should stop on the spot as the wands cross. The "Stop" signal will be used when necessary to hold the aircraft away from the normal parking position.

(2)Engine(s) will not be shut down until the "Cut Engine(s)" signal is given.

(3)The brakes will be held "ON" until the "Chocks IN" signal is given.

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G.CUT ENGINE(S).

Engine(s) will not be shut down until this signal is given. The marshall person draws on hand and wand horizontally across the neck in cutting motion. If only one engine is to be cut, the marshall person will point other hand at the engine to be shut down.

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H.CHOCKS INSERTED - BRAKES OFF.

(1)<Your Agency> operations require the operator to hold pressure on the foot brakes until chocks have been inserted. This signal advises the operator that chocks are in and they may resume their other duties. Hands are held aside and outward from the body with wands pointed across the body. A downward motion is made bringing the tips of the wand together.

(2)The operator will acknowledge by showing marshall person both fists, thumbs extended toward each other.

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CHAPTER VII. TRAINING AND SERVICING

I.SET BRAKES.

The marshall person requests the parking brakes be set by pointing both arms held shoulder high at the aircraft with wands pointed toward each other, tips touching. Slight up and down motion with the arms may be used to attract operator's attention.

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J.CHOCKS REMOVED

The marshall person advises the operator that chocks have been removed by reversing "Chocks Inserted" motion. Hands are held straight down with wands pointed outward. A sweeping motion upward and outward is made to shoulder level.

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K.START ENGINES

Engine starting by hand signal will be used if headset is unavailable. the marshall person will point the engine to be started while extending the other shoulder level and rotating forearm, hand and wand.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

7.TAXIING AIRCRAFT.

A.GENERAL.

Only personnel trained and authorized by the <Your Agency> Supervisor of Maintenance or rated pilots shall be permitted to taxi <Your Agency> aircraft. Taxiing operations shall be performed in accordance with all applicable <Your Agency> and local directives and requires at least one marshaller. A person authorized to taxi aircraft shall be familiar with approved radio communications procedures and airport control tower or ground control frequencies.

(1)The person in charge of taxiing is responsible to ascertain that all existing procedures, regulations, and standards are complied with.

(2)Brakes shall be checked immediately for proper operation and hydraulic pressures will be constantly monitored.

(3)Reverse thrust shall not be used for backward movement of the aircraft.

(4)Weather, wind, and ramp conditions shall be considered at all times and good judgment exercised before taxiing any aircraft. Light twin aircraft will not be taxied by maintenance personnel when surface winds are above 25 MPH. When wind conditions are above 25 MPH, taxi test should be delayed or performed by pilot personnel.

(5)Position the flight controls to compensate for existing wind and/or terrain as specified in the appropriate Aircraft Flight Manual or Pilots Operating Handbook.

(6)Wing marshallers shall be utilized in congested areas. Minimum power should be used to prevent damage to surrounding aircraft and equipment. Wing marshallers are responsible for stopping all vehicle and/or foot traffic in the vicinity of an aircraft taxiing or preparing to taxi.

Prior to any movement of aircraft across runways or taxiways, clearance must be obtained from the airport Air Traffic Control or determined visually on airports without radio control facilities. Airport ground traffic frequencies shall be monitored at all times during taxi and runup operations. The receiver volume shall be adjusted high enough to be heard above the sound of the engines.

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(8)When taxiing at night, turn position lights, landing lights, and anti-collision light ON, strobe lights should be turned OFF.

(9)Taxi speed shall be held to minimum, especially when utilizing wing walkers or taxiing in congested areas. Taxiing speed shall not exceed a person's normal walking pace, approximately 4 miles per hour.

B.STANDARD TAXI LIGHT SIGNALS.

LIGHTSMEANING

Flashing GreenCleared to Taxi

Steady RedStop

Flashing RedTaxi clear of runway in use

Flashing WhiteReturn to starting point on airport

Alternating Red and GreenExercise extreme caution

C.PARKING OF AIRCRAFT.

(1)Aircraft shall be parked in designated parking areas as specified in the local authorized parking plan.

(2)Transient aircraft will be directed to a suitable parking area with voice communication when radio facilities are available and in use, at other times hand signals or follow-me vehicle will be used.

(3)Aircraft parked in hangars will be positioned clear of hangar doors at all times during severe weather. During normal weather conditions, the following criteria will be adhered to when there is a requirement to park an aircraft across the threshold of hangar doors.

(a)The aircraft will be securely chocked in position to secure minimum sway motion.

(b)Adequate clearance will be given between hangar doors and aircraft to allow maximum sway motion of aircraft and still not contact the hangar doors.

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(c)Hangar door position will be secured by locking the control switches of power-operated doors and chocking the rollers on manually-operated doors.

(4)Designated parking areas are to be utilized for the purpose of performing engine test/run operations. When engine speeds are to be higher than idle, the person performing the engine run will ensure that the aircraft is parked in an area that is safe for all engine speeds.

(5)Wheel chocks shall be placed fore and aft of main landing gear or nose wheels, as applicable.

(6)Internal or external control locks shall be engaged.

(7)Landing gear down lock safety pins shall be installed, if applicable.

(8)Pitot tubes shall have cover protector installed.

(9)Aircraft parked in a hangar shall be statically grounded.

(10)Engine (intake and exhaust) plugs shall be installed in turbine powered aircraft.

(11)Maintenance equipment utilized in parking areas shall be removed and secured clear of the area after use.

D.<Your Agency> HANGAR AND RAMP SAFETY.

Taxiing, engine operations, and movement of aircraft present a condition where accidents can easily occur. Every person involved in aircraft maintenance has a responsibility to promote safety. Some events to be aware of are:

(1)Vehicle movements, including tugs, etc., in the area of aircraft taxiing or ready to taxi. Marshallers shall direct all moving vehicles clear of the aircraft.

(2)Personnel walking in the area of operating aircraft engines, both propeller and gas turbine engines. Aircraft rotating beacons shall be on when the engines are operating.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

8.AIRCRAFT TOWING/REPOSITIONING.

A.GENERAL.

Aircraft ground handling personnel shall be thoroughly familiar with all procedures pertaining to the type of aircraft being towed, repositioned and the local operating procedures regarding the ground movement of aircraft. Newly assigned personnel will complete an adequate on-the-job training program before being assigned to ground handling of aircraft.

(1)During normal duty hours a minimum of four personnel shall be utilized when towing aircraft in a congested area. The tow vehicle operator will be in charge of the operation. The person in charge shall ensure that members of the towing crew are familiar with their assignments. The wing and tail marshalling may be dispensed with when the aircraft is being moved in an area where no contact with objects is probable, including vehicle movement areas.

(2)A tail marshaller shall be assigned when moving large aircraft with high vertical stabilizers into or out of hangers. A tail marshaller shall be utilized whenever clearances are close and the possibility of contact with objects exist.

(3)The towing vehicle operator shall be responsible for operating his/her vehicle in a safe manner and shall obey emergency stop instructions given by any team member. When operating a government vehicle the operator shall be a qualified driver. Contractor personnel shall be authorized by letter from the COTR to operate U.S. Government vehicles.

(4)Each member of the towing team must be aware of who is in charge and the wing and/or tail marshaller shall be prepared to relay clearances and guidance signals to him/her.

(5)The operator of the towing vehicle is responsible for using the services of a guideman whenever vision is restricted or the aircraft is being positioned into a close or congested area. The operator must take hand signals from ONE GUIDEMAN.

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(6)Only one person, the GUIDEMAN, shall relay signals to the operator of the tow vehicle. Because verbal signals are easily misunderstood, the marshaller shall avoid using them. All hand signals shall be standard and given with both arms. One-handed signals shall not be used. Hand signals may be supplemented with a shrill police type whistle.

(7)A qualified person shall be utilized in the pilot's seat of the aircraft being towed to observe and operate the brakes as required by the towing team. When necessary, another person shall be stationed to watch and maintain hydraulic pressure if the person in the pilot's seat is unable to do so. All persons shall be familiar with normal and emergency braking procedure.

(8)Operating or towing of aircraft on taxiways or runways requires radio communication be established between the tow vehicle or a lead vehicle and the airport tower or ground control and maintained until terminated by tower or ground control personnel.

(a)The aircraft brakeman in the cockpit may utilize the aircraft radio for tower or ground control communications provided they also have two-way communication with the driver of the tow vehicle via interphone or hand held radio.

(b)Towing of an aircraft with inoperable radios is permissible by utilizing a lead vehicle that has two way radio communication with tower or ground control personnel.

(9)The person in charge of the towing operation shall verify that the nose gear torque link or rudder lock are disengaged when applicable prior to towing the aircraft. Rudder lock and/or torque links shall be reengaged after towing.

(10)Under no circumstances shall personnel walk between the nose wheel of a moving aircraft and the towing vehicle nor ride on the outside of a moving aircraft. To avoid personal injury, no person (except in an emergency situation) shall attempt to board or leave a moving aircraft or towing vehicle. All personnel shall be seated on installed seats during towing operations.

(11)The towing speed of the aircraft shall not exceed that of the walking team members. The aircraft engine shall not be operated at any time the aircraft is being towed into position.

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(12)If necessary, the aircraft brake systems shall be charged before each towing operation. When towing aircraft with faulty brakes, personnel must be located by each main gear with chocks in hand for emergency use. Chocks shall be readily available in case of emergency during any towing operation. Aircraft brakes should be operationally checked prior to towing operations.

(13)To avoid possible injury and aircraft damage during towing operations, entrance ladders shall be retracted and gear down locks installed, if applicable.

(14)Prior to towing any aircraft, towing team members shall check all tires and landing gear struts for proper inflation.

(15)When towing aircraft, the vehicle operator should not jerk the aircraft or start and stop suddenly. Cockpit personnel shall not apply aircraft brakes during towing operations unless an emergency exists. Upon completion of the towing operation the tug driver shall notify the brakeman to set brakes if applicable.

(16)Aircraft shall be parked in specified areas only. Generally, the distance between rows of parked aircraft shall be enough to allow immediate access of emergency vehicles in case of fire and also permit free movement of equipment and materials.

(17)Prior to any movement of aircraft across runways or taxiways, contact shall be made with the airport control tower or ground control for clearance to proceed.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

9.AIRCRAFT DEICING AND COLD WEATHER GROUND OPERATIONS.

Maintenance personnel should be familiar with Advisory Circular (AC) 20-117 in addition to the instructions contained in this section.

A.GENERAL.

This section details procedures necessary to assure safe movement and servicing of aircraft on the ground during cold weather operations. Approved methods and equipment for removing snow, ice, frost, and slush are detailed in this section.

NOTE: The presence of ice, frost or snow anywhere on the surfaces can seriously impair the performance characteristics of the aircraft and utmost care must be taken to clear the surfaces of any discernable hazard.

B.PRECAUTIONS.

The procedures listed below and the instructions in the aircraft maintenance manual will be adhered to:

(1)If freezing conditions exits or are forecast, the aircraft will be stored in a hangar if possible. When the aircraft cannot be hangared, and accumulate moisture freezes, in any form, deicing will be accomplished as required, per paragraph C of this section.

(2)When towing aircraft on snow or ice, extreme caution should be used due to the peculiar handling reactions of towed aircraft on slippery surfaces.

(3)Any towing vehicle used on snow or ice to move aircraft will be outfitted with chains on the drive wheels, unless waived in writing by the Supervisor of Maintenance.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

C.DEICE PROCEDURES.

Deicing will be accomplished using the <Your Agency> truck mounted de-icing equipment following these operational and safety guidelines.

(1)Two men will be stationed in the basket to provide safe and efficient deicing. One will operate the boom and the other will control the spray nozzle. Contact with the driver will be maintained at all times by use of headsets and mike in the basket and the truck cab. Dual controls are provided, but the basket operator is the key controller of the boom in regard to close tolerance of basket.

(2)A minimum clearance of 10 feet is to be maintained between the deicer vehicle and the aircraft at all times.

(3)At no time will the vehicle pass under any part of the aircraft during the deicing operation.

(4)The combustion heater on the aircraft deicing unit is not to be operated if the vehicle is within 50 feet of an aircraft of hangar, or the aircraft or vehicle is being refueled.

(5)All personnel operating the deicing equipment will be properly trained and an appropriate notation filed in their employment record.

(6)There are to be no occupants in the basket during transport of the vehicle to and from deicing operations.

(7)Do not walk or stand on the aircraft after deice fluid has been applied.

(8)When servicing the deicing vehicle, leave space for heat expansion of the fluid.

(9)Wear goggles or face shield while performing deicing operations.

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**CAUTION:** IF THE VEHICLE ENGINE STOPS AND CANNOT BE RESTARTED, THIS WILL STRAND THE OCCUPANTS OF THE BASKET. IN THIS CASE, THE BOOM MUST BE LOWERED BY REMOVING THE REAR CENTER PANEL OF THE VEHICLE AND SLOWLY SCREWING THE ADJUSTING BOLT ON THE BOOM ACTUATING CYLINDER WHILE PUSHING FIRMLY ON THE SOLENOID BUTTON UNTIL THE BOOM STARTS TO SLOWLY FREE FALL. BE SURE THE VEHICLE IS CLEAR OF THE AIRCRAFT WHEN LOWERING THE BOOM IN THIS MANNER.

D.FLUID APPLICATION

(1)Assure that all aircraft doors and windows are closed before and during fluid applications.

(2)Lower wing flaps fully to assure removal of all ice that may have accumulated in flap well areas during aircraft operations.

(3)Do not spray fluid directly into air scoops, engine inlets, or on hot exhausts. Snow accumulations of one inch or more should be removed before any fluid application.

(4)Apply only enough fluid to remove the ice or snow and leave a light film of deicing fluid on the aircraft.

(5)When an aircraft is hangared to accomplish deicing, all hinges for the elevator, aileron, rudder and tabs should be hand-sprayed with undiluted ethylene glycol after all melted ice or snow has drained off the aircraft.

(6)All landing gear components and the lower wing surface in the landing gear area should be sprayed to remove all accumulated slush.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

E.APPROVED AIRCRAFT DEICING FLUIDS

Only approved deicing fluids will be used. The following approved fluids are not harmful to natural or artificial rubber, plastics, bearings or the airframe structure. The flash point is high enough to be safe for use around aircraft.

(1)MIL-A-8243A Fluid, Federal Stock Number 6850-00-558-1248.

(2)Union Carbide Aircraft Deicing Fluid C

(3)Dow Chemical Aircraft Deicing Fluid No. 146

(4)Any commercial brand of ethylene glycol permanent antifreeze is acceptable in an emergency.

NOTE: Deicing fluid is to be mixed using the individual manufacturer specifications for the particular fluid being used and the approved aircraft maintenance manual.

CAUTION: When using deicing/anti-icing fluids on aircraft as anti-icing compounds (i.e., glycol-based fluids applied concentrated and cold to aircraft to prevent ice, snow and frost from adhering to the treated surfaces), the following precautions should be used:

(a)On type I fluids (glycol-base with corrosion inhibitor usually used as dicing fluids), do not use in temperatures below -30 degrees F.

(b)On type II fluids (glycol-base with corrosion inhibitors and thickeners), do not use in temperatures below +15 degrees F.

F.PERSONAL PROTECTION

Certain precautions must be taken during cold weather to prevent injury to personnel while exposed to the elements.

(1)Clothing adequate to supply protection should be worn.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

(2)Extra caution should be used during lifting, pulling, and bending due to the increased risk of muscle pull in cold temperatures.

(3)The time spent exposed to low wind chill conditions should be carefully monitored and periods of relief provided to lower the risk of frost bite.

G.POTABLE WATER TANKS

Potable water tanks will be drained during freezing weather and serviced only when mission requirements mandate a need for potable water. After completion of the last flight of the day, tanks will be drained. When tanks are drained, information stickers will be applied where anyone needing to know may read and be advised of empty tanks.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

10.TIRES.

A.GENERAL.

(1)This procedure establishes policy for all tires used on <Your Agency> aircraft.

(2)The only re-treaded tires approved for use on <Your Agency> aircraft are the main tires on the Boeing 727's. The re-treading is to be accomplished by an approved facility.

(3)Boeing 727 main tires are limited to six (6) retread operations.

B.SERVICING.

(1)Aircraft manufacturer's recommendations will be used when available for maintaining all aircraft tires. When manufacturer's recommendations are not available Advisory Circular 145-4 may be used as a guide in determining serviceability of tires.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

11.CHEMICAL TOILETS.

A.GENERAL.

Chemical toilets will be serviced following procedures given in the aircraft maintenance manual applicable to the aircraft being serviced. Safety measures shall be followed carefully during this procedure.

WARNING:CHEMICAL CONCENTRATE USED IN TOILETS MAY CAUSE IRRITATION IF IT CONTACTS EYES OR SKIN. IF CONCENTRATE CONTACTS EYES OR SKIN, FLUSH WITH CLEAN WATER. IF IRRITATION PERSISTS, SEEK MEDICAL AID.

(1)The following materials and equipment will be utilized to accomplish servicing efficiently and safely. Chemical toilets will be serviced with a mixture of 75% propylene glycol and 25% water, in lieu of straight water, during temperatures below freezing. This is in addition to all other requirements that may be specified in the aircraft maintenance manual.

(a)Approved toilet servicing unit

(b)Neoprene or natural rubber gloves

(c)Face shield and water proof apron

(d)Approved deodorant/disinfectant chemical

(2)Aircraft being operated in temperatures below freezing will be serviced in accordance with the requirements stated in the aircraft maintenance manual.

(3)Care should be taken to prevent any spills on the ramp area or hanger floor.

(4)All waste will be disposed of in an approved waste disposal receptacle in accordance with local, city, and state requirements.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

12.AIR CONDITIONING UNITS

A.GENERAL.

Each aircraft requires different servicing procedures and system components will be located at different points on the aircraft. The appropriate approved aircraft manufacturer maintenance manual will be referenced for servicing instructions.

B.SAFETY MEASURES

The following safety measures shall be adhered to:

WARNING:CHARGED FREON SYSTEMS ARE UNDER HIGH PRESSURE. THE UNEXPECTED RELEASE OF FREON MAY CAUSE PERSONAL INJURY. EXERCISE CAUTION WHEN CHECKING FOR LEAKS AND/OR MAKING REPAIRS WHEN THE SYSTEM IS CHARGES.

(1)A face shield will be worn by all personnel in the immediate areas when freon systems are being serviced.

(2)When it is necessary to remove or replace any component in a freon system which requires the depletion of the freon charge, an approved freon reclamation unit will be utilized. This will prevent the loss of freon into the atmosphere.

CAUTION:REMAIN CLEAR OF ANY COMPONENT THAT MAY BE INADVERTENTLY OR UNEXPECTEDLY ACTIVATED DURING THE SERVICING OF ELECTRICALLY OPERATED AIR CONDITIONING SYSTEM..

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

13.HYDRAULIC AND OIL SERVICING.

A.GENERAL

In addition to the requirements outlined in the aircraft/equipment maintenance manuals the following shall apply to hydraulic and oil servicing of aircraft, engines, and APU.

B.SERVICING EQUIPMENT

(1)Avoid spilling oil or hydraulic fluid on aircraft surfaces or maintenance stands.

(2)Ground aircraft and servicing vehicles prior to making servicing connections. Hand operated hydraulic and oil servicing carts need not be grounded during servicing operations.

(3)Position servicing equipment as far from any portion of the aircraft as cables/hoses will allow. Maintenance stands shall be properly positioned to obtain easy access to filler caps.

CAUTION:SOME <Your Agency> AIRCRAFT USE A COMMERCIAL HYDRAULIC FLUID WHICH IS NOT COMPATIBLE WITH STANDARD RED MIL-H-5606. MAKE SURE THAT THE AIRCRAFT MAINTENANCE MANUAL REQUIREMENTS ARE FOLLOWED TO PREVENT CONTAMINATION.

C.SERVICING CONTAINERS

(1)When servicing from cans or drums, ensure that cleanliness and product integrity are maintained.

(2)Keep each product segregated and properly identified.

(3)Carefully read the label before dispensing oil and hydraulic products to ensure the correct product is being used.

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(4)Fluids and containers carried aboard aircraft shall meet the provisions of CFR 49, Part 175, in relation to transportation of dangerous fluids.

(5)Personnel will not use fluids obtained from permanent or temporary storage containers which are not properly identified.

**CAUTION:SKYDROL HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL AND EQUIPMENT. IMMEDIATELY FOLLOWING THE SERVICING OF EQUIPMENT WITH SKYDROL PERSONNEL SHOULD CLEANSE THEIR HANDS. ANY FLUID SPILLED DURING SERVICING SHALL IMMEDIATELY BE CLEANED UP AND THE CLEANING MATERIALS DISCARDED.**

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

14.HIGH PRESSURE GAS CYLINDER SERVICING PROCEDURES.

A.GENERAL.

The following procedures are provided to reduce the inherent danger of servicing high pressure gas cylinders.

B.RECHARGING PROCEDURES FOR HIGH PRESSURE CYLINDERS.

(1)Insure that the cylinder to be serviced is well anchored and secured against any motion due to failure of regulator.

(2)Remove cover plate from the valve of the cylinder to be charged. Rotate cam so that valve is in the open position.

(3)Connect the hose from the supply cylinder to a pressure gauge and then to the cylinder to be charged. Charge cylinder to the pressure recommended in the specific manual.

(4)Open valve on supply cylinder slowly, charge slowly to prevent receiving cylinder from getting too hot.

(5)Close valve on the cylinder being charged by turning cam to closed position. Close valve on the supply cylinder. Remove cylinder from the hose and gauge.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

15.HAZARDOUS MATERIALS.

A.GENERAL.

The <Your Agency Aviation Title> conducts missions requiring the carrying of hazardous materials, maintains a battery shop for the maintenance of aircraft batteries, transports equipment that may contain flammable fluids, and performs other functions requiring the use of fluids and materials classified as hazardous. The <Your Agency Aviation Title>, Supervisor of Maintenance, shall make available to all <Your Agency> maintenance personnel a current copy of the Code of Federal Regulations (CFR), Title 49, Parts 100-177, as a reference for Hazardous Materials.

B.DEFINITION OF HAZARDOUS MATERIAL.

Hazardous materials means a substance or material which has been determined by the U.S. Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported by air transportation and which has been so designated in CFR Title 49 Parts 100-177. <Your Agency> mission related items and equipment may also be considered hazardous materials.

C.AUTHORITY TO TRANSPORT.

The <Your Agency> shall not accept for shipment aboard any aircraft hazardous materials except those exempted by CFR Title 49, Part 175.10 without a special release from the Chief, Air Operations Division. Some of the exempted substances and materials are:

(1)The <Your Agency> will accept shipments (cargo) containing carbon dioxide, solid (dry ice) provided the package is clearly marked with the name of the contents being cooled, the net weight of the dry ice or an indication that the net weight is 5 pounds or less, and also marked "Carbon Dioxide, Solid" or "Dry Ice".

(2)The <Your Agency> will permit packages containing dry ice in quantities not exceeding 4 pounds per passenger when used to pack perishables in carry on baggage.

(3)Packages containing dry ice must be designed to prevent a build up of pressure that could rupture the packaging.

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(4)Current copies of CFR, Title 49, Parts 100-177 are available for reference.

(5)<Your Agency> personnel are responsible for screening of all shipments, cargo, freight, etc., to prevent the carriage of hazardous materials as specified in CFR, Title 49.

D.EXAMPLES OF HAZARDOUS MATERIALS.

The following list of hazardous materials are meant to be a guide only. Nothing can replace good judgement when transporting any substance or material that can either explode or contribute to an in-flight emergency or after accident fire. For example, transporting small emergency power generating units can be hazardous if their fuel systems have not been properly drained and purged. Therefore, this list is a guide only:

(1)Paints

(2)Lighter fluids

(3)Lighters with flammable liquid reservoirs

(4)Fireworks

(5)Tear gas/Mace

(6)Ammunition and explosive devices

(7)Radio pharmaceuticals

(8)Fish meal

(9)Celluloid film

(10)Batteries

(11)Compressed gas

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E.SPECIAL AUTHORITY TO TRANSPORT HAZARDOUS MATERIALS.

In the performance of special missions, the <Your Agency> may be required to transport certain substances, material, and devices that are considered hazardous materials. These situations require special authorization by the Chief, <Your Agency Aviation Title>. A complete list of the hazardous materials being transported by air shall be provided the Chief, <Your Agency Aviation Title>, for his approval. This information will be provided to the Chief Pilot and Supervisor of Maintenance and will be retained until completion of the mission and provided to appropriate personnel in case of an accident or incident involving the aircraft. Notice of the presence of hazardous material, not necessarily the type of materials, on board the aircraft shall be given to maintenance personnel required to service the aircraft during and after the mission to alert them to the possibility of residual materials being present.

F.RELEASE TO MAINTENANCE AFTER SPECIAL MISSIONS.

Special missions or situations where hazardous materials have been carried shall require a special search by <Your Agency> tactical/flight personnel prior to the aircraft being released to maintenance. Following missions or situations where hazardous materials have been carried the following procedure will be used:

(1)Aircraft shall be parked and the tires chocked.

(2)Maintenance personnel shall assist the <Your Agency> tactical/flight personnel in opening the doors and cargo compartments.

(3)Maintenance personnel shall not begin any servicing or maintenance on the aircraft until it has been released by the Supervisor of Maintenance or his designee.

G.SPECIAL

Following missions or situations where hazardous materials have been carried the <Your Agency> shall perform a special search of the aircraft to assure that all hazardous materials (ammunition, weapons, mace, explosives, etc.) have been removed prior to releasing the aircraft to maintenance.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

16.AIRCRAFT CLEANING - SPECIAL HEALTH PRECAUTIONS.

A.INTERIOR.

<Your Agency> aircraft interiors represent a special cleaning requirement. Personnel being transported from vastly different backgrounds, under potentially dangerous circumstances, often spill body fluids/waste and blood on seats, floors, and other furnishings inside the aircraft. These fluids have been known to carry several blood borne pathogens such as hepatitis B, AIDS, etc. During inspections of aircraft interiors maintenance personnel shall visually inspect for possible areas of blood and/or body fluid spills.

(1)Routine Cleaning of Aircraft Interiors Used to Transport Prisoners

All personnel assigned to cleaning the aircraft interior shall take special precautions to protect themselves from contaminates of this nature. They will take the following precautions:

(a)Wear vinyl or latex gloves.

(b)Wear disposable gowns, coveralls, or a wrap around apron with a chest bib that extends to the knees.

(c)Immediately wash with soap and water any skin surfaces contaminated by blood or body fluids. Use waterless antiseptic hand cleaner or antiseptic towelettes in the absence of soap and water until soap and water is available.

(d)After completing the cleaning of the interior, remove gloves and place in a biohazard-labelled bag. Wash hands thoroughly with soap and water, if available, or use a waterless antiseptic hand cleaner or antiseptic towelette until soap and water is available. Remove and dispose of gowns, coveralls, and/or aprons worn during the cleaning.

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(2)Procedures for Cleaning Known Blood and/or Body Fluid Spills

Special precautions shall be taken when cleaning areas where known blood and/or body fluid spills have occurred. The following procedures shall be used:

(a)If personnel have accidentally come into contact with blood and/or body fluids during the inspection process they shall immediately wash with soap and water any skin surfaces contaminated by blood or body fluids. Use a waterless antiseptic hand cleaner or antiseptic towelettes in the absence of soap and water until soap and water is available.

(b)Wear vinyl or latex gloves and disposable gowns, coveralls, or a wrap around apron with a chest bib that extends to the knees.

(c)Cordon off area of the spill to prevent the accidental spread of body fluids.

(d)Remove any large pieces of glass or other solid material, if present. Do not pick up material with hands. Use a plastic scoop to remove this matter. Place solid material in a puncture-resistant container. The scoop must dis-infected after use and placed in a clean place or if disposable is placed in a biohazard-labelled bag.

(e)Carefully remove the body fluids from the spill surface with disposable wipes. When the wipe is saturated, replace it with a new one. Do not wring out fluids. All soiled wipes are to be placed in the puncture-resistant container.

(f)Decontaminate the area with a bleach solution\* or a commercially prepared, Environmental Protection Agency approved solution specifically intended for clean up of blood and body fluid spills. This is done by starting 2 inches outside the spill and moving into the center of the spill by making a series of overlapping concentric circles with a wipe. The area is allowed to dry and the process is repeated. The soiled wipes are placed into the puncture-resistant container.

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

(g)Place all puncture resistant containers and material used in the cleanup in a biohazard-labelled bag until disposal occurs.

(h)Remove gloves and place in a biohazard-labelled bag. Wash hands thoroughly with soap and water, if available, or use a waterless antiseptic hand cleaner or antiseptic towelette until soap and water is available.

(i)Dispose of material in the waste container in accordance with applicable regulations.

**\***NOTE:The appropriate cleansing agent is a bleach and water mixture. Add 1/4 cup of bleach to 1 gallon of water. Do not mix ahead of time and store; the solution loses strength over time. Separate containers of bleach and water should be available for mixing at the time needed.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

17.FOREIGN OBJECT DAMAGE (FOD) PROGRAM.

A.GENERAL.

FOD inspections are a continuing process. Containers painted red and marked "FOD" shall be placed throughout the hangar and outside adjacent to pedestrian doorways. Maintenance personnel shall be constantly on lookout for material that could be ingested into engines, struck by propeller blades, and/or blown by the exhaust of engines or propellers causing injury to personnel and/or damage to aircraft.

B.RAMP INSPECTIONS

Maintenance personnel shall be assigned to perform a general inspection of hangar and ramp areas the first workday of each week to ensure all ramp areas used by the <Your Agency> are clean.

C.AIRCRAFT PROTECTION.

All aircraft in storage, including short term storage, or maintenance shall have openings covered with protective devices to ensure that FOD cannot enter these areas. Care will be taken to ensure all non-covered areas are also free of FOD. All covered areas shall be obviously marked to reduce the chance of aircraft operations with covers installed.

D.FOD AUDIT.

Facility FOD audits shall be conducted bi-weekly, or more often as conditions warrant, to ensure the hangars and equipment are maintained in an orderly fashion and free of FOD. Discrepancies (i.e., excessive nuts, bolts, lockwire, tools, cleaning materials, rocks, etc.) noted during these audits shall be documented in writing and given to the Supervisor of Maintenance for action.

NOTE: During winter months particular attention shall be paid to accumulations of ice/frozen moisture removed from the ramp area. Engine exhaust and propeller blasts can cause these to become airborne and injure personnel and/or damage aircraft.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

18.STORED AIRCRAFT PROGRAM.

A.GENERAL.

Stored aircraft shall be serviced and maintained in accordance with the following instructions and good maintenance practices:

(1)Clean aircraft and prepare it for storage.

(2)Wheel chocks shall be provided and installed.

(3)Control surface locks shall be installed.

(4)Landing gear lock pins shall be installed.

(5)Batteries shall be removed and stored in a charged condition.

(6)All toilet holding and water tanks shall be drained.

(7)Tires shall be inspected for condition and inflated to manufacturer's specifications on a weekly basis.

(8)Aircraft shall be de-fueled and the fuel system inspected.

(9)All fluid leads shall be contained with absorbent and/or drip pans.

(10)Preservation services accomplished in accordance with the manufacturer's procedures.

(11)Engines operated and aircraft taxied on a weekly basis.

(12)Aircraft logbooks shall be maintained and/or reconstructed.

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

19.FLY AWAY KITS.

Fly away kits may or may not be required. This decision is left to the aircraft commander and/or Supervisor of Maintenance. Special missions may require adding or deleting items from this list. Maintenance should anticipate the need for the following items being in the fly away kit:

Example:

A.BOEING 727

QTYITEM DESCRIPTIONTYPICAL P/N's

1Constant Speed Drive700842A

1Starter383152-1-2

1Generator (30-40 kva)10-61224-1

1Starter Valve392234-1-1, 392688-1-1, or 1060706-1

2Nose Tires3-1070

1Main Tire260456-1

2 casesSkydrol

3 casesEngine Oil

1ADI Indicator2587909-903

1HSI Indicator1783993-316

1RMI Indicator4147H-BW3-A-2-A

1AltimeterA41869-100-15

1EGT Indicator152BL702DLH

1Fuel Flow Indicator8DJ81LWX

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

Example: (contd.)

QTYITEM DESCRIPTIONTYPICAL P/N's

1N1 Indicator8DJ81LWM2

1N2 Indicator8DJ81LWN2

1Nav Unit2067593-2649

1Comm Unit522-4088-203

1F/F Power Supply8TJ80GAA1

1#1 INU

1#2 INU

1Ignition Unit42074

1Taxi Light Lamp4551

2Landing Light LampQ4559

2Turn Light Lamp4594

1Tach Generator2-2CM9ABY7

1ADF ReceiverDFA-73A-1

1EPR Transmitter10-60737-1

1Anti Ice Valve320115

1ATC ControlG 2137A

1Hydraulic Pump371380

Hose Kit

VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

Example: (contd.)

QTYITEM DESCRIPTIONTYPICAL P/N's

1Brake2601182-5

1CSD Service Cart

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VII. AIRCRAFT AND GROUND EQUIPMENT SERVICING

20.HANGAR MAINTENANCE.

**RESERVED**

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1.APPROVED PARTS CONTROL PROGRAM.

A.GENERAL.

Organizations providing maintenance support to the <Your Agency> shall have a procurement program to prevent purchasing unapproved parts and material in type certificated products. (Reference FAA Advisory Circular 21-29A, Detecting and Reporting Suspected Unapproved Parts) Their approved parts program shall include the following as a minimum:

(1)Methods to establish qualified suppliers who are authorized to manufacture or distribute parts they supply.

(2)Criteria to identify and screen potential unapproved parts suppliers. The criteria should include the following considerations:

(a)The quoted price or the price advertised in trade magazines is significantly lower than the price quoted by other suppliers of the same part.

(b)A delivery schedule that is significantly shorter than that of other suppliers of the same part when existing stocks are exhausted.

(c)The inability of a supplier to provide drawings, specifications, overhaul manuals, or substantiating data demonstrating the conformity of the part or parts repair/overhaul.

(d)The inability of a supplier or repair station (in the case of a repair or overhaul) to provide evidence of FAA approval for the part or repair station.

(e)Sales quotes or discussions that create the perception that an unlimited supply of parts, components, or material are available to the end user.

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(3)Procedures shall screen and identify suppliers of unapproved parts and prevent their acceptance. These procedures should include the following indicators:

(a)A procedure for receiving inspection activities that would help to detect unapproved parts. This procedure should include the following indicators:

(1)A visual inspection to determine if the product container is marked with another supplier's name, is unmarked, or damaged.

(2)A cross check of the purchase order with the delivery receipt for proper part number or component history card.

(3)A means of ensuring the shelf life has not expired.

(4)A means of verifying that part identification requirements have been met (e.g. serial number stamped over, label is improper or missing, vibro-etch or serial numbers located at other than the normal location).

(5)A means of determining evidence of visual defects or abnormalities ( e.g. altered or unusual surface, absence of required plating, evidence of prior usage, scratches, new paint over old, attempted exterior repair, pitting or corrosion).

(6)A sampling plan that is adjusted (tightened or loosened) to match individual part types and quantities, i.e., bolts, nuts, or other standard hardware packaged in large quantities in a single container.

(b)Supplier audit procedures shall be established to conduct audits or suppliers on a scheduled basis, to ensure that suppliers have established and continue to maintain the quality system specified in purchase orders. The following are examples of subsystems that should be included in an audit program:

(1)Design Data Control, to include latest revision, if applicable.

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(2)Supplier Control.

(3)Manufacturing/Assembly Control.

(4)Tool and Gauge Control.

(5)Tests and Inspections.

(6)Records.

NOTE:Additional information and guidance on supplier audits may be obtained from Advisory Circular (AC) 21-20, Supplier Surveillance Procedures.

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2.ACQUISITION OF AIRCRAFT PARTS.

A.GENERAL.

(1)All <Your Agency> aircraft must be maintained in a condition for safe operation and meet their respective type certificate and/or properly altered condition.

(2)FAR, Part 43, section 43.13(b) specifies, "Each person maintaining or altering, or performing preventive maintenance shall do that work in such a manner, and use materials of such quality that the condition of the product or appliance worked on will be at least equal to its original or properly altered condition.

(3)To meet requirements (1) and (2) above, all aircraft parts and materials ordered and received must:

(a)Be the part or material as specified by the aircraft's manufacturer's illustrated parts listing or FAA approved equivalent.

(b)Be an FAA approved Aeronautical part or material.

(c)Be procured from reliable sources and have proper documentation of their source of origin.

(d)Have an incoming receiving inspection performed.

B.DEFINITIONS.

(1)Blanket Purchase Agreement (BPA): A negotiated agreement between a manufacturer or supplier and the <Your Agency> for the acquisition or unit exchange of parts/material.

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(2)<Your Agency> controlled stock items are the sole responsibility and accountability of the <Your Agency> for these item's serviceability, stocking requirements, and their control management.

C.OBTAINING CORRECT PARTS.

To aid in obtaining the correct part in a timely and efficient manner, maintenance facilities/organizations when ordering aeronautical parts, material, or equipment shall:

(1)Order either the manufacturer's preferred part number or an approved alternate part number that is listed in the manufacturer's Illustrated Parts Manual.

(2)Provide the complete nomenclature of the item as shown in the parts catalog (do not abbreviate).

(3)Identify the manufacturer(s) name, vendor code(s), specific manual, chapter, page number, figure and index reference number, and any other information that may be pertinent.

(4)Specify special handling or packaging requirements. This information is especially important when ordering items such as charged nitrogen, fire bottles, explosives, corrosive items, or extremely sensitive equipment. Hazardous material should be properly marked and labeled for identification.

(5)Provide the National Stock Number (NSN) when applicable. If NSN includes more part numbers than the acceptable part number(s) in its listing, order shall state "no substitute part number(s) acceptable".

D.ORDERING PROCEDURES.

(1)During normal usage hours orders will be processed according to <Your Agency> policies and procedures.

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(2)During other than normal usage hours, ordering may be done telephonically directly to the supplier if a priority exists to return the equipment to service. Only high priority parts/material will be ordered in this manner.

(3)Blanket Purchase Agreements (BPA) with suppliers will be the responsibility of the <Your Agency> for the administration of each agreement in the acquisition of parts/material when it is used.

(4)Maintenance facilities/organizations that have authorization to buy parts and supplies for the maintenance of <Your Agency> aircraft will be responsible to see that all purchases are made in accordance with applicable laws and regulations.

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3.RECEIVING INSPECTIONS.

A.DEFINITION OF TERMS.

(1)**Stock Material:** New and/or overhauled serviceable aircraft parts and materials that are delivered to the <Your Agency> Hangar for storage.

(2)**Direct Shipped:** Parts, materials, and components from vendors/suppliers that are direct shipped to the maintenance organization that ordered them.

(3)**Telephonic Orders:** All parts, materials, and components ordered by <Your Agency> maintenance personnel from commercial vendors when not in stock and delivered for use.

(4)**Technical Inspection:** Items received from vendors/suppliers that require an operational or bench check before they are placed into serviceable stock.

(5)**New:** Unused aircraft parts, materials, and components that are manufactured under an FAA approved production system are as follows:

(a)Type Certificate - Parts, components, and material produced under an Approved Production Inspection System (APIS).

(b)Production Certificate - Parts, components, and material produced under an Approved Quality Control System.

(c)Technical Standard Order - Parts and appliances produced under an Approved Quality Control System.

(d)Parts Manufacturer Approval - Parts produced under an approved fabrication inspection system.

(6)**Repaired/Overhauled:** A used or out-of-shelf-life part or component returned to a serviceable condition.

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B.CERTIFICATION DOCUMENTATION

Documentation must be provided by the prime manufacturer or an authorized supplier of the prime manufacturer (vendor/supplier), to show traceability to the prime manufacturer and/or to the certificated repair station that repaired the item. This documentation must be in the form and content described below:

(1)All repaired/overhauled parts or components received from any source must have one of the following:

(a)A properly executed FAA Form 337, Major Repair or Alteration Data, or

(b)A certificated repair station's return for service tag, signed by an authorized individual identifying the part; and

(c)A work order document identifying the part/component, and a description of work accomplished.

(2)New material, parts, or components acquired from the prime manufacturer or authorized supplier of the prime manufacturer must have one of the following documents:

(a)A shipping invoice from the prime manufacturer to the FAA that identifies the item, or

(b)The manufacturer's serviceable parts tag, or

(c)A certificate of conformance signed by an authorized representative of the prime manufacturer, or

(d)A copy of the authorization from the prime manufacturer authorizing direct ship to the end user, or

(e)A properly executed Maintenance Release, or

(f)Any other document reflecting traceability of the item to the prime manufacturer.

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(3)New material, parts, or components acquired from a vendor/supplier other than the prime manufacturer, must have one of the following:

(a)The prime manufacturer's serviceable parts tag, or

(b)A copy of the original shipping invoice from the prime manufacturer to the vendor/ supplier and a copy of the vendor/supplier shipping invoice to the <Your Agency>, or

(c)A certificate of conformance signed by an authorized representative of the prime manufacturer and a copy of the vendor/supplier shipping invoice to the <Your Agency>.

**NOTE:** Certificate of conformance signed by a vendor/supplier is not acceptable.

(4)New parts acquired from active military stock must have the same documentation required by paragraphs B.(2) or B.(3). If this documentation is not available, the part must be processed through a certificated repair station to establish conformance to type design, and compliance to all current airworthiness directives or returned to the source of purchase.

(5)New surplus parts from a commercial source may be accepted provided interchangeability, applicable airworthiness directive compliance, storage times and conditions, and shelf life can be established. Documentation criteria will be the same as that required for new parts.

(6)All common hardware (AN, MS, NAS, etc.), gaskets, "O" rings, clamps, hoses, and other similar expendable materials acquired from known reliable vendors/suppliers may be accepted, without documents traceable to the original manufacturer, provided they are properly identified by markings on the item or on the packaging. The vendor's invoice or packing slip may be used as the documentation for these items.

**NOTE:** Expendable items mentioned, acquired from military stock, are acceptable if they are properly identified by part number and packaged. Documentation will be the DOD/DLA shipping invoice. Identification by Federal Stock Number only is not acceptable.

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(7)All parts materials and appliances received, which are manufactured in a foreign country with which the U.S. has a bilateral agreement, must have an export airworthiness approval issued by the country of manufacture (Ref. FAR 21.501), attached to the part, material, or appliance.

(8)Used aircraft parts, components, or materials will not be accepted into serviceable stock, unless serviceability/airworthiness, and useful time remaining can be established.

C.INCOMING RECEIVING INSPECTION PROCEDURES.

(1)All incoming serviceable aircraft material, parts, or components will be placed in a secured area and inspected by a Quality Assurance Inspector (QAI) or designee.

(2)The QAI/Designee will perform and accomplish the following:

(a)Ensure the part number ordered matches the part received.

**NOTE:** If part received is not the same part number as ordered, justification must be received with the part to substantiate the substituted part number received.

(b)Ensure the part or material is in good condition and conforms to specifications and standards.

(c)Ensure the state of preservation, cure date, or storage limitations of items with a limited shelf or storage life are within limits.

(d)Ensure certification paperwork or data is correct for applicability and acceptance requirements as stated in paragraph E.(4).

**NOTE:** The QAI/Designee will not make determinations of compliance with Purchase Order clauses, other than those relative to airworthiness certification.

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(3)Rejected items will have discrepancies noted and attached to the items packing slip, and a rejection stamp placed on the incoming invoice. This stamp will contain the name of the person rejecting the item, date, and reason. These parts will be placed in the "Rejected Parts" storage area until serviceability is established.

(4)Accepted items will be indicated by the QAI stamp on the appropriate documents (maintenance release, work order, packing slip, etc.).

(5)The documents identified in item (4) above will be maintained as a permanent record of serviceable stock material inspection and will be filed after computer input (stock material program) by Stores personnel.

(6)All parts and materials which are, "Direct Shipped" to using activities will not have undergone the receiving inspection procedures described above. It is the responsibility of the using activity to perform the receiving inspection on all direct shipped parts. The inspection will consist of all requirements stated in C.(2).

D.INCOMPLETE OR MISSING DOCUMENTATION.

(1)On occasion components are received by the using activity with the serviceability documentation missing. When such parts or components are received and the aircraft is out of service "Aircraft on Ground" (AOG) the following procedures may be applied to preclude further flight delays.

(a)The Supervisor of Maintenance is responsible to contact the vendor of the part or component in question. This telephonic contact will be for the purpose of ascertaining availability of documentation to verify serviceability of the component.

(b)If serviceability can be verified and the necessary documentation either replaced or duplicated, the component may be installed and the aircraft returned to service pending arrival of the documentation.

(c)The Supervisor of Maintenance will document availability of the parts documentation on memo or "Record of Conversation", and provide a copy to maintenance personnel as approval for return to service.

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(d)Maintenance personnel may install the component and approve the aircraft for return to service.

(e)The aircraft may be operated for a period of time not to exceed five calendar days or 25 operating hours from the time the component was installed.

(f)If documentation has not been provided at completion of the NTE time frame, the component must be removed from service. The approving authority as shown in (c) above is responsible to ensure that the part or component is not operated beyond the NTE time without the proper documentation.

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4.STOCK LEVELS.

A.GENERAL.

The <Your Agency> requires a minimum level of certain items to maintain aircraft in serviceable condition. The items shall be stocked at the level indicated at all times. **(ICAP Comment: This is important to ensure that contractor has items on hand. This should be part of the "Statement of Work." Too much ground time results from contractor or in-house maintenance not having adequate stores program. Do not let contractor drive your agency; you drive the contractor.)**

B.MINIMUM STOCK LEVELS (Example)

(1)Tires(1)Tires(1)Tires

Boeing 727 Nose Tires-4 each

Boeing 727 Main Tires-8 each

Sabreliner Main Tires-16 each

Sabreliner Nose Tires-8 each

(2)Brakes

Boeing 727-6

Sabreliner-10

(3)Lights(3)Lights

Boeing 727, # 4551, Taxi Lamps-10 each

Boeing 727, # Q4557, Inboard Landing Lamps-10 each

Boeing 727, # Q4559, Outboard Landing Lamps-10 each

Sabreliner, # 4581, Landing Lamps-15 each

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5.GOVERNMENT FURNISHED PARTS (GFP)

A.GENERAL.

Transfer of aircraft within the U.S. Government is frequently accompanied with the transfer of spare parts and component inventories. These can represent significant investments. Additionally, Government aircraft utilize the same repair facilities and contractors to conserve funds and reduce inventory requirements.

Government furnished parts shall be used when available provided they are properly identified or the <Your Agency> Supervisor of Maintenance has concluded that the parts meet the criteria established in this Chapter and Chapter/Section III.8.F.

B.DEVIATIONS

The <Your Agency> mission requirements may dictate that parts be used where full documentation of GFP is not readily available or the part cannot be traced to it's original manufacturer. In these cases, the <Your Agency> Supervisor of Maintenance will follow the procedures established in Chapter/Section VIII.3.D of this manual.

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IX. SECURITY PROGRAMS

1.MAINTENANCE SECURITY PROGRAMS

A.GENERAL

Security is an essential element of the <Your Agency> Maintenance Program. Government property often becomes the target of sabotage for numerous reasons. At times government property presents a target of opportunity for groups attempting to gain visibility for their movement. Operations and servicing of its aircraft throughout the U.S. and foreign territories exposes <Your Agency> aircraft to environments that have varying degrees of security. Personnel performing maintenance on the <Your Agency> aircraft shall be aware of and look for any unusual conditions. If such conditions are found they should be reported immediately to the <Your Agency> Supervisor of Maintenance. Unusual conditions may be suspicious looking objects, signs of tampering, or intentionally inflicted damage to areas such as pitot static heads, primary structures, engine inlet or exhaust area, and damage to windows, as examples. **(ICAP COMMENT: Law Enforcement agencies may need to add additional guidelines due to additional requirements in this area.)**

B.<Your Agency> HANGAR SECURITY.

Routine security measures are imposed on personnel entering the <Your Agency> Hangar from the main entrance. Maintenance personnel should be vigilant to unauthorized vehicle or pedestrian traffic and aircraft movements on the <Your Agency> Hangar Ramp. Any unusual movements should be immediately reported to the <Your Agency> Supervisor of Maintenance.

C.MAINTENANCE ON <Your Agency> EQUIPMENT AWAY FROM HOME BASE.

Personnel, including contractors, performing servicing and maintenance on <Your Agency> aircraft away from the <Your Agency> Hangar are expected to provide the same level of security for aircraft and equipment (see Section A, General, above) as is provided at the <Your Agency> Hangar in <Location>.

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IX. SECURITY PROGRAMS

2.BOMB THREATS

A.GENERAL

Any employee receiving or learning of a bomb threat or other sabotage threat to an aircraft, hangar, ramp, ground support equipment, or any property belonging to the <Your Agency> will immediately notify their supervisor who will advise the Chief, Air Operations Division, giving complete information as to the threat. The supervisor will then advise all personnel of the threat and any action directed by the <Your Agency Aviation Title>.

If the threat concerns a specific aircraft or flight, the supervisor, upon approval by the <Your Agency Aviation Title>, will notify the Air Traffic Control Tower of the threat.

B.POLICY.

<Your Agency> maintenance employees, including contractors providing maintenance support to the <Your Agency>, shall cooperate fully with the FBI (which is responsible for investigating bomb threats), the local police, and the FAA.

<Your Agency> will assist in any way possible in the prosecution of violators of federal laws, by cooperating with the federal authorities to the fullest. Contractors, too, are expected to cooperate fully with the investigation and prosecution of these violators.

C.EMPLOYEE PROCEDURES.

If a <Your Agency> employee, or employee of a <Your Agency> maintenance contractor, receives a telephone call regarding a bomb being aboard or threatened to be placed aboard an aircraft, or in the vicinity of any <Your Agency> aircraft, hangar, ramp, ground support equipment, or any property belonging to the <Your Agency> they will:

(1)Signal another person in the office to call the telephone company to have the call traced.

(2)Question the caller, using a number of questions that have been designed by AOD Security to aid in prolonging any threat call in an attempt to trace the call, identify the caller, and to determine valuable response information for us by authorities. (Reference Chapter/Section IV.2.I, form <Your Agency> GMM BTQ)

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(3)Obtain as much information as possible and take exact notes. Be alert for accents, background noises and any indication that the caller is a juvenile, intoxicated, mentally disturbed, or unusually familiar with the operation and schedule of the <Your Agency Aviation Title>.

(4)Immediately notify their supervisor who will advise the Chief, AOD, giving complete information as to the threat received and action taken to this point.

(5)Immediately report their actions in a written statement, including all statements made by the caller verbatim, if possible. This report should be forwarded to the Chief, <Your Agency Aviation Title>, through proper channels as soon as possible.

Questionnaires should be available for ready use in each office where calls are received from the public.

Questions should be spaced so as to enable the caller's responses to be written in the appropriate area. Supervisors are responsible for maintaining the questionnaire in sufficient quantity to satisfy local needs.

D.BOMB THREAT SEARCH AND INSPECTION.

When a bomb threat search is to be conducted on any aircraft, hangar, ramp, ground support equipment, or any property belonging to the <Your Agency>, maintenance personnel will assist when requested by the <Your Agency> person in charge. The search will normally be conducted in accordance with the following procedures:

(1)Appropriate measures will be taken to clear the danger area of personnel. The passengers will be evacuated from the aircraft. All personnel in the vicinity of the Hangar or equipment being threatened will be evacuated. If the aircraft is in the <Your Agency> Hangar the passengers and other personnel will be removed from the Hangar. If the aircraft is airborne the passengers will be deplaned at the direction of the Pilot-in-Command . If the aircraft is taxiing but not airborne, the Pilot-in-Command will issue instructions for evacuating the aircraft, which may involve emergency evacuation and the removal of any onboard personal items.

(2)The local FBI, FAA, and Airport Manager will be notified by the most expeditious means. When direct contact with these individuals is not possible, the Pilot-in-Command will advise Air Traffic Control and ask their assistance.

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(3)The aircraft or ground equipment will be located to a remote area as directed by the Airport Manager or <Your Agency> person in charge.

(4)If passengers are involved they may be moved to a search area.

(5)Cargo aboard the aircraft may be removed.

(6)A complete search of the aircraft threatened will be conducted. Assistance from experts will be requested to handle and dispose of any bomb or suspected bomb found.

**UNDER NO CIRCUMSTANCES WILL ANY SUSPICIOUS OBJECT OR BOMB BE TOUCHED, HANDLED, OR DISTURBED IN ANY MANNER BY ANY MAINTENANCE EMPLOYEE, CONTRACTOR OR OTHERWISE.**

(7)If no bomb is found in the luggage, cargo, or any other area and circumstances are such that a bomb could have been hidden within the aircraft itself, a maintenance inspection may be performed in accordance with the Bomb Threat Inspection form (Reference Chapter/Section IV.2.J, form <Your Agency> GMM BTI). The <Your Agency> person in charge will direct maintenance to perform the inspection, if required.

Maintenance personnel will provide support to the bomb threat inspection team as directed by the <Your Agency> person in charge.

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