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**PROGRAM RULES**

**1. General Program Rules**

The purpose of the following general program rules is to provide standard guidelines common to the avionics, systems, powerplant, structures, zonal and L/HIRF maintenance programs.

- A. Performance of the required tasks will be in accordance with the instructions for continued airworthiness (Maintenance Manual, NDT Manual, etc.) for the Challenger 300® aircraft.
- B. It is the responsibility of each operator to adjust their own maintenance program in accordance with their national requirements.
- C. An operator may elect to follow this approved maintenance program or develop variations with approval of the operator's regulatory authority.

The scheduled maintenance program has been developed through careful analysis of airworthiness and economic aspects. Before seeking local regulatory authority approval of changes to the tasks and intervals prescribed, an operator should carefully consider the potential effect of each change on safety and reliability. When in doubt about the effect of any change, the operator should seek the advice of Bombardier Business Aviation Services, Maintenance Programs Engineering.

- D. Maintenance requirements of supplemental installations made by agencies other than the manufacturer must be established by the operator and/or that agency in accordance with the Challenger 300® Completion Center Handbook and with the applicable regulatory authority.
- E. Inspection intervals are given in either flight hours (H), months (M), landings (L), engine hours (Eng H) and also component hours (e.g. APU H).

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- F. The MRB Report for the Challenger 300® is based on an average aircraft utilization of 600 flight hours, 333 flight cycles (landings) within 12 months (calendar) time. Operators whose aircraft utilization differs significantly from these parameters will need to re-evaluate the intervals in this report with their local regulatory authority.
- G. Operators are responsible for maintaining accurate records of all the inspection intervals.
- H. Revisions to the MRB Report, which introduce new tasks or change existing tasks, must be evaluated for incorporation into an operator's maintenance program. Incorporation (where required) should be at the earliest opportunity, but no later than the next scheduled inspection interval for that task.
- I. Task interval parameters expressed in the MRB report may be converted to an individual operator's desired units, provided this conversion does not result in the operator exceeding the initial requirements of the MRB report.
- J. Within this report, the terms "check" and "inspection" are not intended to imply a level of skill required to accomplish a task.
- K. Life-limited parts must be retired in accordance with the limits established in the engine or aircraft Type Certificate Data Sheets (TCDS) or the airworthiness limitations section of the engine or aircraft manufacturer's instructions for continued airworthiness.
- L. Each operator shall comply with existing rules with respect to reporting to their airworthiness authority and to the manufacturer, events having effects on the continued airworthiness of the aircraft.
- M. The individual check intervals listed in this report may be escalated following the completion of the required series or sequence of checks and the satisfactory review of check results and approval by the appropriate regulator authority, or in accordance with the operator's regulatory-approved reliability program.
- N. Individual task intervals may be escalated based on satisfactory substantiation by the operator, and review and approval by its appropriate regulatory authority, or in accordance with the operator's regulatory-approved reliability program.
- O. Service Bulletins may be referenced by number in this report for clarifying the procedural aspects of this program; however, they shall not be used for escalation purposes.

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P. The use of nondestructive inspection (NDI) methods, such as "X-Ray," "ultrasonic," "eddy current," and "radio isotope," which are approved by the manufacturer, can provide an alternative to the methods prescribed in this report. Each operator should notify its regulatory authority of the use of an acceptable alternative method.

Q. After the accumulation of industry service experience, the ISC or MRB Chairpersons may request changes to the requirements of this MRBR.

## 2. Program Rules – Avionics, Systems and Powerplant Program

The purpose of the following program rules is to provide standard guidelines common to the avionics, systems and powerplant maintenance programs.

A. MSG-3 (Revision 2) logic was used to develop an on-wing scheduled maintenance program. With the exception of life-limited parts, this process does not normally include detailed off-wing shop maintenance procedures. Off-wing detailed procedures are controlled by individual operators and are derived from the operator's reliability program or are in accordance with the manufacturer's instructions for continued airworthiness which are required by the regulations.

B. Not applicable to the MPD

## 3. Program Rules – Structure Program

The purpose of the following program rules is to provide standard guidelines to the structures inspection/maintenance program.

A. Not applicable to the MPD

B. The threshold is the time when the first inspection is due. It is indicated with a "T" in the Task Interval Column.

C. For repeat inspections, the interval commences at the time of the last inspection performed. It is indicated with a "R" in the Task Interval Column.

D. Normal cleaning procedures are to be used prior to Detailed Inspections and specified cleaning procedures prior to Special Detailed Inspections. Sealant and corrosion protection finishes should be removed only when specified.

E. Operators shall report all structural findings to the manufacturer.

F. Airworthiness Limitation Instructions

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Additional structural tasks for Principal Structural Elements (PSE) and safe-life structure are listed in section 5-10-30, Airworthiness Limitation Items (ALI), of this manual. ALI tasks refer to mandatory fixed intervals resulting from fatigue and damage tolerance analysis performed by Bombardier Structural Engineering in coordination with Transport Canada Engineering. The operator must consider both report (MRB/ALI) requirements when developing and maintaining their maintenance programs and shall not change the requirements without the approval of their regulatory authority (Engineering/Certification disciplines).

G. High Altitude Special Condition (HASC) Instructions

- (1) Additional scheduled structural inspection requirements for aircraft designed to fly above 41,000 feet are required to be accomplished. These high altitude special condition (HASC) tasks, derived from engineering analysis, are covered in this report by equivalent MSG-3 derived tasks.
- (2) Tasks marked as HASC tasks have a maximum interval of 3750 landings that cannot be exceeded or escalated. They are considered safety tasks. HASC tasks cannot be candidates for transfer to the Zonal Working Group.

H. All aircraft in an operator's or group of operator's fleet shall be subject to the provisions of this report. These requirements include external and internal inspections, structural sampling and age exploration programs, corrosion prevention and control programs, and additional supplemental structural inspections that may be required for fatigue-related items. A reliability program shall not be used to escalate the inspection interval, or delete the task, on any structural inspection item listed in the Airworthiness Limitations section. Initial check intervals for the structural inspection program are expressed in calendar time, flight cycles, or flight hours. No repeat inspection interval shall be escalated until at least one aircraft in an operator's or group of operator's fleet has been inspected within the initially defined interval listed in the MRBR.

I. Structural inspection limitations listed in the aircraft manufacturer's Airworthiness Limitations section will be referenced in the MRBR by document number.

J. Unless otherwise noted, it is understood that components/installations/liners/sealants are not required to be removed to perform the inspection.

**4. Program Rules – Zonal Inspection Program**

The purpose of the following program rules is to provide standard guidelines to the zonal maintenance program.

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- A. The zonal inspection program contains a series of GVI tasks. Detailed and special detailed inspections are not to be contained in the zonal inspection program. Zonal inspection requirements apply only to zones.
- B. Zones which contain systems/components/installations are assigned a zonal GVI task to be performed at specified intervals. Zones which contain no systems installations or which received adequate coverage from other maintenance or structural inspection tasks will not require the additional zonal inspection task.
- C. In addition to a GVI, the zonal inspection shall include, if required, a physical check (e.g. by touching) of the general condition and security of attachment of the accessible systems and structures items contained in the defined zone (components, wiring, plumbing, ducting, tubing, fittings, brackets, pulleys, bearings, fasteners, electrical bonding, etc.). This includes a check for evidence of degradation such as, chafing of tubing, paint deterioration, loose duct supports, wiring damage, cable and pulley wear, fluid leaks, inadequate drainage, cracks, etc. and corrosion, or damage which could lead to corrosion. It also includes a check of the general condition of any fairings, panels or other items which are removed/opened to gain access to a particular zone.
- D. Access to zones should be easily accomplished and should not require the use of special tools. Normally, the inspection aids to be used are a flashlight and/or inspection mirror. The entire visible contents of the zone must be inspected for obvious damage, security of installation, and general condition including corrosion and leaks.
- E. When necessary, seats, carpets, ceiling and wall trim panels including insulation are to be removed to access and complete an adequate GVI.

## 5. Program Rules – L/HIRF Inspection Program

The purpose of the following program rules is to provide standard guidelines for the L/HIRF maintenance program.

- A. During the performance of detailed inspection of L/HIRF protective devices, no connector or equipment is to be removed that would necessitate subsequent functional testing.
- B. For all wiring and termination points installed within heat shrink or other conduits, the defined detailed inspection will apply only to the heat shrink or conduit for integrity.

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- C. The L/HIRF maintenance program addresses only on-aircraft inspections of L/HIRF protective devices. However, specified LRUs may also incorporate, inside the equipment, additional protective devices. These internal devices will be subject to off-aircraft inspection and testing, on an opportunity basis, as per instructions contained within the LRU manufacturer's component maintenance manual.

## 6. Program Notes

The purpose of the general program notes that follow is to provide a source of information that can be referred to often throughout the Tasks and Intervals Tables in the avionics, systems, powerplant, structures, zonal and L/HIRF maintenance programs.

Note 1: Not Used

Note 2: Interval is as per vendor's recommendation as of TL/MC publication date.

Note 3: Task and interval may be part of the operator's national regulations. When a task has two intervals, one being "Note 3", the greater interval is recommended. When a national regulation does not exist, the MRB Report interval shall be followed.

Note 4: Discard at manufacturer's expiration date.

Note 5: Functional Test of the Fire Extinguisher Containers (Hydrostatic Test) will be accomplished in accordance with the operator's national requirements.

Note 6: At the next component access opportunity.

Note 9: This task is a HASC task and its initial accomplishment (Threshold) must be completed no later than 3750 landings, and subsequent accomplishment (Repeat) must be completed no later than 3750 landings from when the last inspection was done. (This number cannot be escalated).

Note 11: Not Used

Note 12: Main Wheel Inspection Interval

In accordance with Goodrich Corporation Component Maintenance Manual for Main Wheel Assembly P/N 3-1609-1 (CMM 32-48-28)

In case of discrepancy between this table and the wheel manufacturer's publication, the latter takes precedence.

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Inspection Frequency Based on Tire Changes		
Tire Change Number	Penetrant or Eddy Current Inspection	Penetrant Inspection of the Full Wheel Base and Side Rim
3, 6, 9, 12	X	
14, 16, 18	X	
20 and thereafter (At every third tire change)		X
21 and thereafter (at every tire change) Unless full wheel base and side rim penetrant inspection is completed	X	

Inspection Frequency Based on Time (If two years or more between tire changes)		
Years from Initial Installation / Date Wheel Manufactured	Penetrant or Eddy Current Inspection	Penetrant Inspection of the Full Wheel Halves
3, 6, 8	X	
10		X
12, 14	X	
16, 18, 20 (Every Even Year)		X
17, 19, 21 (Every Odd Year)	X	

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Note 13:      Nose Wheel Inspection Interval

In accordance with Goodrich Corporation Component  
Maintenance Manual for Nose Wheel Assembly  
P/N 3-1610-1 (CMM 32-48-29)

In case of discrepancy between this table and the wheel  
manufacturer's publication, the latter takes precedence.

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Inspection Frequency Based on Tire Changes		
Tire Change Number	Penetrant or Eddy Current Inspection	Penetrant Inspection of the Wheel Halves
5, 10, 15, 20	X	
23, 26, 29	X	
30 and thereafter (At every fifth tire change)		X
31 and thereafter (at every tire change) Unless wheel halves penetrant inspection is completed	X	

Inspection Frequency Based on Time (If two years or more between tire changes)		
Years from Initial Installation / Date Wheel Manufactured	Penetrant or Eddy Current Inspection	Penetrant Inspection of the Full Wheel Halves
3, 6, 8	X	
10		X
12, 14	X	
16, 18, 20 (Every Even Year)		X
17, 19, 21 (Every Odd Year)	X	

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Note 14      Functional Testing (Hydrostatic) and discard of the oxygen containers shall be accomplished in accordance with the operators national requirements.

**7. Allowable Inspection Tolerances**

The allowable Inspection Tolerances for Challenger 300 MRB scheduled inspection tasks are as follows: Inspections are defined as a group of tasks due at the same interval. The term “inspection” is used for maintenance planning purposes only.

NOTE:    These inspection tolerances do not apply to any Airworthiness Limitation inspection tasks in Part 2 of the Time Limits/Maintenance Checks manual and are subject to local regulatory authority approval. Inspection tolerances are not cumulative.

A.    Inspections controlled by calendar time may be accomplished within a period beginning one month before, and ending no later than one month after the inspection due date (see Figure 1).

B.    Inspections controlled by flight or APU hours may be accomplished within a period beginning 40 hours before, and ending no later than 40 hours after the inspection due time (see Figure 1).

C.    Inspections controlled by landings may be accomplished within a period beginning 40 landings before, and ending no later than 40 landings after the inspection due time (see Figure 1).

D.    A signed and dated record must be prepared and maintained as each inspection task is completed. When the last task of an inspection has been completed, the inspection as a whole to be signed off in the appropriate Log Book / Maintenance Record at the time that inspection was completed.

E.    After completion of an inspection, the next due time shall be at the scheduled time, date or cycle as calculated from the DUE TIME of the last completed inspection, not from the point of completion of the last task in that inspection.

F.    If an inspection is done early (before the start time, date, or landings of the inspection envelope), the next scheduled due time for that inspection must be calculated from the point of early completion.

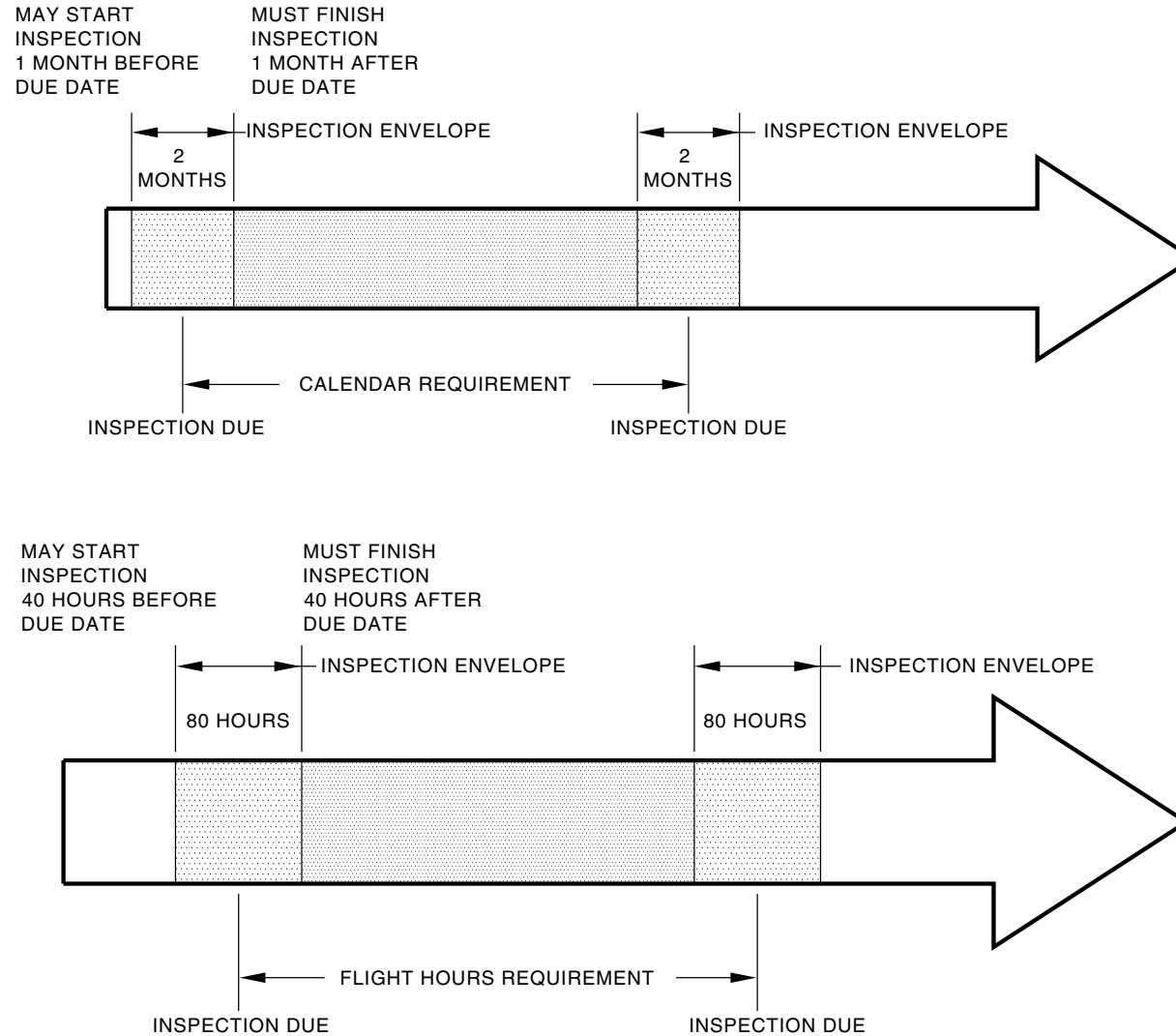
G.    If a task is done early (before the start time, date, or landings of the inspection envelope), that task is next due as calculated from the point when the task was done early.

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Allowable Inspection Tolerances  
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