### TRANSNORTHERN AVIATION

LIMITED LIABILITY COMPANY

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### MINIMUM EQUIPMENT LIST

DOUGLAS Super DC-3 R4D-8 R4D-8Z

> Serial Numbers Applicable 43159 - 43354 - 43302 - 43332

APPROVED FAA-AAL-FSDO-03				
Principal Operations Inspector	Date	Operator Acceptance	Date	_

This MEL has been compiled from, and is no less restrictive than the Master Minimum Equipment List, Revision 6a, dated 11/14/2000 that is provided by the FAA.

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**Date:** 05/15/2009

II

#### LOG OF REVISIONS

Rev.#	Date	Page Numers	Initials
Orig	03/01/02	All Pages	AGL
One	1/23/04	All Pages	AGL
Two	6/15/07	All Pages	AGL
Three	5/5/08	All Pages	AGL
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#### **CONTROL PAGE**

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This MEL has been compiled from, and is no less restrictive than, the Master Minimum Equipment List, Revision 6a, dated 11/14/2000, provided by the FAA.

APPROVED FAA-AAL-FSDO-03			
Principal Operations Inspector	Date	Operator Acceptance	Date

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#### **HIGH LIGHTS OF CHANGES**

- Change ONE added Super DC-3 S/N 43159 to the list of effective aircraft covered by this MEL
- Change TWO Deleted S/N 43301 and Added S/N 43354 to the list of effective aircraft covered by this MEL
- Change THREE added Douglas R4D-8Z -- S/N 43302 to the list of effective aircraft covered by this MEL
- Change FOUR
  - o added Douglas R4D-8 -- S/N 43332 to the list of effective aircraft covered by this MEL
  - o changed Company Address on Cover Page

## TRANSNORTHERN AVIATION MINIMUM EQUIPMENT LIST Aircraft: Revision: Four Page: Douglas DC-3S, R4D-8 & R4D-8Z S/Ns: 43159, 43332, 43354, 43302 Date: 05/15/2009 V

#### **DEFINITIONS**

1. System Definitions.

System numbers are based on the Air Transport Association (ATA) Specification Number 100 and items are numbered sequentially.

- a. "Item" (Column 1) means the equipment, system, component, or function listed in the "Item" column.
- b. "Number Installed" (Column 2) is the number (quantity) of items normally installed in the aircraft. This number represents the aircraft configuration considered in developing this MMEL. Should the number be a variable (e.g., passenger cabin items) a number is not required.
- c. "Number Required for Dispatch" (Column 3) is the minimum number (quantity) of items required for operation provided the conditions specified in Column 4 are met.

**NOTE:** Where the MMEL shows a variable number required for dispatch, the MEL must reflect the actual number required for dispatch or an alternate means of configuration control approved by the Administrator.

- d. "Remarks or Exceptions" (Column 4) in this column includes a statement either prohibiting or permitting operation with a specific number of items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes.
- e. A vertical bar (change bar) in the margin indicates a change, addition or deletion in the adjacent text for the current revision of that page only. The change bar is dropped at the next revision of that page.
- 2. "Airplane/Rotorcraft Flight Manual" (AFM/RFM) is the document required for type certification and approved by the responsible FAA Aircraft Certification Office. The FAA approved AFM/RFM for the specific aircraft is listed on the applicable Type Certificate Data Sheet.
- 3. "As required by FAR" means that the listed item is subject to certain provisions (restrictive or permissive) expressed in the Federal Aviation Regulations operating rules. The number of items required by the FAR must be operative. When the listed item is not required by FAR it may be inoperative for time specified by repair category.
- 4. Each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition.

**NOTE:** To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified, placard wording and location will be determined by the operator.

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- 5. "-" symbol in Column 2 and/or Column 3 indicates a variable number (quantity) of the item installed.
- 6. "Deleted" in the remarks column after a sequence item indicates that the item was previously listed but is now required to be operative if installed in the aircraft.
- 7. "ER" refers to extended range operations of a two-engine airplane that has a type design approval for ER operations and complies with the provisions of Advisory Circular 120-42.
- 8. "Federal Aviation Regulations" (FAR) means the applicable portions of the Federal Aviation Act and Federal Aviation Regulations.
- 9. "Flight Day" means a 24 hour period (from midnight to midnight) either Universal Coordinated Time (UCT) or local time, as established by the operator, during which at least one flight is initiated for the affected aircraft.
- 10. "Icing Conditions" means an atmospheric environment that may cause ice to form on the aircraft or in the engine(s).
- 11. Alphabetical symbol in Column 4 indicates a proviso (condition or limitation) that must be complied with for operation with the listed item inoperative.
- 12. "Inoperative" means a system and/or component malfunction to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limit(s) or tolerance(s).
- 13. "Notes:" in Column 4 provides additional information for crewmember or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve the operator of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.
- 14. Inoperative components of an inoperative system: Inoperative items which are components of a system which is inoperative are usually considered components directly associated with and having no other function than to support that system. (Warning/caution systems associated with the inoperative system must be operative unless relief is specifically authorized per the MMEL).
- 15. "(M)" symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorized to perform certain functions. Procedures requiring specialized knowledge or skill, or requiring the use of tools or test equipment should be accomplished by maintenance personnel. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.

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16. "(O)" symbol indicates a requirement for a specific operations procedure that must be accomplished in planning for and/or operating with the listed item inoperative. Normally these procedures are accomplished by the flight crew; however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL.

**NOTE:** The (M) and (O) symbols are required in the operator's MEL unless otherwise authorized by the Administrator.

- 17. "Deactivated" and "Secured" means that the specified component must be put into an acceptable condition for safe flight. An acceptable method of securing or deactivating will be established by the operator.
- 18. "Visual Flight Rules" (VFR) is as defined in FAR Part 91. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.
- 19. "Visual Meteorological Conditions" (VMC) means the atmospheric environment is such that would allow a flight to proceed under the visual flight rules applicable to the flight. This does not preclude operating under Instrument Flight Rules.
- 20. "Visible Moisture" means an atmospheric environment containing water in any form that can be seen in natural or artificial light; for example, clouds, fog, rain, sleet, hail, or snow.
- 21. "Passenger Convenience Items" means those items related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, ash trays, stereo equipment, overhead reading lamps, etc.
- 22. Repair Intervals: All users of an MEL approved under FAR 121, 125, 129 and 135 must effect repairs of inoperative systems or components, deferred in accordance with the MEL, at or prior to the repair times established by the following letter designators:
  - **Category A.** Items in this category shall be repaired within the time interval specified in the remarks column of the operator's approved MEL.
  - **Category B.** Items in this category shall be repaired within three (3) consecutive calendar days (72 hours), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the three day interval would begin at midnight the 26th and end at midnight the 29th.
  - **Category C.** Items in this category shall be repaired within ten (10) consecutive calendar days (240 hours), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it were recorded at 10 a.m. on

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January 26th, the 10-day interval would begin at midnight the 26th and end at midnight February 5th.

**Category D.** Items in this category shall be repaired within one hundred and twenty (120) consecutive calendar days (2880 hours), excluding the day the malfunction was recorded in the aircraft maintenance log and/or record.

The letter designators are inserted adjacent to Column 2.

- 23. Electronic fault alerting system General. New generation aircraft display system fault indications to the flight crew by use of computerized display systems. *This type of display is not applicable to the DC-3 Series Aircraft.*
- 24. "Administrative control item" means an item listed by the operator in the MEL for tracking and informational purposes. It may be added to an operator's MEL by approval of the Principal Operations Inspector provided no relief is granted, or provided conditions and limitations are contained in an approved document (i.e. Structural Repair Manual, airworthiness directive, etc.). If relief other than that granted by an approved document is sought for an administrative control item, a request must be submitted to the Administrator. If the request results in review and approval by the FOEB, the item becomes an MMEL item rather than an administrative control item.
- 25. "\*\*\*" symbol in Column 1 indicates an item which is not required by regulation but which may have been installed on some models of aircraft covered by this MMEL. This item may be included on the operator's MEL after the approving office has determined that the item has been installed on one or more of the operator's aircraft. The symbol, however, shall not be carried forward into the operator's MEL. It should be noted that neither this policy nor the use of this symbol provide authority to install or remove an item from an aircraft.
- 26. "Excess Items" means those items that have been installed that are redundant to the requirements of the FARs.
- 27. "Day of Discovery" is the calendar day an equipment/instrument malfunction was recorded in the aircraft maintenance log and or record. This day is excluded from the calendar days or flight days specified in the MMEL for the repair of an inoperative item of equipment. This provision is applicable to all MMEL items, i.e., categories "A, B, C, D".

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### FEDERAL AVIATION ADMINISTRATION Revision: 2 MASTER MINIMUM EQUIPMENT LIST Date: 06/14/89

#### DC3 SERIES

Preamble (Effective 6/14/89)

The following is applicable for authorized certificate holders operating under Federal Aviation Regulations (FAR) Parts 121, 125, 129, 135: The FAR require that all equipment installed on an aircraft in compliance with the Airworthiness Standards and the Operating Rules must be operative. However, the Rules also permit the publication of a Minimum Equipment List (MEL) where compliance with certain equipment requirements is not necessary in the interests of safety under all operating conditions. Experience has shown that with the various levels of redundancy designed into aircraft, operation of every system or installed component may not be necessary when the remaining operative equipment can provide an acceptable level of safety. A Master Minimum Equipment List (MMEL) is developed by the FAA, with participation by the aviation industry, to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The FAA approved MMEL includes those items of equipment related to airworthiness and operating regulations and other items of equipment which the Administrator finds may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations; it does not contain obviously required items such as wings, flaps, and rudders. The MMEL is the basis for development of individual operator MELs which take into consideration the operator's particular aircraft equipment configuration and operational conditions. Operator MELs, for administrative control, may include items not contained in the MMEL; however, relief for administrative control items must be approved by the Administrator. An operator's MEL may differ in format from the MMEL, but cannot be less restrictive than the MMEL. The individual operator's MEL, when approved and authorized, permits operation of the aircraft with inoperative equipment.

Equipment not required by the operation being conducted and equipment in excess of FAR requirements are included in the MEL with appropriate conditions and limitations. The MEL must not deviate from the Aircraft Flight Manual Limitations, Emergency Procedures or with Airworthiness Directives. It is important to remember that all equipment related to the airworthiness and the operating regulations of the aircraft not listed on the MMEL must be operative.

Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures and other restrictions as necessary are specified in the MEL to ensure that an acceptable level of safety is maintained.

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The MEL is intended to permit operation with inoperative items of equipment for a period of time until repairs can be accomplished. It is important that repairs be accomplished at the earliest opportunity. In order to maintain an acceptable level of safety and reliability the MMEL establishes limitations on the duration of and conditions for operation with inoperative equipment. The MEL provides for release of the aircraft for flight with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the Aircraft Maintenance Record/Logbook as prescribed by FAR. The item is then either repaired or may be deferred per the MEL or other approved means acceptable to the Administrator prior to further operation. MEL conditions and limitations do not relieve the operator from determining that the aircraft is in condition for safe operation with items of equipment inoperative.

When these requirements are met, an Airworthiness Release, Aircraft Maintenance Record/Logbook entry, or other approved documentation is issued as prescribed by FAR. Such documentation is required prior to operation with any item of equipment inoperative.

Operators are responsible for exercising the necessary operational control to ensure that an acceptable level of safety is maintained. When operating with multiple inoperative items, the interrelationships between those items and the effect on aircraft operation and crew workload will be considered.

Operators are to establish a controlled and sound repair program including the parts, personnel, facilities, procedures, and schedules to ensure timely repair.

WHEN USING THE MEL, COMPLIANCE WITH THE STATED INTENT OF THE PREAMBLE, DEFINITIONS, AND THE CONDITIONS AND LIMITATIONS SPECIFIED IN THE MEL IS REQUIRED.

# TRANSNORTHERN AVIATION MINIMUM EQUIPMENT LIST Aircraft: Revision: Four Page: Douglas DC-3S, R4D-8 & R4D-8Z S/Ns: 43159, 43332, 43354, 43302 Date: 05/15/2009 XI

#### **COMPANY PROCEDURES**

In the metal box for the aircraft is a supply of "Aircraft Flight Log' sheets in the form of a bound volume and a supply of 1/2 X 3/4 inch bright yellow stickers.

The 'Aircraft Flight Log' is utilized to record aircraft discrepancies of any nature. Discrepancies that are not found on the following pages of this MEL prohibit flight until corrected per Company Operations Manual. Discrepancies that are listed on the following pages may be deferred as per specific instructions found herein.

It is imperative that the Pilot is completely familiar with all portions of this document before MELing any discrepancy.

#### Procedure for MELing an item:

- 1. Locate the item on the following pages. Enter the MEL number, the Repair Interval in "<>" and the day the discrepancy was noted on the 'Aircraft Flight Log'. [Example: an inoperable CHT would be recorded in the discrepancy section as "MEL77-2 <B> 10/17/98".
- 2. Note the same information on the 1/2 X 3/4 self-adhesive sticker and place it on or immediately beside the inoperative component or it's activating mechanism.
- 3. Any item with a "(M)" in the remarks column requires that a certified mechanic or other qualified employee perform the task listed the first time an item is Meled. Any company mechanic may perform this task. If a MELable discrepancy occurs where no company mechanic is available the pilot must notify the Director of Maintenance or his designee for instructions as how to proceed. The mechanic must sign the Corrective Action Column of the Aircraft Flight Log the first time the item is MELed (In addition to the entry specified above). The Pilot may sign off subsequent MELing of the same item until it is repaired.
- 4. Uncorrected discrepancies should be carried forward to the next flight log page. If uncorrected, the pilot, through the authority of the approved MEL, should enter the notation from the previous page deferring the item and: "Deferred <Letter designator repair interval>" in the "Corrective Action" column and continue operation of the Aircraft.
- 5. The pilot must assure that the TNA Director of Maintenance or his designee is made aware of the discrepancy at the earliest opportunity. Personal verbal notification is required... not a note or memo.
- 6. Any items deferred by MEL must be carried forward on each successive Log page until corrected by Maintenance. (Do NOT carry forward the 'Corrective Action' Notation.
- 7. The pilot is required before flight of an aircraft with uncorrected MEL items to assure that the "Repair Interval" as indicated by the Letter Designator of the MEL item has not been past. In the case of MEL items with in the "Repair Interval" the Pilot may enter "Deferred <Letter designator repair interval>" and continue operation of the aircraft. If the "Repair Interval" is past or the flight will cause the "Repair Interval" to be passed; the flight may not be dispatched until the item is corrected and appropriate signoff entered on the 'Aircraft Flight Log' page.

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#### **MEL Management Program**

At the termination of each flight during which a discrepancy is noted it must be (1) recorded on the Aircraft Flight Log Form and (2) the Director of Maintenance must be verbally notified via telephone or face to face. If the item can be MELed the Director of Maintenance (or his designee) must complete a "MELed Item Tracking Record" form. This form will be maintained on a clipboard on the Director of Maintenance's desk until the item has been replaced or repaired. The Director of Maintenance shall daily note the status of any uncorrected MELed items so as to assure timely scheduling of Maintenance or arrival of parts. If, For some unavoidable reason, the repair or replacement cannot be accomplished within the designated time interval by the approved MEL the Director of Maintenance may contact the FAA Principal Maintenance Inspector and requests an extension. This typically is accomplished by the Director of Maintenance submitting a FAX letter including the Item, Date of Discrepancy, and Reason for request of time extension to the Principal Maintenance Inspector and receiving a return copy via FAX with a singed note of Approval and Length of time extension from the Principal Maintenance Inspector.

**Note:** Pilots are not permitted to terminate a duty day if any discrepancies are "open" on a flight log without verbal notification of one of the following (in order of preference): The Director of Maintenance, The Director of Operations, The Chief Pilot or the General Manager.

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5/113. 43137, 43.	, 13	,551,	13302	23 1
System &	1.	2. 1	NUMB	ER INSTALLED
SYSTEM & SEQUENCE ITEM NUMBER			3. 1	NUMBER REQUIRED FOR DISPATCH
23 COMMUNICATIONS				4. REMARKS OR EXCEPTIONS
Flight Deck Speakers	C	2	0	*May be inoperative provided headphones are used.
2. Public Address System	A	-	0	Not required for operations of 19 or less passenger configurations
				<b>Note:</b> May be inoperative or uninstalled for all cargo operations.
3. Communications Systems (VHF, HF, UHF)	C	2	1	One VHF may be inoperative provided:
(VIII <sup>4</sup> , III <sup>4</sup> , OIII <sup>4</sup> )				a) The aircraft is not operated in instrument flight conditions.
	C	2	0	Both VHF may be inoperative provided:
				<ul> <li>a) The aircraft is not operated in Class E</li></ul>
	C	-	0	HF installed in N28TN only. May be inop. if Long Range Communications is not reqd.

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Douglas DC-3S, R4D-8 & R4D-8Z S/Ns: 43159, 43332, 43354, 43302			<b>Date:</b> 05/05/2008	25-1		
	1.	2. Number Installed				
SYSTEM &						

1.	2. 1	Numbi	ER INSTALLED
SYSTEM & SEQUENCE ITEM NUMBER		3. N	NUMBER REQUIRED FOR DISPATCH
25 EQUIPMENT/FURNISHINGS			4. REMARKS OR EXCEPTIONS
"FASTEN SEAT BELT C     WHILE SEATED" Signs     and Placards	-	-	*One or more signs or placards may be illegible or missing provided a legible sign is readable from each occupied passenger seat.
2. Passenger Convenience Items	-	-	*Passenger convenience items, as expressed in this MEL, are those related to passenger convenience, comfort, or entertainment such as, but not limited to, galley equipment, ash trays, stereo equipment, overhead reading lamps, etc. Items addressed elsewhere in this document shall not be included.
			(O) Any items in this category must be clearly labeled to alert passengers with wording such as - "INOPERTIVE – DO NOT USE".
3. Forward Observer Seat A	-	0	*May be inoperative provided:  a) A Passenger Seat in the passenger Cabin is made available to an FAA inspector for the performance of official duties, AND
			b) Seat is repaired in not more than two Flight days.
4. Passenger Seats C	-	0	*(M) May be inoperative provided:  a) Affected seat does not block Emergency egress to an aisle or exit, AND

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	1 2 NUMBER INCTALLER						

SYSTEM & SEQUENCE	ITEM		3 1	NIMBED DECLUD	ED FOR DISPATCH	
NUMBER	HEM		3. 1	NUMBER REQUIR	ED FOR DISPATCH	
	T/FURNISHINGS			4. REMARKS (	OR EXCEPTIONS	
Passenger Seat	s – Continued				ted seat is blocked an	d placar
				NOTE 1:	A seat with an Seat Lap Belt is cobe inoperative.	
				NOTE 2:	A seat with an Recline mecha considered to be in the seat cannot be the upright position	nnism noperative secured
				NOTE 3:	Inoperative seats defined number Attendants required	of Fl
5. Emergency Transmitter		C 1	0	a) School car b) Tr wi ain c) W ca d) W reg fo lo	operative for: neduled flights by soriers. raining operations ithin 50 miles fr rport. Then the aircraft is ourry not more than on Then the ELT is re pair inspection, or r r up to 90 days. A M g entry is required.  ELT is removed a p Tixed in clear view g "ELT Not Installed"	conduction dependence person demoved modificate Maintena decard nof the p

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System &	1.	2. N	NUMBI	ER INSTALLED
SEQUENCE ITEM NUMBER			3. N	Number Required for Dispatch
26 FIRE PROTECTION				4. REMARKS OR EXCEPTIONS
Power Plant Fire     Extinguisher Thermal     Discharge Disk	С	1	0	*(M) May be missing provided the CO2 bottles are weighed before the first departure of each flight day to verify adequate charge. Full bottle weighs 30.5 lbs with 12.5 lb CO charge.
Engine Fire Warning and     Detection System Bell	С	1	0	*May be inoperative.
3. Portable Fire Extinguisher				*(M) When a fire extinguisher is inoperative it must be removed from it mounting bracket and may not be carried in any location that it is visible to the passengers or crewmembers during flight operations.
	С	2	1	*A hand fire extinguisher shall be available for all baggage compartments.
	C	2	1	*The Cabin (aft) extinguisher may be inoperative when the aircraft has a passenger seating configuration of less than ten passengers.

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	5/16. 13137, 13332, 13331, 13302	<b>Dutc.</b> 03/03/2000	27

3/198. 43139, 43332, 43334, 43302				Date. 05/05/2008 27-1	
System &	1.	2. 1	Numbi	BER INSTALLED	
SEQUENCE NUMBER	ITEM		3. N	Number Required for Dispatch	
27 FLIGHT CONT	ΓROLS			4. REMARKS OR EXCEPTIONS	
Wing Flap Position     Indicator	ion C	1	0	*May be inoperative for cargo Operations provided:  a) The flaps are retracted and Visually checked before each flight, AND  b) The flaps are not extended at a speed in excess of Vfe for full flaps.  c) Appropriate AFM Limitations are applied.	
	C	1	1	Must be operational for Passenger Operations because the required Flap Operated Landing Gear Warning System must be operatable.	

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CACTEM &	1.	2. 1	Numbi	ER INSTALLED
SYSTEM & SEQUENCE ITEM NUMBER			3. 1	NUMBER REQUIRED FOR DISPATCH
28 FUEL				4. REMARKS OR EXCEPTIONS
Fuel Quantity Indicators	C	6	2	*May be inoperative provided the associated Fuel Tank is empty.
	С	6	5	*(M) One may be inoperative provided that the fuel quantity in the affected tank is determined by:
				a) Filling the tank before each departure. OR
				b) Filling the tank before the first flight and then timing the time fuel is being used from the affected tank to determine fuel usage. (Note Fuel flow from all but the forward center section tanks will be greater than engine usage due to engine fuel return lines being routed to the center section forward tanks only). OR
				c) "Dipping" the tanks with a rod or fuel stick calibrated for each specific tank prior to each departure and thereafter timing fuel usage from the affected tank.

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Crompa 0	1.	2. ]	Numbi	ER INSTALLED
SYSTEM & SEQUENCE ITEM NUMBER			3. N	Number Required for Dispatch
30 ICE AND RAIN PROTECTION				4. REMARKS OR EXCEPTIONS
1. Propeller Anti-Ice System	C	1	0	*May be inoperative provided that the aircraft is not operated in known or forecast icing conditions.
2. De-Icer Boot System	С	0	0	*May be inoperative provided that the aircraft is not operated in known or forecast icing conditions.
3. Windshield Wipers	C	2	0	*May be inoperative provided that the aircraft is not operated in precipitation within 5NM of the airport of takeoff or intended landing.
4. Windshield Anti-Ice System	C	1	0	* May be inoperative provided that the aircraft is not operated in known or forecast icing conditions.
5. Windshield De-Fog Blower	C	1	0	*May be inoperative provided that the aircraft is not operated in conditions That require its use.
6. Pitot Heat Systems	В	2	1	*May be inoperative provided that the aircraft is not operated in known or forecast icing conditions.
7. Pitot Heater Inoperative Lights	В	2	0	*(O)May be inoperative provided:  a) All other elements of the Pitot Heat System are verified operative, (by observance of Pitot Heat Amp meters) and b) The Aircraft is not operated in known or forecast icing conditions.

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System &	1.	2. 1	2. Number Installed					
SEQUENCE NUMBER	ITEM		3. 1	Number Required for Dispatch				
31 INDIC SYST	CATING/RECORDING EMS			4. REMARKS OR EXCEPTIONS				
1. Clocks	C	2	1	*One may be inoperative.				

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System &	1.	2.	Numbi	ER INSTALLED
SEQUENCE ITEM NUMBER			3. N	NUMBER REQUIRED FOR DISPATCH
33 LIGHTS				4. REMARKS OR EXCEPTIONS
1. Landing Lights	С	2	0	*May be inoperative provided that the aircraft is not operated at Night.
2. Anti-Collision Light System	С	1	0	*May be inoperative provided that the aircraft is not operated at Night.
3. Position Light System	С	1	0	*May be inoperative provided that the aircraft is not operated at Night.
4. Cockpit and Instrument Systems and Lights	C	2	1-	*(M)(O)May be inoperative provided:  a) Flight Station Emergency Lighting is operative.  b) The crew determines that sufficient lighting is operative to make each instrument, control and other device for which it is provided easily readable.  c) The crew determines that Direct rays and reflections do not impair visibility either inside or outside the aircraft,  d) The crew determines that Lighting intensity can be controlled or preset to a satisfactory level for the expected flight conditions, and e) The crew determines that Lighting configuration at departure is acceptable.
5. Cabin Interior Illumination Lights	С	4	-	*May be inoperative provided:  a) Sufficient lighting is operative for crew to perform required duties, and  a) The flight crew determines that the Lighting configuration at departure is acceptable.

TransNorthern	MINIMUM EQUIPMENT	LIST
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Gramma C	1.	2. 1	NUMBI	ER INSTALLED
SYSTEM & SEQUENCE ITEM NUMBER			3. N	NUMBER REQUIRED FOR DISPATCH
33 LIGHTS				4. REMARKS OR EXCEPTIONS
6. Door Warning Light	C	1	0	*May be inoperative provided it is verified by visual inspection that the door is CLOSED and LOCKED prior to each departure.
7. Passenger Notice System (No Smoking/Fasten Belt)	C	1	0	*May be inoperative provided that the air- craft is operative in an all cargo configuration.
1) Individual Signs	C	2	1	*(M)(O) May be inoperative provided:  a) A crewmember must brief All passengers before each departure that seat belts must be fastened at all times while the aircraft is in motion AND  b) A crewmember must brief All passengers before each departure that Smoking is NOT permitted at any time while onboard or around the aircraft.
8. Wing Illumination Lights	C	2	0	*May be inoperative provided a portable lamp/light of adequate capacity for wing and/or control surface inspection is available for night operating in icing conditions.

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Cycompa 6	1.	2. 1	Numbi	ER INSTALLED
SYSTEM & SEQUENCE ITEM NUMBER			3. N	Number Required for Dispatch
34 NAVIGATION				4. REMARKS OR EXCEPTIONS
34 NAVIGATION				
Rate of Climb Indicator	C	2	1	*One may be inoperative provided that the aircraft is operated in day VMC.
2. VHF NAV System	С	2	2	*Both must be operational for IFR  Navigation or approach procedures that require the use of VHF Nav.
	С	2	1	*One must be operational for Night VFR Or "Over the Top" operations if VHF Is required for navigation.
	C	2	0	*Both may be inoperative for Day, VFR.
3. Radio Compass (ADF)	C	1	0	*May be inoperative provided approach or enroute procedures do not require its use.
4. Marker Beacon	C	1	0	*May be inoperative provided approach procedures do not require its use.
5. ATC Transponder and Altitude Encoder System	C	1	1	*Must be operational for flight in A, B, and C airspace and the nations business airports listed in FAR 91 Appendix D.
	C	1	0	*May be inoperative in Class D or E Airspace or for individual flights Provided prior authorization has been Received from ATC. FAR 91.215
6. Global Positioning System (GPS)	D	-	0	*May be inoperative provided approach or enroute procedures do not require its (their) use. Note: Stand-a-lone GPS approaches require that 2 IFR Certified GPS systems are installed and operational.

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CACCEPA P.	1.	2. N	Numbi	ER INSTALLED
SYSTEM & SEQUENCE ITEM NUMBER			3. N	NUMBER REQUIRED FOR DISPATCH
37 VACUUM AND PRESSU	RE			4. REMARKS OR EXCEPTIONS
Vacuum Gauge	C	1	0	*May be inoperative provided Vacuum Warning Buttons are operative.
2. Vacuum Pumps	С	2	1	*One may be inoperative provided that the aircraft is operated in Day VMC.
3. Vacuum Warning Buttons	s C	2	0	*May be inoperative provided that the Vacuum Gauge is operative.
4. Pressure Gauge	C	1	0	*May be inoperative provided that the aircraft is not operated in known or forecast icing conditions.

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Aircraft:	•	R4D-8 & R4D-8Z 332, 43354, 43302				Revision: Three         Page:           Date: 05/05/2008         61 -1		
SYSTEM & SEQUENCE NUMBER	Ітем	1.	2. N		ER INSTAL	LED EQUIRED FOR DISPATCH		
61 PROPEL						ARKS OR EXCEPTIONS		
1 Autofea	ather System	C	0	0		<ul> <li>May be inoperative provided</li> <li>a) The system has been of by maintenance and that no fault exists adversely affect the flight operations.</li> <li>b) Operation is in according the appropriate Airci Manual Limitations. (takeoff weight is limited lbs.)</li> </ul>	deactivated determined that could safety of dance with raft Flight (i.e., Gross	

TRANS	Northern		MINIMUM EQUIPMENT LIST					
Aircraft:	Douglas DC-3S, S/Ns: 43159, 43						<b>Page:</b> 73 -1	
System &		1.	2. N	NUMBI	ER INSTAL	LED		
SEQUENCE NUMBER	Ітем			3. N	Number R	LEQUIRED FOR DISPATCH		
73 ENGINE	FUEL & CONTRO	 OL		1	<b>4.</b> Rem.	ARKS OR EXCEPTIONS		
	essure Warning	C	1	0	*May	be inoperative provided the Pressure Indicators are of	hat the Fuel perative.	

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1. 2. NUMBER INSTALLED					
	TEM		3. Number Required for Dispatch		
77 ENGINE INDICATING			<b>4.</b> REM	4. REMARKS OR EXCEPTIONS	
Carburetor Air     Temperature Indicate	B	2	1	*One may be inoperative provided:  a) Flight is made in day VMC  AND  b) Aircraft is not operated in know or forecast icing conditions or visible moisture.	
2. Cylinder Head Temperature Indicate	B	2	1	*One may be inoperative provided Oil Temperature Indicator is operative.	