

DC-3 Airlines Training Division

This document includes checklists, a specifications sheet and keyboard commands page. The information was compiled from a variety of sources.

I've done my best to keep the data as realistic as possible, but ... there are so many models and modifications of the DC-3 flight simulators that the task is virtually impossible.

For example: the checklists do not include the items not modeled in the flight simulator. The real-life checklists contain a great deal more detail. I decided it's of little use to call out a check when the gauge or control does not exist.

I'm sure you will find something you consider unrealistic, not true to "real life." Unfortunately, flight simmers don't live in the real world. We tread a fine line between life-life and sim-life.

Use what you can and ignore what you must. Most of all have fun with the flight simulator hobby.

DOUGLAS DC-3/R4D CHECKLISTS (Condensed) * = R4D Only

<p>BEFORE STARTING ENGINES Battery Switch - ON Generator Switch - ON Fuel Gauges - Amount of Fuel Automatic Pilot - OFF Nav & Strobe Lights - ON Seat Belt/No Smoking Lights - ON Trim Tabs - Neutral Parking Brake - ON Carburetor Heat - As Needed * Cowl Flaps - OPEN Fuel Selector - As required Propellers - Full Forward, High RPM Throttles - Cracked (or 5 keystrokes) Mixtures - Idle Cut-Off (or 5 keystrokes) Pitot Heat - OFF</p>	<p>CRUISE (CHT = Cylinder Head Temp) Desired Cruise - 2000-2150 RPM, 26" Above 3,500' Auto-Lean CHT 232C Economy Cruise -1750 RPM, 25", Auto Lean Max Cruise - 2250 RPM, 34", Below 3,500' - Auto Lean CHT 232C Min Cruise - 1700 RPM, 32" MAP, Auto Lean CHT 232C Fuel Selector - To Desired Cruise Tanks Seat Belt Light - OFF * Cowl Flaps - AS REQUIRED or OFF</p>
<p>START ENGINES (see detailed checklist) BEFORE TAXI Crew and Passengers Aboard Door Secured, Light - OFF (/ (slash) key) Radios - ON, and SET Clock - SET Parking Brake - OFF ENGINE RUN-UP Parking Brake - ON Fuel Boost Pumps - OFF Mixtures - Auto Rich Fuel Selector - All Tanks Carb Heat - ON, Check, OFF Ignition & Propeller Checks, each engine See detailed checklists</p>	<p>BEFORE LANDING Altimeter - SET Fuel Selector - ALL Mixtures - Auto Rich Carburetor Heat - As Needed Pitot Heat - As Needed Landing Lights - ON Fuel Boost Pumps - ON Seat Belt/No Smoking Lights - ON Propellers - 1800-2000 RPM Gear - Down and Latched, Green Light, Check Wheels Visually Parking Brake - Off, brake pressure on pedals Flaps - As Desired Propellers full forward in case of go around. Airspeeds: Downwind - 125k, Base - 105k Final 85k</p>
<p>BEFORE TAKEOFF Altimeter - SET Mixtures - Auto Rich Landing Lights - ON Fuel Boost Pumps - On Pitot Heat - As Required Flaps - SET * Cowl Flaps - TRAIL, then OFF Take Off - 2700 RPM, 48" Log takeoff time</p>	<p>AFTER LANDING Flaps - Up Fuel Boost Pumps - Off Elevator Trim - Neutral Propellers - Full Forward, High RPM * Cowl Flaps - OPEN Pitot Heat - OFF Log landing time</p>
<p>AFTER TAKEOFF AND CLIMB Gear - UP (After Positive Vertical Velocity and Altimeter Indication) Flaps - UP Wheels- Stop Rotation With Brakes 90 KIAS - 2550 RPM, 40" 110 KIAS - 2350 RPM, 36" Fuel Boost Pumps - OFF Landing Lights - OFF</p>	<p>PARKING Parking Brake - ON (chocks in - OFF) Ignition - OFF Mixtures - Idle Cut-Off Fuel Selectors - OFF Battery Switch - OFF Generators - OFF Flap Handle - UP Navigation, Strobe, Landing lights - OFF Pitot Heat - OFF Seat Belt Sign - OFF Door - OPEN</p>

DC-3 / R4D

<p>START ENGINES</p> <p>Right Magneto Lever - Both Right Fuel Boost Pump - On Prime Switch - On Right Start Switch - ON RIGHT, 10 to 15 seconds Mesh Switch - On Right Mesh Switch - Off Start Switch - OFF Right Mixture - Auto-Rich Right Fuel Boost Pump - OFF</p> <p>Repeat for Left Engine</p>	<p>AIRSPEEDS</p> <p>Vmc (min control) 71k V1 (decision) 81k V2 (single engine climb) 84k Vref (final approach) 80k Vr (rotate) 84k</p> <p>Max Extension, Gear Down - Vle 140</p> <p>Flaps, Max Speeds: 10 (1 / 4) - 130 KIAS 20 (1 / 2) - 105 KIAS 30 (3 / 4) - 99 KIAS 40 (Full) - 97 KIAS</p>
<p>Engine Runup - Ignition Check</p> <p>Set brakes Magneto switches in Both position. Propellers in the High position--full forward</p> <p>Right Engine Throttle to 2350 RPM. Mag switch to Left, note RPM drop Mag switch to Both Mag switch to Right, note RPM drop Mag switch to Both</p> <p>- Max allowable drop (Left or Right magneto) is 65 RPM, 25 RPM is the normal drop. - Allowable difference (left and right magneto) in RPM drop is 40 RPM</p> <p>Repeat for Left Engine</p> <p>* Propeller Feather Check Left Engine - FEATHER, UNFEATHER Repeat for Right Engine</p>	<p>Engine Runup - Propeller Check</p> <p>Magneto switches in the Both position Propellers in the High position--full forward Set 1000 RPM on both engines</p> <p>Set the left engine to 1700 RPM. Left-engine prop control to Low RPM Note that the RPM decreases to 1200 RPM or below. Return prop control to High RPM, back to 1700 RPM Left throttle to 1000 RPM</p> <p>Repeat the prop check for the right engine.</p> <p>Misc Info Carb Heat - Forward is OFF</p>
<p>TOUCH & GO CHECKLIST</p> <p>After Touchdown</p> <p>Flaps 1/4 Throttles SET 30" MAP Props FULL INCREASE Trim SET FOR TAKEOFF Power TOGA (48" 2700 RPM)</p>	<p>For Touch & Go landings, the throttle and trim settings prior to TOGA power are approximate. Don't try to be precise. Control the aircraft on the runway.</p> <p>Example: For 30" MAP, the throttles are about half open. For trim, roll in a "chunk" of nose down trim and settle for the result.</p>

DOUGLAS DC - 3 / R4D CHECKLISTS
PAX (passenger) Stops - Through Flights

<p style="text-align: center;">BEFORE LANDING</p> <p>Pitot Heat - As Needed Landing Lights - ON Fuel Boost Pumps - ON Mixture - AUTO RICH Seat Belt/No Smoking Lights - ON Propellers - 1800-2000 RPM Gear - DOWN & LATCHED (Green Light) Flaps - As Desired Propellers - FULL FORWARD Airspeeds: Downwind - 125k, Base - 105k Final 85k</p>	<p style="text-align: center;">BEFORE TAKEOFF</p> <p>Sperry Autopilot - "Zero" out 3 dials Altimeter - SET Mixtures - AUTO RICH Propellers - Full FORWARD Landing Lights - ON Fuel Boost Pumps - ON Pitot Heat - As Required</p> <p>Take Off - 48" 2700 RPM (DC-3) - 52" 2800 RPM (R4D)</p> <p style="text-align: center;">LOG TAKEOFF TIME</p>																					
<p style="text-align: center;">AFTER LANDING</p> <p>Flaps - UP Fuel Boost Pumps - OFF Elevator Trim - Neutral Propellers - FULL FORWARD, High RPM Trim - SET Pitot Heat - OFF</p> <p style="text-align: center;">LOG LANDING TIME</p> <p>Engine #1 - SHUT DOWN Seat Belt Sign - OFF Door - OPEN (/ (slash) key, DC-3) (Nav Lights OFF, R4D)</p>	<p style="text-align: center;">AFTER TAKEOFF AND CLIMB</p> <p>Gear - UP Flaps - UP Wheels- Stop Rotation With Brakes</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td style="text-align: center;">DC-3</td> <td style="text-align: center;">R4D/1776</td> </tr> <tr> <td>METO (90 kts)</td> <td style="text-align: center;">40" 2550</td> <td style="text-align: center;">43" 2600</td> </tr> <tr> <td>CLIMB (110kts)</td> <td style="text-align: center;">36" 2350</td> <td style="text-align: center;">35" 2400</td> </tr> </table> <p>Fuel Boost Pumps - OFF Landing Lights - OFF</p>		DC-3	R4D/1776	METO (90 kts)	40" 2550	43" 2600	CLIMB (110kts)	36" 2350	35" 2400												
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<p style="text-align: center;">BEFORE TAXI</p> <p>Door Secured, Light - OFF / (slash) key (DC-3) Nav Lights ON (R4D)</p> <p>Radios - ON, and SET Clock - SET</p> <p>Engine #1 - RESTART</p> <p>Trim - SET Flaps - SET Parking Brake - OFF</p>	<p style="text-align: center;">CRUISE</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td style="text-align: center;">DC-3</td> <td style="text-align: center;">R4D/1776</td> </tr> <tr> <td>Desired Cruise</td> <td style="text-align: center;">26" 2000-2150</td> <td style="text-align: center;">32" 2000</td> </tr> <tr> <td>Economy Cruise</td> <td style="text-align: center;">25" 1750</td> <td style="text-align: center;">31" 1850</td> </tr> <tr> <td>Auto Lean</td> <td></td> <td></td> </tr> <tr> <td>Max Cruise</td> <td style="text-align: center;">34 "2250</td> <td></td> </tr> <tr> <td>Min Cruise</td> <td style="text-align: center;">32" 1700</td> <td></td> </tr> <tr> <td>Auto Lean</td> <td></td> <td></td> </tr> </table> <p>Fuel Selector - To Desired Cruise Tanks Seat Belt Light - OFF</p>		DC-3	R4D/1776	Desired Cruise	26" 2000-2150	32" 2000	Economy Cruise	25" 1750	31" 1850	Auto Lean			Max Cruise	34 "2250		Min Cruise	32" 1700		Auto Lean		
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Microsoft Flight Simulator Keyboard Commands

Autopilot (Not all Aircraft have all functions)		Aircraft Control	
On / Off *	Z	Arm Auto Spoiler *	SHFT+ / (slash)
Airspeed Hold *	CTRL+ R	Carb Heat *	H
Altitude Hold *	CTRL+ Z	Engine	E
Arm Auto Throttle *	SHFT+ R	Flaps Up / Down	F 6 / F 7 or Button 3 / Button 4
Attitude Hold *	CTRL+ T	Flaps - FULL UP / DN	F 5 / F 8
Back Course Hold *	CTRL+ B	Gear *	G (Button 8)
Flight Director	CTRL+ F	Gear, hand pump	CTRL+ G
Heading Hold *	CTRL+ H	Kneepad	F 10
ILS Lock (APP) *	CTRL+ A	Lights, All *	L
Localizer Lock *	CTRL+ O	Lights, Instrument Panel *	SHFT+ L
NAV 1 Hold *	CTRL+ N	Lights, Landing *	CTRL+ L
Mach Hold *	CTRL+ M	Magnetos	M then + (plus)
Engage T.O.Power /Go Around (TOGA) *	CTRL+SHFT+ G	Magnetos, select 1	M, then - (minus)
Wing Leveler (LVL) *	CTRL+ V	Pitot Heat *	CTRL+ H
Yaw Damper *	CTRL+ D	Push Back (from Gate) *	SHFT+ P
		Tail Left	1
		Tail Right	2
		Start Jet	J, then + (plus sign) or - (minus sign)
		Smoke *	I
		Strobes *	O
		Spoilers *	/ (slash)
		Trim Nose UP / DN	End / Home or k 1 / k 7
		Water Rudder *	SHFT+ W
Autopilot - Setting Select		Engines	
Airspeed	CTRL+ SHFT+ R	Select	E (then 1,2,3,4 etc)
Altitude	CTRL+ SHFT+ Z	Auto Start	CTRL+ E
Heading Bug	CTRL+ SHFT+ H		
Brakes - Apply *. (period) or Button 1		Lights *	
Parking Brakes set * CTRL+ . (period)		Landing *	CTRL+ L
Release Button 1		Tilt Up	CTRL+ SHFT+ k 8
		Down	CTRL+ SHFT+ k 2
Cowl Flaps (increments)		Right	CTRL+ SHFT+ k 6
Open CTRL+ SHFT+ V		Left	CTRL+ SHFT+ k 4
Close CTRL+ SHFT+ C		Center light	CTRL+ SHFT+ k 5
Radio		Simulation	
ADF ** A, AA, AAA		ATC window * ` (accent)	
Com ** C, CC		Exit CTRL+ C	
DME, Select F + 1 or 2		Frame Rate SHFT+ Z	
Nav ** N + 1 or 2		Full Screen * ALT+ <enter>	
VOR/OBI V + 1 or 2		Pause* P	
Transponder ** T, TT, TTT		Rate R then + (plus) or - (minus)	
Standby Freq, switch X		Restart Flight CTRL+ ; (semi colon)	
** Tune - Letter, then + (plus) or - (minus)		Save Flight ; (semi colon)	
Nav Aid Audio Idents		Sound* Q	
VOR 1 CTRL+ 1			
VOR 2 CTRL+ 2			
DME 1 CTRL+ 3			
DME 2 CTRL+ 4			
ADF CTRL+ 5			
Instruments			
Heading Indicator, reset D			
Altimeter, reset B			
EGT, Select reference pointer U			

Specifications Sheet (Source: manuals, aircraft checklists & placards)

Airspeed (AS) in knots (except as noted)	DC-4 / C-54	R 4 D 50819	DC - 3 DCA 1776	B-25J Briefing Time
Take Off				AS = MPH
Flaps	15 deg	0		0 or 1/4
Trim	20% Nose Up	0		0
Power	50" 2700	52" 2800	48" 2800	44.3" 2600
Vr Rotate	105	85		115-130 or 110-130
METO Power	43" 2550	43" 2600	43" 2600	38" 2400
Flaps Up	120 to 300 AGL	105k 41"		Supercharger Low below 9000' High above 9000'
500 Feet		36" 2400	36" 2400	
Climb				165 - 170
Power	40" 2300	35" 2400		Normal 35.5 2400 Ferry 31.5 2100
Vy Best Rate	140	105		155
Vx Best Angle		84		130
Cruise				190 - 230
Power		32" 2000	32" 2000	
Normal	33" 2000	31" 1850	31" 1850	30-35" 1750-2200
Max	36" 2100			31.5" 2100
Long Range	29" 2050			19-21" 1600
AS		145 – 185	145 - 185	Normal 204-223 Ferry 207-212 Economy 160-170
Va Maneuver	175 – 188 51200 to 73000 #	122		190
Vne Never Exceed	260	180	172 (154 full wgt)	340
Max AS Vno				
Vmo				
Vmo Max Oper				
Landing				
Vfe Flaps	Deg Vfe / Down			
10° (1 / 4)	15 – 150 / 202	135	135	170
20° (1 / 2)	30 – 140 / 158	99	99	
30° (3 / 4)	45 – 130 / 154	97	87	
40° (Full)				
Gear Max Vle		140	140	
Vlo Oper	156		140	200
Dn - Up				
Vmc Min Cont	3 Engine - 95	77	77	1 Eng - 145
Pattern	Flap 30	20" 2000	20" 2000	
Downwind		125k		
Final AS Vref	130	80	80	
Clean				
Flaps		85	85	
Stall		(24,000 GrWgt)	(24,000 GrWgt)	
- Clean	87	67		
Vs				
- Gear/Flaps	78	61	61	
Vso				
Go Around	50" 2700	33" 2300	33" 2300	
Best Glide		115	115	Power Off 125 - 135
Close Exterior Door	SHFT + E	Nav Lights – ON		SHIFT + E
Remove Signs / Chocks		Parking Brakes - OFF		Pilot Window SHFT + E