Challenger 300 Checklist

APU Start UP

1. Circuit breakers (CB1 & CB2) .... Set
2. LANDING GEAR Handle .... DN
3. L, R, and AUX HYDRAULIC PUMPS .... OFF
4. AIR SOURCE SWITCH .... OFF or AUTO
5. Electrical System:
   a. STBY INST .... ON
   b. L and R BATTs .... ON
   c. EXT PWR (if desired) .... Connected, Checked
   AVAIL .... (2 min) .... Select ON
6. APU Start (pull up ELEC Synoptic)
   a. CAS .... Check, no APU msgs
   b. L and R BLEED .... OFF
   c. NAV lights .... NAV
   d. R FUEL PUMP .... AUTO
   e. APU RUN/START Switch (hold for 3 sec. & release) .... START
   f. EXT PWR (if applicable) .... AVAIL and disconnect
   g. APU BLEED .... ON
   h. XBLEED .... OPEN
   i. AIR SOURCE .... NORM

Prepressurization of Park Brake c̄ L Hyd. Pump.

SHUTDOWN

1. PARK/EMERG BRAKE .... Set
2. NWS .... OFF
3. L and R WSHLD/WINDOW .... OFF
4. EMERG LTS .... OFF
5. ENG RUN switches .... OFF
6. STROBE .... OFF
7. HYDRAULIC panel: (pull up HYD Synoptic)
   a. L and R HYDRAULIC Pumps & PTU .... OFF
   b. AUX PUMP switch .... Verify R HYD less than 1800 psi, OFF
8. GUST LOCK .... Set
9. L and R Cockpit Lights .... As desired
10. APU switch .... OFF
11. APU BLEED .... Confirm OFF
12. NAV lights .... OFF
13. STBY INST .... OFF
14. L and R BATT .... OFF
15. 3 GEAR PINS .... install

L Hydraulic pump - prepressuring for Park Brake
ANNUN A/B longer than 15sec for full test

MSW = A/P INOP
Aileron Trim "
Rudder Trim "
Pitch Trim "
MACH Trim "
* Pusher - except JAA a/c

Circle - Flaps 30
S. Eng - " "

(V22)
IF Bat "low" R APU GEN will exceed 400AMPS + kick R BAT OFF. TURN R BAT off until Amps down 200-250 & turn R BAT on

GEN Switches - make sure ON! CB Panels
*APU Bleed must be on for engine start!

Prob: RA/TCAS FAIL
Tone c̄ Mike Kay

Ver 5 or 5.2 = 2.0
MDC 4000 - Ver 6 = 3.1

Collins: Checklist Dave Turzai 319-295-5000
Shop collins.com

Challenger 300 Quick Reference

Weights

Max. ramp weight – SB100-11-1 39,000
Max. Certified Takeoff Weight -- Standard 38,850
Max. Zero Fuel Weight 27,000
Max. Certified Landing Weight 33,750

Speeds & Altitudes

Vmca flaps 10 degrees .... 106 KIAS
Vmca flaps 20 degrees .... 102 KIAS
Vmcg .... 111 KIAS
$Vmcg_1$ .... 116 KIAS
VLE .... 250 KIAS
Flaps Retract (TO) 10 degrees .... V_2 + 15 KIAS
Flaps Retract (TO) 20 degrees .... V_2 + 25 KIAS
Go Around .... V_{GA} + 15 Kts
Maximum Altitude to extend Gear .... 18,000 FT
VLO Retract .... 200 KIAS
VLO Extend .... 250 KIAS
Vmo up to 8,000 .... 320 KIAS
Vmo 8000 & below .... 300 KIAS
Max Operating Altitude .... FL 450
Max Landing Altitude .... 10,000 ft.
Mmo .... 0.83 M
Max tail wind .... 10 Kts
Max Turbulence Penetration(V_{RA}) .... 265 KIAS/.75 MI
Best Glide .... 160-185 KIAS

Hot Wired Items:

All Fire Protection
Water
Lights: Baggage, Entry, Cargo Bay
Entry Door
Fuel System
Lav
**Disconect Batteries for longer than 24 hrs

↓ 15° Bank Maneuvu

Flaps		VREF +
0	=	20
10	=	15
20	=	5
30	=	0

Fuel

Enroute max. fuel imbalance .... 250 to 600 Lbs
1st Hr. Burn .... 2600 lbs
2nd Hr. Burn .... 1900 lbs
Normal IFR reserves .... 2000 lbs
"FUEL QTY LOW" light comes on at less than .... 300 Lb/side
Fuel capacity of one wing tank .... 7075 Lb
Total wing fuel capacity .... ~~14,150~~ Lb
Total aircraft fuel capacity .... 14,150 Lb
Bulk Temp .... -30C/ JetA
Bulk Fuel Above 45C .... Min. 2800 lbs TO
At less than 1000 lbs ea wing Do not operate Eng more than 30 min.
Bulk Temp Fuel +50 C .... Flight Prohibited
Single point pressure refueling is limited to .... 55 psig
Single point pressure defueling is limited to .... -8 psig
APU burns out of right wing .... 150-180 lbs/hr

~~Prist~~ Recommended due to probe icing
Additive, BUT PRIST prohibited.

Anti-Ice/Icing

Wing & Cowl on in icing conditions...............................-40 & Vis moisture
Wing Heat on Ground at....................................-5C and visible moisture
APU must be **off** for anti-icing operations + 5 min.
If De-iced, turn on wing heat just prior to TO.
Nacelles & Wings= hot air..................Windshield, Probes= Electric
Trim must be full nose up for de-icing.

APU

External Power (priority if plugged in) requires.............. min. 500 Amps DC
Air cart start requires... 36 psi
Rt BAT is normal start battery. Will drop offline during APU start. Check L Bat voltage prior to R Bat on before start.

Attempts #1-3...wait 60 sec.
#4.......wait 20 min.
#5-6... wait 60 sec
#7.......wait 40 min.

Max "Motor/Crank" Time.......30 sec between each attempt
#2 Fire Bottle fires into APU. NOT #1
Auto Shutdown on GRD. Not in Air
Max Operating Altitude AIR............. FL 150 or SB100-21-05=FL200
Max Operating Altitude GEN......................... FL 300
Max Eng Start Altitude.................................FL 200
Max Operating Speed................................ 300 Kts

Autopilot Min Altitudes

Takeoff..700 ft. AGL
Non precision approach..200 ft. AGL
Precision approach...80 ft. AGL
Must have 2 AHRS operational for AFCS to operate.
!/2 Bank at 31,600 ft
Not more than ~~4~~5 degrees on GS w/ AP.

Continuous Ignition Required:

- Contaminated Runway
- Intense Rain
- Heavy Turbulence
- Thunderstorms in the area

Electrical

Primary power: 2 Engine Driven Generators
Rated at 12KVA , 400 hz,
Auxiliary power: APU (Limits: FL300 and below)
Left Battery (Nicads)..24 Volt/ 44 amp hr
Right Battery (Starts APU)..24 Volt/ 44 amp hr
Failure of GEN auto load sheds opposite DCMP hydraulic pump
Failure of GEN auto load sheds all "utility" buses (Galley, etc)

Engines: HTF 7000
6826 lbs Thrust up to 86F FADEC 4.2 to 1 Bypass ratio
3 Consecutive Start Attempts Allowed w/ 30 sec. motoring each time, then 15 min.
Auto APR=10 min. Man APR=5 min. ↓ 350° for start
Auto Sync w/in 5% Also Mach Hold function 32psi min ~~APU~~ EXT start
Engine Oil: Max ___oz/hr.
(check on preflight or after engine has cooled dn—up to 1 hr.)

Environmental
Max. differential pressure is 9.2 to -0.5 psid
APU air available up to 15,000 ft.
Trim Air prohibited on GRD Ops

External Power
Must be regulated to 28 volts/ minimum of 500 amp to start APU
External Power has priority over GEN's and APU GEN.

Gear
Do not extend above FL180
VLE..........250 KIAS VLO Extend.......250KIAS VLO **Retract......200**
120^0 of towing travel w/ pins in
Steering: Tiller= 65^0 and Rudder= 7^0

Hydraulics: (Pre-pressurize EMER Brake w/ hyd. on)
Eng Pumps 3000 psi each....................Accumulator is 1500 psi
Mil-H-5440 Type II Skydrol (neutralized by milk).....**Cooled by Fuel**.
Fuel limits based on ambient Temps to keep hydraulics cooled
AUX pump is not load Shed.

Left	**Aux**	**Right**
Rudder	Lwr Rudder	Rudder
Elevator		Elevator
L aileron		R Aileron
INBD Flight spoiler		Outbd Flight Spoiler
INBD Grd Spoiler		OUTBD Grd Spoiler
ALTN Flaps		**MLG Aux Actuator** (30 min)
Gear		Outboard Brakes
Nose Steering		**PTU**
L Thrust Reverser		R Thrust Reverser
Inboard Brakes		Outboard Brakes
(13 Qts)		(9.1 qts)

Brake accumulator can stop airplane (6 applications)
No AntiSkid w/ hydraulic failure.
DCMP will load shed to reduce load if Eng. Driven pump working
L DCMP powered by APU. Rt. By Bat Bus and has priority

Total Hydraulic Failure Conditions:
Elevator=Manual
Rudder= Manual
Roll Assist Spoilers=Lost
Ailerons= Cable
No Flaps, TR's or Spoilers

Spoilers

Flight: Must be stowed by 500 ft. AGL
Hydraulic actuated, electric operated
Flight: 0-40 degrees
Prohibited V_{REF} + 8KIAS
Grd & Emerg: 60^0
If Inop limited to FL410
Activated with 5^0 of aileron movement

Stalls & Maneuvers
Intentional stalls are prohibited above FL180
No aerobatic maneuvers, including spins, are approved

Tires
Nose gear tire pressure (weight on wheels) ....113-119 psi
Main gear tire pressure (weight on wheels)............................155-163 psi
Max Ground Speed...182 KIAS
Gear pins must be in to tow. Max 120^0

Yaw Damper
Must be on for flight, or below 31,000 ft
Disconnects on TO at 65 KIAS and re-engages with WOW
Rudder Limiter begins above 145 KIAS. If inop, restricted to 185 KIAS

Take-Off Config Warnings:

A/P	Pitch	Rudder
Aileron	Flaps	Spoilers
Park Brake	Pitch Disconnect	Roll Disconnect

Windshields:
Windshield heat must be off to use Mag Compass
65° Glass 5 layers? use

Pre Flight Notes:
Probe Switches must be off to test
1 Static wick per surface allowed missing for flight (24 Total)
Battery Sequence: STBY-→Left--→Right -→APU
Check TR's ON in Tailcone
Check proper wiring of locking screws on wings

Weight & Balance:

(Weight x Arm)/1000 = Moment

Arm= Moment / Weight

To get % MAC: Use calculated Arm and the AFM Chart

Diagnotics Codes:

MDC Menu=A/ICE + ECS + FUEL simultaneously (checklist)
A/P= A/ICE +ECS +FLT (Rt Side)
AOA=ECS + ~~FLT~~ + HYD ANTICE
Air Mode= A/ICE + ECS + FUEL Then: LRU Test →PSEU LRU→ PSEU Test
After MDC Verifies LRU Type, ENABLE ALL GEAR WOFW msg= Air Mode Warning Appears

Misc:

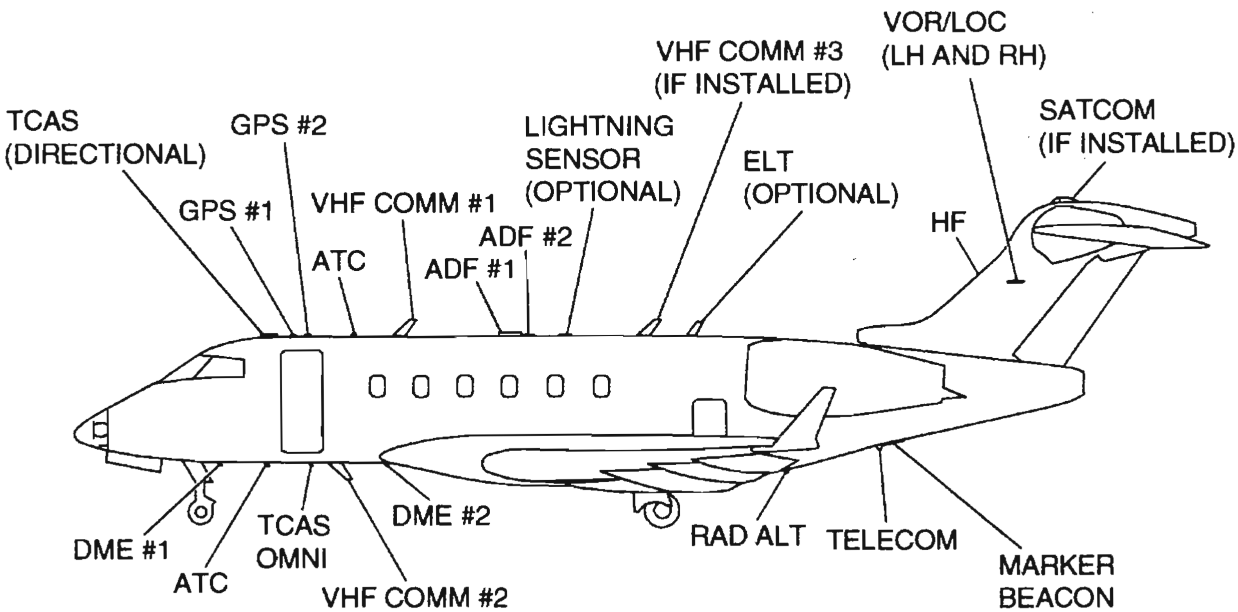
Cancel Aural Warnings thru DCU's.
Use VHF1 in Emerg to take Aural warnings out of speakers and into headsets.
FDR Fault.................hold FDR Event button to put light out
FDR Fail on Grd..................Turn on Beacon
TO-TO on Toga: V-speeds and Flaps set
MSW Does NOT disconnect: YD
    Does Disconnect A/P, Pitch Trim and Pusher
Fire Bottles are PUSH & HOLD
Galley Sink—plastic container is heated. Make sure there is water in it. Control is by CB
Flap Reset by entry door
Mach Hold Switch does not stay on in early S/N's. Can be "off" when lit ON.
TCAS: 2700 Norm / 9900 Abort/Blas

Wingspan...63 Ft 10"
Length..68 Ft 8"
Cabin height...6 Ft. 1"
Turning Radius..58 ft
Cabin Door...1000 lb limit
Max passengers...9
Max occupants...11

Hold ANNUN - 15 sec for GPWS check
Lt. Left Fuse = TAIL CONE
Speakers are cross side xmit
CVR - Hyd press, park Brake

FF FL270 = 2600-2700 heavy

ANTENNA LOCATION SCHEMATIC



PRESSURIZATION SCHDULE – CLIMB AND CRUISE

AIRCRAFT ALTITUDE (ft)	CAIN ALLTITUDE (ft)	CABIN DELTA P (PSID)	AIRCRAFT ALTITUDE (ft)	CABINT ALTITUDE (ft)	DELTA P (PSID)	AIRCRAFT ALTITUDE (ft)	CAIN ALLTITUDE (ft)	CABIN DELTA P (PSID)
-1500	-1786	0.1	15000	1379	2.8	33000	4955	8.3
-1000	-1273	0.1	16000	1504	6.0	34000	5272	8.3
0	-245	0.1	17000	1637	6.3	35000	5612	8.3
1000	-135	0.6	18000	1778	6.5	36000	5877	8.3
1500	-81	0.8	19000	1926	6.8	37000	6076	8.4
2000	-26	1.0	2000	2091	7.0	38000	6331	8.5
3000	81	1.4	21000	2258	7.2	39000	6586	8.5
4000	187	1.9	22000	2429	7.4	40000	6827	8.5
5000	294	2.3	23000	2608	7.6	41000	7056	8.5
6000	399	2.7	24000	2795	7.7	42000	7272	8.5
7000	504	3.0	25000	2984	7.7	43000	7476	8.6
8000	610	3.4	26000	8189	8.0	44000	7669	8.7
9000	716	3.8	27000	3404	8.2	45000	7850	8.8
10000	816	4.1	28000	3628	8.3			
11000	925	4.4	29000	3864	8.3			
12000	1036	4.8	30000	4111	8.3			
13000	1150	5.1	31000	4375	8.3			
14000	1268	5.4	32000	4653	8.3			

PRESSURIZATION SCHEDULE – DESCENT AND HOLD (<25,OO FT.)

AIRCRAFT ALTITUDE (ft.)	CAIN ALLTITUDE (ft)	CABIN DELTA P (PSID)	AIRCRAFT ALTITUDE (ft)	CABINT ALTITUDE (ft)	DELTA P (PSID)	AIRCRAFT ALTITUDE (ft)	CAIN ALLTITUDE (ft)	CABIN DELTA P (PSID)
-1500	-1786	0.1	15000	1118	5.8	33000	4699	8.5
-1000	-1291	0.1	16000	1229	6.0	34000	5098	8.5
0	-299	0.1	17000	1347	6.3	35000	5487	8.5
1000	-202	0.6	18000	1473	6.5	36000	5782	8.2
1500	-155	0.8	19000	1606	6.8	37000	6064	8.6
2000	-107	1.0	2000	1756	7.0	38000	6332	8.6
3000	-13	1.5	21000	1907	7.2	39000	6587	8.6
4000	80	1.9	22000	2063	7.4	40000	6828	8.6
5000	173	2.3	23000	2226	7.6	41000	7057	8.7
6000	264	2.7	24000	2396	7.7	42000	7273	8.7
7000	356	3.1	25000	2569	7.9	43000	7477	8.7
8000	448	3.5	26000	2754	8.0	44000	7670	8.8
9000	540	3.9	27000	2948	8.2	45000	7850	8.8
10000	626	4.2	28000	3151	8.3			
11000	721	4.6	29000	3366	8.4			
12000	818	4.9	30000	3591	8.5			
13000	918	5.2	31000	3873	8.5			
14000	1022	5.5	32000	4291	8.5			