Cessna Citation 500 Eagle

Speeds (KIAS)

V_{MCA}	—	Below stalling speed
V_{MCG}	55	
V_{SSE}	—	Not specified
V_A	150	(approx.) at 7500 lb
	184	(approx.) at MTOW
V_{MO}	259	Below 30 400’
M_{MO}	0,705	Above 30 400’
V_{FE}	199	15° (TO & Landing)
	173	Above 15°
V_{LE}/V_{LO}	173	
V_{SB}	V_{MO}/M_{MO}	
Other		
Glide	125	8500 lb
	137	10 500 lb
	180	Turbulent air
	165	Tire Ground Speed
Cruise climb		
	200-220	Sea level
	190-210	10 000’
	180-200	20 000’
	170-190	30 000’
	160-180	40 000’

Landing Reference Speeds (full flap)

Weight (lbs)	V_{REF} (KIAS)	Appr. Climb
11 400	102	108
10 500	98	104
9500	93	100
8500	88	95
7500	83	88

Note: *Landing climb at V_{REF}*

Step Climb Max. Weights

FL change	Max (lb)	FL change	Max (lb)
310 to 350	11 800	330 to 370	11 400
350 to 390	10 900	370 to 410	10 500

Cessna Citation 500 Eagle
Performance

Simplified performance

Conditions:

1. No obstacles
2. Anti-ice off
3. Flap: TO & APPR
4. Field length: 1372 m or longer
5. No tailwind
6. No uphill

Parameter		**Set 1**	**Set 2**	**Unit**
Field	TOW	12 500	11 000	lb
	Elev.	3000	5000	ft
	T_{min}	-2	-2	°C
	T_{max}	21	21	°C
Speed	V_1	100	93	KIAS
	V_R	102	95	KIAS
	V_2	105	99	KIAS
	V_{MCA}	151	142	KIAS
N_2	Takeoff	93,9		%
	SE climb	92,4		%
	ME climb	90,3		%

Note: *N_2 is turbine RPM*

Climb-limited takeoff mass limits

	Anti-ice Off		**Anti-ice On**	
	0° flap	**15° flap**	**0° flap**	**15° flap**
SL	43°C	32°C	4°C	Not Possible
2000	32°C	26°C	4°C	
4000	26°C	15°C	-7°C	
6000	15°C	4°C	-18°C	
8000	4°C	-7°C	-29°C	

Note: *Temperatures above those shown require mass reduction. See PFM pp. 4-9, 4-10.*

Engine thrust limits (N_1 = Fan Speed)

Takeoff/Go-around Thrust

Temp	Anti-Ice Off				A-I On
°C	**SL**	**2000'**	**4000'**	**6000'**	**All Alt**
-20	90,4	93,0	95,6	98,5	95,4
-10	92,0	94,8	97,7		94,0
0	93,7	96,6	96,7		92,6
10	95,6				91,2
20	94,5				NA
30	92,8				NA
40	90,8				NA

Maximum Continuous Thrust

Temp	Anti-Ice Off				A-I On
°C	**SL**	**2000'**	**4000'**	**6000'**	**All Alt**
-20	88,6	91,0	93,7	96,6	96,6
-10	90,4	92,8	95,6	96,4	96,4
0	92,0	94,4	95,5		96,6
10	93,9	94,4			96,4
20	93,2				NA
30	91,6				NA
40	89,7				NA

Normal Climb/Cruise Thrust

Temp	Anti-Ice Off				A-I On
°C	**SL**	**5000'**	**15 000**	**20 000**	**All Alt**
-20	86,4	92,2	96,2	98,7	94,5
-10	88,0	94,0	98,0		94,0
0	89,6	95,7	97,0		93,2
10	91,5	95,9			92,2
20	93,0	94,6			NA
30	93,0				NA
40	91,2				NA

Minimum turnaround times

Braking speed	Landing weight	
kts	**8000 lb**	**11 000 lb**
60	4 min	7 min
80	8 min	13 min
100	15 min	20 min
120	22 min	26 min

If V_1 > 110 kts, add 3 min/kt

Cessna Citation 500 Eagle
Normal Checklist

Before starting engines

Cockpit inspection: Completed
Exterior inspection: Completed
Speeds and engine settings: Computed and checked
Cabin door: Closed and locked
Passenger briefing: Complete
Oxygen system: Checked
Seats, harnesses, pedals: Adjusted and secure
Parking brake: Set
Control lock: Off
Landing gear handle: Down
Circuit breakers: Checked
LH Gyro Slave: Auto
Generators: On (Off for GPU)
Boost pumps: Normal
Crossfeed: Off
All other switches: Off or Norm
Windshield bleed air valves: Off
Thrust levers: Off
External power: Connected if required
Battery switch: BATT
Voltage: Check
Warning systems: Checked and off
Engine instruments: No flags
Fuel quantity: Checked
Anti-collision lights: On

Start

Centre panel lights: As required
Engine start button: Press briefly
FUEL BOOST ON: Illuminated
Ignition: Active (check green light)
8 to 10% N_2: Wait
Temperature: Monitor (limits, rise in 10 s)
Fan speed: Present when Turbine at 20 to 25%
Engine instruments: Checked
Turbine RPM: Set 48 to 50%

After start

GPU: Disconnect if used
Generators: On
Lights: As required
Inverters: Checked and selected
Voltmeters/Load: Checked
Passenger advisory lights: PASS SAFE
Aft facing seat: Full aft, upright
Avionics: As required
Vacuum: Check
Auto temperature select: As desired
Pressurisation: Set altitude and rate

Taxi

Brakes: Check
Deice system: Check if required
Anti-ice systems: Check and set
Gyros: Check
Crossfeed: Check for one minute

Before takeoff

Seats, harnesses: Check secure
Ignition: On
Engine instruments: Check
Fuel quantity: Check
Flight instruments: Check
Altimeter and altitude alert: Set
Avionics: Checked and set
Thrust reversers: Cycled, checked and stowed
Speedbrakes: Cycled, lights out
Electric trim: Checked and set
Trims: Set
Autopilot: Tested (x3)
Flight controls: Full, free, correct movement
Flaps: Cycled and set
Pressurisation source: Both
N_1, V_1, V_R, V_2, V_{REF}, V_{YSE} settings: Confirm
Takeoff briefing: Completed
Annunciator panel: Clear
Passenger advisory lights: PASS SAFETY

Before takeoff (ready to go)

Exterior lights: As required
Anti-ice: Checked and as required
Pitot/Static heat: On
Transponder: Set and on
Ignition: On

During takeoff run

Engine instruments: Monitor
Pressurisation: Monitor

After takeoff

Landing gear: Up
Flaps: Up
Ignition: NORM
Climb power: Set
Pressurisation: Set
Passenger advisory light: As required
Anti-ice systems: As required
Landing lights: Off
Engine instruments: Monitor

Climb through FL100

Exterior lights: As required
Passenger advisory light: As required
Pressurisation: Checked
Oxygen: As required
Quick-don & 100% above FL250

Descent

Cockpit/Defog fan: High (15 min prior to descent)
Approach briefing: Completed
Foot warmers: Close
Windshield anti-ice: As required
Windshield bleed air: Low
Pressurisation: Set cabin altitude, Rate
Anti-ice systems: As required
Power: As required (maintain ice protection)
Altimeters: Set, crosschecked
Speed brakes: As required
Passenger advisory light: As required

Descent through FL100

Exterior lights: As required
Pressurisation: Checked
Passenger advisory light: As required

Before landing

Seats and belts: Secure
V_{REF}, V_2, N_1: Confirm
Lights: As required
Passenger advisory lights: PASS SAFE
Aft facing seat: Full aft, upright
Crossfeed: Off
Ignition: On
Engine synchronisation: Off
Landing gear: Down and locked
Flaps: Land
Airspeed: V_{REF}
Autopilot and yaw damper: Off
Annunciator panel: Clear
Pressurisation: Check zero differential
Speed brakes: Retracted above 50'

After landing

Flaps: Up
Landing and taxi lights: As required
Ignition: Normal
Speed brakes: Retract
Ice protection: Off
Pitot heat: Off
Trim: Set
Transponder and radar: Off
Strobes: Off

Shutdown

Parking brake: Set
Exterior lights: Off
Inverters: Off
Passenger advisory light: Off
Avionics: Off
Cockpit/Defog fan: Off
ITT: Stable for 1 min
Thrust levers: Off
Battery: Off
Control lock: Engage
Parking brake: As required
External covers and chocks: Install

Cessna Citation 500 Eagle
Abnormal Checklist

Low oil pressure

If 35 to 65 PSI:
Reduce affected engine's power
If below 35 PSI:
Thrust lever (affected engine): Off
Accomplish **engine failure/shutdown** checklist

Landing gear will not extend

Landing gear handle: Check down
Airspeed: Below 173 KIAS
Gear control circuit breaker: Check in
Auxiliary gear control: Pull handle, rotate to lock
Rudder: Yaw if necessary to achieve lock
Aux gear control: Pull knob to blow down

Flap inoperative approach/landing

Seats, harnesses: Secure
Approach speed: Confirm
Flaps 15°: V_{REF} + 10 else V_{REF} + 20
V_2: Confirm
Flap 15°: See graph 4-18 or 4A-18
Else V_{REF}+10
Airspeed: As required
Flap Control and Flap Motor CBs: Check in
Passenger advisory lights: PASS SAFETY
Aft facing seat: Full aft and upright
Crossfeed: Off
Ignition: On
Landing gear: Down and locked
Engine synchroniser: Off
Autopilot and yaw damper: Off
Annunciator panel: Clear
Pressurisation: Check zero differential
Speed brakes: Retracted prior to 50'

Single-engine approach/landing

Seats, harnesses: Secure
V_{REF}, V_2, N_1: Confirm
Passenger advisory lights: PASS SAFETY
Aft facing seat: Full aft and upright
Crossfeed: Off
Ignition (operating engine): On
Flaps: TO & APPR
Landing gear: Down and locked
Airspeed: V_{REF} + 10 kts
Engine synchroniser: Off
Autopilot and yaw damper: Off
Annunciator panel: Clear
Pressurisation: Check zero differential
Speed brakes: Retracted prior to 50'

Single-engine go-around

Thrust levers (operating engine): Takeoff power
Flaps: TO & APPR
Landing gear: Up when positive climb rate established
Climb: Normal, at V_{YSE}

Door not locked (DOOR NOT LOCKED on)

Note: *Nose or tailcone doors, door switches, disengagement of lower forward cabin door pin*
On the ground:
Correct condition prior to flight
In flight:
Cabin altitude: Select 9500'
Airspeed: Reduce
Passenger advisory lights: PASS SAFETY
Cabin door: Keep clear
Altitude: Descend
Land: As soon as practical

Wheel brake failure

Brake pedals: Remove feet
Emergency brake handle: Pull as required
Note: *Limited capacity!*

Windshield bleed air failure

Windshield bleed air switch and valves: Off
Windshield alcohol anti-ice: As required (<10 min!)
Environment: Leave icing conditions

Windshield air overheat

Momentary illumination:
    Windshield bleed air valves: Reduce
Continuous illumination:
    Windshield bleed air switch and valves: Off
    Windshield alcohol anti-ice: As required
    Environment: Leave icing conditions

Engine anti-ice failure (ICE FAIL on)

Thrust levers: Increase
Engine anti-ice controls: Check switches and CBs
Environment: Leave icing conditions

Pitot-static failure

Anti-ice switches and circuit breakers: Check
Inoperative system: Determine
    Note: Autopilot uses copilot static

Environment system air duct overheat (AIR DUCT OVERHEAT on)

Circuit breaker: Reset
Auto Temp Select: MAN
Manual heat/Manual cool switch:
    MAN COOL until annunciator goes out
If light does not go out:
    Pressurisation source: LH or RH, reduce power
After light goes out: Control temperature manually

Emergency pressurisation on (automatic actuation)

Note: *Indicates air cycle machine failure or shutdown*
Temp control: Adjust to warmer setting
Pressurisation source selector: EMER
Wait: At least 1 minute
Pressurisation source selector: LH, RH or BOTH
If emergency pressurisation remains on:
Press Source Select: EMER
Cabin temperature: Control LH thrust lever

Vacuum system failure

Note: *Right AI and EMER DUMP will be inoperative. Cabin pressure will go to max differential*
Press Source Select: Off before landing

Single generator failure (GEN OFF on)

Electrical load: Decrease if required (325/400 A)
Failed generator: Check switches/CBs, reset as req'd
If unable to reset:
Failed generator: Off

No. 2 AC failure (RAD AC PWR FAIL on)

Note: *Radar, Bendix radio altimeter will not operate*

No. 1 AC failure (FD AC PWR FAIL on)

AC Power crossover: XOVER
Note: *Radar, Bendix radio altimeter will not operate*

Electric trim runaway

Autopilot/Trim disengage: Press
Manual elevator trim: As required

Electric trim inoperative

Electric trim circuit breaker: Check CB
If still inoperative:
Manual elevator trim: As required

Jammed elevator trim tab

Cruise:

Trim speed: Maintain as long as possible

Takeoff or go-around:

Power: Reduce to maintain < 120 KIAS

Airspeed:

Flaps 0°: V_{REF} + 20

Flaps 15°: V_{APP}

Flaps 40°: V_{REF}

Landing gear: Do not retract

Land: As soon as practical

Note: *If flaps not 40°, use flaps inop. procedure*

Low fuel pressure (FUEL PRESS LO on)

Fuel boost: On

Circuit breakers: Check in

Fuel: Check

Crossfeed: If required

Low fuel quantity (FUEL LEVEL LO on)

Note: *Minimum 170 lb remains in either tank*

Fuel boost: On

Land: As soon as practical

Low hydraulic pressure (HYD PRESS LO on)

Note: *Indicates inoperative pump*

Affects landing gear, speed brakes, reversers

Low hydraulic fluid level (HYD LEVEL LO on)

Land: As soon as practical

Note: *Affects landing gear, speed brakes, reversers*

Hydraulic system remains pressurised (HYD PRESS ON)

Speed brake control circuit breaker: Pull
    If system remains pressurised: Reset
Gear control circuit breaker: Pull
    If system remains pressurised: Reset
Reverser control circuit breaker: Pull
    If system remains pressurised: Reset
Affected breaker: Leave pulled
If system remains pressurised
    Land: As soon as possible
Before landing
    Circuit breakers: Reset to restore operation

Fuel filter bypass (FUEL FILT BYPASS on)

Note: *Inspect filters after landing*

False engine start (no ignition)

Thrust lever: Off
Wait: 15 s
Starter disengage: Press

Engine fire during ground shutdown (high or sustained ITT)

Thrust lever: Check off
Start button: Press momentarily
Wait: 15 s
Starter disengage: Press

Supplemental oxygen usage

Oxygen masks: NORMAL below 25 000', 100% above
Oxygen supply: Check crew and passengers
Cabin altitude: Max 25 000' with pax, else 34 000'
Oxygen: Check endurance (fig. 3.3)
Range: Compute (oxygen supply, revised groundspeed)

Cessna Citation 500 Eagle
Emergency Checklist

Engine failure/fire during takeoff

Speed below V_1: Abort takeoff

Brakes: As required
Throttles: Idle
Speed brakes: Extend

If engine fire: Accomplish checklist
If engine failure: Accomplish checklist

Speed above V_1: Normally continue takeoff

Positive rate of climb: Attain
Gear: up
Height: Climb 400'
Flaps: Retract at V_2 + 10
Airspeed: 140 KIAS

If engine fire: Accomplish checklist
If engine failure: Accomplish checklist

Engine failure/precautionary shutdown

Thrust lever (affected engine): Off
Electrical load: Reduce as required
Crossfeed: As required
Generator (affected engine): Off
Note: *If no fire hazard, leave shutoff open and boost pump on*

Maximum glide: Emergency landing

Airspeed: 125 KIAS @ 8500 lb + 3 KIAS/500 lb
Flaps: Up
Speed brakes: Retract
Landing gear: Up
Transponder: Emergency
ATC: Advise
Passenger advisory switch: PASS SAFE
Shoulder harnesses: Secure
Before landing:
Landing gear: As required
Speed brakes: As required
Flaps: As required

Engine failure during coupled approach

Power (operating engine): Increase as required
Rudder trim: Toward operating engine
Airspeed: V_{REF} + 10 kts
Flaps: TO & APPR

Thrust lever (affected engine): Off
If engine fire: Accomplish checklist
Passenger advisory lights: PASS SAFE
Aft facing seats: Check full aft and upright
Ignition (operating engine): On
Landing gear: Down and locked
Annunciator panel: Check
Flaps: LAND (when landing is assured)

Emergency restart: One engine

Note: *Air start envelope in fig 3.1.*
Without starter assist: *Over 200 KIAS.*
With starter assist:
100 KIAS below 10 000' to 150 KIAS @ 35 000'
Following shutdown, with starter assist:
- **Thrust lever:** Off
- **Generator:** GEN
- **Firewall shutoff:** Check open
- **Ignition:** On
- **Start button:** Press momentarily
- **Thrust lever:** Idle at 8 to 10% turbine RPM
- **Engine instruments:** Monitor
- **Ignition:** NORM

Following shutdown, windmilling, > 200 KIAS
- **Thrust lever:** Off
- **Firewall shutoff:** Check open
- **Ignition:** On
- **Boost pump:** On
- **Thrust lever:** Idle
- **Engine instruments:** Monitor until stable
- **Boost pump:** NORM
- **Ignition:** NORM
- **Generator:** GEN

Emergency restart: Two engines

Note: *Air start envelope in fig 3.1.*
Without starter assist: *Over 200 KIAS.*
With starter assist:
100 KIAS below 10 000' to 150 KIAS @ 35 000'

Ignition: Both on
Boost pumps: Both on
Thrust levers: Both idle
If altitude allows: Increase airspeed to 200 KIAS

Firewall shutoff: Check open
All anti-ice switches: Off
If no start in 10 s:
Either start button: Press momentarily

Engine fire (ENG FIRE PUSH illuminated)

Thrust lever (affected engine): Idle
If light remains on:
Engine fire switch: Lift cover and push
Illuminated BOTTLE ARM switch: Push

Ignition: NORM
Thrust lever (affected engine): Off
Electrical load: Reduce as required
400 A to 35 000', 325 A above
Boost pump: Off
If fire warning still on after 30 s:
Other BOTTLE ARM switch: Push
Land: As soon as possible
Light goes out, no secondary indications present:
Land: As soon as practical

Environmental smoke or odour

Oxygen masks: Don and 100%
Cabin fan: Off
Cockpit/defog fan: Off
Pressurisation selector: Isolate LH—RH—EMER

Smoke removal

Note: *Action only required if smoke is intense*
Oxygen masks: Don and 100%
Pass Oxy manual valve: On
Oxygen priority valve: Check normal
Passengers: Assure receiving oxygen
Passenger advisory light: PASS SAFE
Emergency dump switch: DUMP
Refer to **use of supplemental oxygen** procedure
If smoke persists or cannot be verified fire free:
    Land: As soon as possible

Electrical fire or smoke

Oxygen masks: Don and 100% selected
Known source: Isolate faulty circuit
Unknown source:
    Battery switch: EMER
    Generators: Off
Note: *Items inoperative on EMER:*
Landing gear: Use blow-down system
Flaps: Make flap inop landing if required
Engine anti-ice will be open: Engine performance
OAT gauge unreliable: Caution thrust settings
All engine gauges inoperative except $N_1 > 50\%$
Microphone: EMER COMM
Electrical switches: Off
Windshield bleed air manual valves: Off
All circuit breakers pull except:
    NAV/RMI2; PN101 compass; COM1; FLOOD; DC PWR LH BUS (3); DC PWR RH BUS (3); LH CB PANEL; RH CB PANEL
    Note: *Headphones required!*
Battery switch: BATT
Generators: GEN
If severity of smoke warrants:
    Initiate smoke removal and/or emergency descent procedures as required
If fire or smoke persists or it cannot be verified that the fire is extinguished:
    Land: As soon as possible
If fire or smoke decreases:
    CBs and switches: Reinstate one at a time

Electrical fire or smoke

Oxygen masks: Don and 100% selected
Known source: Isolate faulty circuit
Unknown source:
    Battery switch: EMER
    Generators: Off
Note: *Items inoperative on EMER:*
Landing gear: Use blow-down system
Flaps: Make flap inop landing if required
Engine anti-ice will be open: Engine performance
OAT gauge unreliable: Caution thrust settings
All engine gauges inoperative except N_1 > 50%
Microphone: EMER COMM
Electrical switches: Off
Windshield bleed air manual valves: Off
All circuit breakers pull except:
    NAV/RMI2; PN101 compass; COM1; FLOOD;
    DC PWR LH BUS (3); DC PWR RH BUS (3);
    LH CB PANEL; RH CB PANEL
    Note: *Headphones required!*
Battery switch: BATT
Generators: GEN
If severity of smoke warrants:
    Initiate smoke removal and/or emergency descent procedures as required
If fire or smoke persists or it cannot be verified that the fire is extinguished:
    Land: As soon as possible
If fire or smoke decreases:
    CBs and switches: Reinstate one at a time

Loss of both generators

Generators: RESET then GEN
If only one generator comes on:
Electrical load: Reduce as required
400 A to 35 000', 325 A above
If neither generator comes on:
Battery switch: EMER
Note: *Only DG2, COM1, NAV2 and floodlight for approx. 30 minutes*
Note: *Items inoperative on EMER:*
Landing gear: Use blow-down system
Flaps: Make flap inop landing if required
Engine anti-ice will be open: Engine performance
OAT gauge unreliable: Caution thrust settings
All engine gauges inoperative except $N_1 > 50\%$
Microphone selector: emer comm
Windshield bleed air manual valves: Off
Land: As soon as practical

Overpressurisation

Cabin altitude selector: Set higher cabin altitude
Rate control: INC
If still overpressurised:
Pressurisation source selector: LH or RH
Cabin altitude: Control with thrust lever
If unable to control:
Oxygen masks: Don and 100%
Pass oxy manual valve: On
Crew oxy priority valve: Check NORMAL
Passengers: Assure receiving oxygen
Passenger advisory light: PASS SAFE
Emergency dump switch: DUMP
*Refer to **use of suppl. oxygen** procedure*

Rapid decompression

Oxygen masks: Don and 100%
Emergency descent: As required
Crew oxy priority: Check NORMAL
Passengers: Ensure receiving oxygen

Transponder: Emergency
If cabin altitude above selected value:
Cabin altitude selector: Reduce
Rate control: Full INC
Pressurisation source select: Check BOTH
If selection does not hold pressurisation:
Pressurisation source selector: EMER
If not arrested by 14 000' cabin altitude:
Emergency descent: Initiate
Crew oxy priority valve: Check NORMAL
Passengers: Assure receiving oxygen
Refer to **use of suppl. oxygen** procedure

Emergency descent

Thrust levers: Idle
Speed brakes: Extend
Bank: Moderate bank angle

Passenger advisory lights: PASS SAFE
Maximum airspeed: V_{MO}/M_{MO}
Note: *Reduce speed if structural damage*
Transponder: Emergency

Autopilot hardover

Autopilot/Trim disengage: Press

Maximum altitude losses: As specified in PFM

