



Comparison of Single Pilot Jets


Manufacturer Model		Cessna Citation Mustang	Cessna Citation CJ2+	Beechcraft Premier 1A Model 390	Cessna Citation CJ1+	Eclipse Aviation EA 500
B&CA Equipped Price	*\$2,300,000	\$2,520,000	\$6,068,000	\$6,205,130	\$4,613,000	\$1,520,000
Characteristics						
Seating	1+6/9	1+5/5	1+8/9	1+6/7	1+7/7	1+4/5
Wing Loading	60.3	41.2	47.4	50.6	44.6	41
Power Loading	2.91	2.96	2.51	2.72	2.72	3.33
Noise:TO/Sideline/APR	78/88/92	73.9/85/86	75.5/86.1/89.7	78.3/87.9/92.0	73.5/85.2/88.5	NA/NA/NA
Dimensions (ft)						
External Length	47.6	40.6	47.7	46.0	42.6	33.5
Height	12.3	13.4	14.0	15.3	13.8	11.0
Span	35.6	43.2	49.8	44.5	46.9	37.9
Internal Length:OA/Net	12.1	9.8/9.8	13.6/13.6	13.5/11.2	11.0/11.0	7.5/5.2
Height	4.3	4.5	4.8	5.4	4.8	4.2
Width:Max Floor	4.9	4.6/3.1	4.8/3.1	5.5/3.7	4.8/3.1	4.7/3.0
Baggage						
Internal Cu. ft/lb	40/500	6/98	0/0	23/210	0/0	16/260
External Cu. ft/lb	----	57/620	65/1,000	54/550	45/725	NA/NA
Power						
Engines	2 WM INTL FJ44-2C	2 P&WC PW615F	2 WM INTL FJ44-3A-24	2 WM INTL FJ44-2A	2 WM INTL FJ44-1AP	2 P&WC PW610F
Output (lb ea)/Flat Rating	2,400/ISA+13°C	1,460/ISA+10°C	2,490/ISA+7°C	2,300/ISA+13°C	1,965/ISA+7°C	900/ISA+10°C
Inspection Interval	3,500t	3,500t	4,000t	3,500t	3,500t	3,500t
Weights						
Max Ramp	14,100	8,730	12,625	12,590	10,800	6,029
Max Takeoff	14,000	8,645	12,500	12,500	10,700	5,995
Max Landing	13,300	8,000	11,525	11,600	9,900	5,600
Zero Fuel	11,420	6,750c	9,700c	10,000c	8,400c	4,922c
BOW	8,500	5,550	7,970	8,550	7,060	3,829
Max Payload	2,800	1,200	1,730	1,450	1,340	1,093
Useful Load	5,500	3,180	4,655	4,040	3,740	2,200
Executive Payload	1,200	1,000	1,600	1,200	1,400	800
Max Fuel	4,750	2,580	3,930	3,760	3,220	1,686
Avail. Payload w/Max Fuel	850	600	725	370	520	514
Avail. Fuel w/Max Payload	2,800	1,980	2,925	2,590	2,400	1,107
Avail. Fuel w/Exec Payload	4,400	2,180	3,055	2,840	2,340	1,400

* Assumes an existing hull value of \$300,000


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Manufacturer Model	 SpiritJet™ LR-25	Cessna Citation Mustang CE-510	Cessna Citation CJ2+ CE-525A	Beechcraft Premier 1A Model 390	Cessna Citation CJ1+ CE-525	Eclipse Aviation EA 500
Limits						
Mmo	.81	.63	.737	.80	.710	.64
Trans. Alt. FL/Vmo	FL 240/310	FL 271/250	FL 291/278	FL 280/320	FL 305/263	FL 200/285
PSI	9.4	8.3	8.9	8.4	8.5	8.3
Airport Performance						
TOFL (SL. elev ISA temp)	5,150	3,110	3,360	3,792	3,250	2,342
TOFL (5,000 @ 25°C)	8,315	6,510	5,180	6,888	5,890	4,160
Hot/High Weight Limit	13,000	8,645	12,500	12,500	10,700	5,893
Hot/High NBAA IFR Range	1,370	1,028	1,570	1,178	1,136	1,015
V2@SL ISA MTOW	132	97	116	118	111	102*
Vref w/4 Pax NBAA IFR Res	110	88	101	112	101	89
Lnd Dist w/4Pax NBAA IFR Res	2,500	2,126	2,648	2,997	2,365	2,668
Climb						
Time to Climb/Altitude	18/FL 370	20/FL 370	15/FL 370	17/FL 370	21/FL 370	24/FL 370
FAR25 Engine Out Rate (fpm)	500	530	611	586	596	533
FAR25 Engine Out Gradient (ft/nm)	300	328	316	298	322	314
Ceilings (ft)						
Certificated	41,000	41,000	45,000	41,000	41,000	41,000
All-Engine Service	41,000	41,000	45,000	41,000	41,000	41,000
Engine Out Service	23,900	26,900	23,800	28,000	21,200	25,000
Sea-Level Cabin	25,700	21,280	23,586	21,400	22,027	21,500
Long Range Cruise						
TAS	406	319	356	369	324	329
Fuel Flow	670	497	587	662	536	335
Altitude	FL 410	FL 390	FL 450	FL 410	FL 410	FL 410
Specific Range	0.61	0.642	0.606	0.557	0.604	0.982
High Speed Cruise						
TAS	482	339	413	451	383	370
Fuel Flow	1,250	609	1,096	1,203	858	471
Altitude	FL 320	FL 350	FL 350	FL 330	FL 350	FL 310
Specific Range	0.386	0.557	0.377	0.375	0.446	0.786


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NBAA IFR Ranges	LR-25					
Max Payload (w/avail fuel)						
Nautical Miles	859	725	995	787	779	503
Average Speed	396	295	368	390	343	300
Trip Fuel	2,000	1,311	2,075	1,824	1,675	670
Specific Range/Altitude	0.43/FL 390	0.553/FL 410	0.480/FL 450	0.431/FL 410	0.465/FL 410	0.751/FL 410
Max Fuel (w/avail Payload)						
Nautical Miles	2,020	1,167	1,613	1,360	1,300	1,125
Average Speed	400	306	379	408	354	308
Trip Fuel	3,950	1,959	3,157	2,934	2,569	1,255
Specific Range/Altitude	0.511/FL 410	0.596/FL 410	0.511/FL 450	0.464/FL 410	0.506/FL 410	0.896/FL 410
Four PAX (w/avail fuel)						
Nautical Miles	1,990	1,007	1,547	1,131	1,114	833
Average Speed	400	302	378	402	351	309
Trip Fuel	3,950	1,726	3,043	2,493	2,250	984
Specific Range/Altitude	0.504/FL 410	0.583/FL 410	0.508/FL 450	0.454/FL 410	0.495/FL 410	0.847/FL 410
Ferry						
Nautical Miles	2,030	1,217	1,653	1,347	1,338	1,175
Average Speed	405	316	386	410	359	309
Trip Fuel	3,950	1,979	3,185	2,893	2,598	1,301
Specific Range/Altitude	0.514/FL 410	0.615/FL 410	0.519/FL 450	0.466/FL 410	0.515/FL 410	0.903/FL 410

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Manufacturer Model		Cessna Citation Mustang CE-510	Cessna Citation CJ2+ CE-525A	Beechcraft Premier 1A Model 390	Cessna Citation CJ1+ CE-525	Eclipse Aviation EA 500
NBAA IFR Missions (4 PAX)	LR-25					
300nm						
Runway	3,101	2,453	2,459	2,937	2,606	2,100
Flight Time	0+49	1+00	0+49	0+48	0+53	0+59
Fuel Used	1,056	669	898	898	850	510
Specific Range/Altitude	0.284/FL 350	0.448/FL 370	0.334/FL 370	0.334/FL 370	0.353/FL 350	0.588/FL 350
600nm						
Runway	3,400	2,650	2,666	3,202	2,723	2,316
Flight Time	1+32	1+56	1+35	1+33	1+41	1+48
Fuel Used	1,627	1,132	1,459	1,432	1,375	885
Specific Range/Altitude	0.369/FL 410	0.530/FL 390	0.411/FL 410	0.419/FL 410	0.436/FL 390	0.678/FL 350
1,000nm						
Runway	3,765	3,120	2,967	3,642	3,115	2,342
Flight Time	2+26	3+19	2+37	2+30	2+51	3+15
Fuel Used	2,493	1,715	2,160	2,229	2,042	1,140
Specific Range/Altitude	0.401/FL 410	0.583/FL 410	0.463/FL 430	0.449/FL 410	0.490/FL 410	0.877/FL 370
Certification Basis	FAR 25 . 2008 Amendment 108	FAR 23 . 2006	FAR 23 . 2000/05	FAR 23 A5 2 2001	FAR 23 1992/00/05	FAR 23 . 2006 FAR 23 runway performance; 1,000nm mission flown w/3 pax. Certain data preliminary. *V ₅₀ used in lieu of V ₂ speed.

Comparison of Single Pilot Jets Real World Inflight Operating Costs


Manufacturer Model	 LR-25	Cessna Citation Mustang CE-510	Cessna Citation CJ2+ CE-525A	Beechcraft Premier 1A Model 390	Cessna Citation CJ1+ CE-525	Eclipse Aviation EA 500
Long Range Cruise Range-NM	1990	1007	1547	1131	1114	833
Long Range Cruise Speed (LRC)	406	302	356	402	354	309
Lb./HR @ LRC	662	497	585	662	536	335
Gallons/HR @ LRC	99	74	87	99	80	50
Fuel Cost/hour	543.43	407.99	480.22	543.43	440.00	275.00
Fuel \$/NM	1.34	1.35	1.35	1.35	1.24	0.89
Engine Warranty/HR	81.09	76.74	82.91	81.09	96.10	76.45
Two Engine Warranty/NM	0.40	0.51	0.47	0.40	0.54	0.49
Fuel & Eng. \$/NM	1.74	1.86	1.81	1.76	1.79	1.38

Comparison of Single Pilot Jets

Value Analysis

In order to accurately compare the differing attributes of various aircraft it is necessary to utilize value indexes for various operating conditions in which the aircraft will be operated. Two methods must be utilized to reflect the "Best Value".

The first method is in the cost of operation vs the capability of the plane regarding the speed and range of the aircraft.

Manufacturer Model	 LR-25	Cessna Citation Mustang CE-510	Cessna Citation CJ2+ CE-525A	Beechcraft Premier 1A Model 390	Cessna Citation CJ1+ CE-525	Eclipse Aviation EA 500	Sierra Super II	Sierra Eagle II
Cost per NM of flight	\$2.19	\$1.85	\$192	\$2.02	\$2.05	\$1.33	\$2.21	\$2.04
Initial cost of acquisition	\$2,300,000.00	\$2,766,000.00	\$6,370,000.00	\$6,208,600.00	\$4,755,000.00	\$2,352,975.00	\$3,450,000.00	\$2,950,000.00
Range of Aircraft-4 PAX	1,980	1,007	1,559	1,131	1,138	690	1,775	1,550
Longe Range Cruise Speed	420	319	356	369	324	341	365	360
Speed vs cost of flight index	192	172	186	183	158	256	166	176
Range vs cost of flight index	904	543	813	560	555	517	805	760
Combined speed and range index	379,853	173,350	289,399	206,671	179,860	176,360	293,806	273,467

The second method of comparison is the initial cost vs high speed cruise and range.

High Speed Cruise	480	339	413	451	383	370	420	390
Initial Cost vs High speed cruise	2.09	1.23	0.65	0.73	0.81	1.57	1.22	1.32
Initial cost vs range of aircraft	8.61	3.64	2.45	1.82	2.39	2.93	5.14	5.25
Speed & Range vs initial cost	4,132.17	1,234.18	1,010.78	821.57	916.62	1,085.01	2,160.87	2,049.15

When combining both initial cost indexes and operating costs we have the following:

Total cost vs speed index	109	71	35	40	51	62	74	75
Total cost vs range index	95	67	30	33	43	57	64	69

Bold numbers represent the highest scores

*Includes \$300,00.00 hull value plus the cost of modification and upgrades