




## Comparison of Physical Characteristics

Manufacturer		Bombardier	Cessna	Cessna	Raytheon	Bombardier	Cessna
Model		Learjet 35A	CJ2+	Bravo	Beechjet	Learjet 31A	Citation-Encore
Designation	LR-25	LR-35A	CE-525A	CE-550	BE-400A	LR-31A	CE-560
Yearbook		1993	2005	2000	2000	2000	2000
Pilot	1	2	1	2	2	2	2
PAX Typical	7	7	8	7	7	7	7
PAX Maximum	10	10	8	11	9	10	11
Wing Loading	59	72.2	47.3	45.8	66.7	64.3	51.6
Power Loading	2.92	2.61	2.6	2.56	2.72	2.43	2.45
Length - External	43	49	48	47	48	49	48.9
Height - External	12	12	14	15	14	12	15.2
Span - External	36	40	50	52	44	44	54.1
Length - Internal	12.1	12.9	13.6	15.7	15.5	17.1	17.3
Height - Internal	4.3	4.3	4.8	4.7	4.8	4.4	4.7
Width - Internal (max)	5	5	5	5	5	5	4.9
Width - Internal (floor)	3.2	3.1	3.1	3.2	3.8	3	3.2
Cabin Volume ft^3	270	290	245	284	286	290	313
Engine Manufacturer	Williams-Rolls	Garrett	Williams-Rolls	P&WC	P&WC	Hon	P&WC
Engine Model	FJ44-2C	TFE 731	FJ44-2C	PW530A	JT15D-5	TFE731-2-4-3B	PW535A
Engine Type	Turbo-Fan	Turbo-Fan	Turbo-Fan	Turbo-Fan	Turbo-Fan	Turbo-Fan	Turbo-Fan
Number of Engines	2	2	2	2	2	2	2
Output	2,400	3,500	2,400	2,887	2,965	3,500	3,400
Max. Ramp (lb.)	14,100	18,500	12,625	15,000	16,300	17,200	16,830
Max. Takeoff (lb.)	14,000	18,300	12,500	14,800	16,100	17,000	16,630
Max. Landing (lb.)	13,300	15,300	11,525	13,500	15,700	16,000	15,200
Zero Fuel (lb.)	11,400	13,500	9,700	11,300	13,000	13,500	12,600
BOW (lb.)	8,350	10,519	7,895	9,350	10,915	11,140	10,525
Max. Payload (lb.)	2,800	2,981	1,805	1,950	2,085	2,360	2,075
Useful Load (lb.)	5,750	7,981	4,730	5,650	5,385	6,060	6,305
Executive Payload (lb.)	1,200	1,400	1,600	1,400	1,400	1,400	1,400
Max. Fuel (lb.)	4,450	6,198	3,930	4,824	4,912	4,124	5,431
PYL - Max. Fuel (lb.)	1,000	1,783	800	826	473	1,936	874
Fuel - Max. PYL (lb.)	2,950	5,000	2,925	3,700	3,300	3,700	4,230
Fuel - Exec PYL (lb.)	4,550	6,198	3,130	4,250	3,985	4,660	4,905

## Comparison of Airport and Cruise Performance

Manufacturer		Bombardier	Cessna	Cessna	Raytheon	Bombardier	Cessna
Model		Learjet 35A	CJ2+	Bravo	Beechjet	Learjet 31A	Citation-Encore
Designation	LR-25	LR-35A	CE-525A	CE-550	BE-400A	LR-31A	CE-560
Yearbook		1993	2005	2000	2000	2000	2000
Mmo	0.81	0.81	0.73	0.7	0.78	0.81	0.755
Vmo	320	350	275	275	320	325	292
Cabin, PSI	9.4	9.4	8.9	8.9	9.1	9.4	8.9
TO (SL/ISA)	4,885	4,972	3,420	3,600	4,169	3,490	3,560
TOFL (5000 ft/ISA + 20°C)	7,965	10,100	5,080	5,520	6,322	6,251	5,410
Mission Weight	12,800	18,300	12,500	14,800	15,850	17,000	16,630
Hot/High NBAA/IFR	1,323	2,109	1,574	1,643	1,216	1,258	1,608
V2	126	139	NA	121	122	124	115
Vref	106	116	NA	101	105	113	99
Landing Distance - ft.	2,550	2,550	2,650	2,485	2,960	2,507	2,437
<b>Climb</b>							
Time to Climb to 37,000 ft.	28	20	17	19	18	13	16
FAR 25 Eng-Out Rate (fpm)	500	1,280	NA	825	560	741	873
FAR 25 Eng-Out Gradient (ft/nm)	300	395	NA	419	273	358	456
<b>Ceilings (ft)</b>							
Certified	41,000	45,000	45,000	45,000	45,000	51,000	45,000
All Engine Service	41,000	41,000	NA	43,000	43,450	45,000	45,000
Engine-Out Service	20,350	25,000	NA	27,750	20,600	26,200	32,500
<b>Long Range Cruise</b>							
KTAS	420	424	353	342	422	420	358
Flight Level	400	430	450	450	450	470	450
Specific Range	0.49	0.43	0.61	0.56	0.45	0.50	0.50
<b>High Speed Cruise</b>							
KTAS	482	451	407	400	447	456	427
Flight Level	320	410	350	350	410	430	370
Specific Range	0.386	0.373	0.381	0.352	0.386	0.408	0.329

**Comparison of NBAA IFR Ranges**

<b>Manufacturer</b>		Bombardier	Cessna	Cessna	Raytheon	Bombardier	Cessna
<b>Model</b>		Learjet 35A	CJ2+	Bravo	Beechjet	Learjet 31A	Citation-Encore
Designation	LR-25	LR-35A	CE-525A	CE-550	BE-400A	LR-31A	CE-560
Yearbook		1993	2005	2000	2000	2000	2000
Alternate Airport Range	200	200	200	200	200	200	200

**Max. Payload w/Fuel**

lbs	2,800	2,981	1,805	1,950	2,085	2,360	2,075
nmi	1,049	1,330	1,068	900	678	691	1,027
Block Speed	396	403	362	342	377	403	378
Specific Range	0.43	0.35	0.47	0.39	0.33	0.36	0.38
FL	400	410	450	450	430	450	450

**Max. Fuel w/Payload**

lbs	850	1,783	800	826	473	1,936	874
nmi	1,828	1,330	1,586	1,614	1,459	1,109	1,577
Block Speed	417	403	373	342	394	403	386
Specific Range	0.44	0.346	0.504	0.456	0.388	0.384	0.406
FL	400	410	450	450	430	430	450


**Max. Fuel w/4 PAX**

nmi	1,828	1,924	1,550	1,531	1,294	1,258	1,586
Block Speed	417	414	372	343	392	406	387
Specific Range	0.44	0.37	0.50	0.46	0.38	0.42	0.41
FL	400	450	450	450	430	450	450

**Ferry**

nmi	1,880	2,200	1,623	1,757	1,568	1,333	1,631
Block Speed	424	411	378	346	389	404	393
Specific Range	0.46	0.41	0.51	0.48	0.41	0.44	0.42
FL	400	450	450	450	450	450	450

**Comparison of NBAA IFR 4 PAX Missions**

<b>Manufacturer</b>		Bombardier	Cessna	Cessna	Raytheon	Bombardier	Cessna
<b>Model</b>		Learjet 35A	CJ2+	Bravo	Beechjet	Learjet 31A	Citation-Encore
Designation	LR-25	LR-35A	CE-525A	CE-550	BE-400A	LR-31A	CE-560
Yearbook		1993	2005	2000	2000	2000	2000

**300 nm Mission**

Runway	2,962	2,755	2,729	2,808	2,904	2,476	2,896
Flight Time	0 + 49	0 + 44	0 + 51	0 + 53	0 + 46	0 + 44	0 + 48
Fuel	990	1,047	901	1,057	1,120	1,029	1,090
Specific Range	0.30	0.29	0.33	0.28	0.27	0.29	0.28
FL	320	410	370	370	350	430	390


**600 nm Mission**

Runway	3,070	2,932	2,746	2,983	3,089	2,666	2,923
Flight Time	1 + 31	1 + 24	1 + 36	1 + 42	1 + 28	1 + 25	1 + 32
Fuel	1,486	1,851	1,483	1,681	1,748	1,682	1,832
Specific Range	0.40	0.32	0.41	0.36	0.34	0.36	0.33
FL	400	410	410	410	430	450	410

**1000 nm Mission**

Runway	3,420	3,258	3,001	3,220	3,544	2,944	3,056
Flight Time	2 + 24	2 + 20	2 + 39	2 + 49	2 + 24	2 + 20	2 + 31
Fuel	2,291	2,771	2,205	2,458	2,742	2,605	2,695
Specific Range	0.44	0.36	0.45	0.41	0.37	0.38	0.37
FL	400	430	430	430	430	450	430

## SpiritJet Performance and Cost Comparison

<b>Manufacturer</b>		Bombardier	Bombardier	Bombardier	Cessna	Cessna	Cessna	Hawker	2008 Beech
<b>Model</b>		Learjet 35A	Learjet 25D	Learjet 40XR	Citation CJ3	Citation II	Citation	400	B200GT
<b>Base Price</b>	\$2,3M*	2.1M	.3M	9.3M	7.5M	2.0M	6.1M	7.2M	5.3M
<b>Passenger Seats</b>	7 to 8	7 to 8	7 to 8	7 to 7	7 to 8	7 to 8	7 to 11	7 to 9	8 to 9
<b>Certified Ceiling</b>	41,000	45,000	45,000	51,000	45,000	43,000	45,000	45,000	35,000
<b>Max. take-off wt.</b>	14,000	18,300	15,000	21,000	13,870	14,100	14,800	16,300	12,500
<b>Max. Payload</b>	2,800	2,981	2,500	2572	1810	2090	1920	2050	2240
<b>Max. Fuel</b>	4,750	6,198	6,100	5375	4710	4972	4824	4912	3645
<b>Mmo</b>	0.81	0.81	0.81	0.81	0.74	0.70	0.70	0.78	N/A
<b>High Speed Cruise</b>	482	451	443	452	415	374	400	450	308
<b>Range, Ferry</b>	1,940	2,200	1,150	1,693	1,916	1,436	1703	1557	1431
<b>Range w/ 4PAX</b>	1,828	1,924	1,150	1,601	1,740	1,413	1519	1333	1079

### Real World Direct Operating Costs for Fuel and Engine Reserves

<b>Long Range Cruise</b>	420	424	420	434	351	307	342	414	256
<b>gal/hr @ LRC Cruise</b>	128	147	211	143	92	99	90	140	64
<b>Fuel \$/hr @ \$5.90/gal</b>	755.2	\$867.30	\$1,244.90	\$843.70	\$542.80	\$584.10	\$531.00	\$826.00	\$377.60
<b>Fuel \$/Kt.mile</b>	1.8	\$2.05	\$2.96	\$1.94	\$1.55	\$1.90	\$1.55	\$2.00	\$1.48
<b>JSSI warranty/hr</b>	81.09	\$189.18	\$169.03	\$145.32	\$82.91	\$136.40	\$114.07	\$137.33	\$87.67
<b>2 eng. \$/NM</b>	0.39	\$0.89	\$0.80	\$0.67	\$0.47	\$0.89	\$0.67	\$0.66	\$0.68
<b>Fuel &amp; Eng. \$/NM</b>	2.18	\$2.94	\$3.77	\$2.61	\$2.02	\$2.79	\$2.22	\$2.66	\$2.16

### 1,000 NM Trip

<b>Flight Time (hr+min)</b>	2+24	2+20	2+24	2+15	2+37	2+55	2+49	2+24	3+27
<b>Flight Time (fractions of hour)</b>	2.40	2.33	2.40	2.25	2.62	2.92	2.82	2.40	3.45
<b>Engine Time (2 engines)</b>	4.80	4.66	4.80	4.50	5.24	5.84	5.64	4.80	6.90
<b>Fuel in lb</b>	2,291	2,771	4,900	3,240	2,313	2,947	2,458	2,742	2,265
<b>Fuel in gallons</b>	341	412	729	482	344	439	366	408	337
<b>Fuel \$/hr @ \$5.90/gal</b>	2,011	2,433	4,302	2,845	2,031	2,587	2,158	2,407	1,989
<b>Engine Reserve Cost</b>	389.23	881.58	881.34	653.94	434.45	796.58	643.35	659.18	604.92
<b>Total fuel/eng cost/trip</b>	2400.68	3314.45	5113.43	3498.58	2465.21	3383.97	2801.42	3066.59	2593.54
<b>Cost per Mile</b>	2.40	3.31	5.11	3.50	2.47	3.38	2.80	3.07	2.59
<b>Average Speed</b>	417	429	417	444	382	342	355	417	290

\* Assumes hull value of \$300,000.00 plus modification cost and upgrades