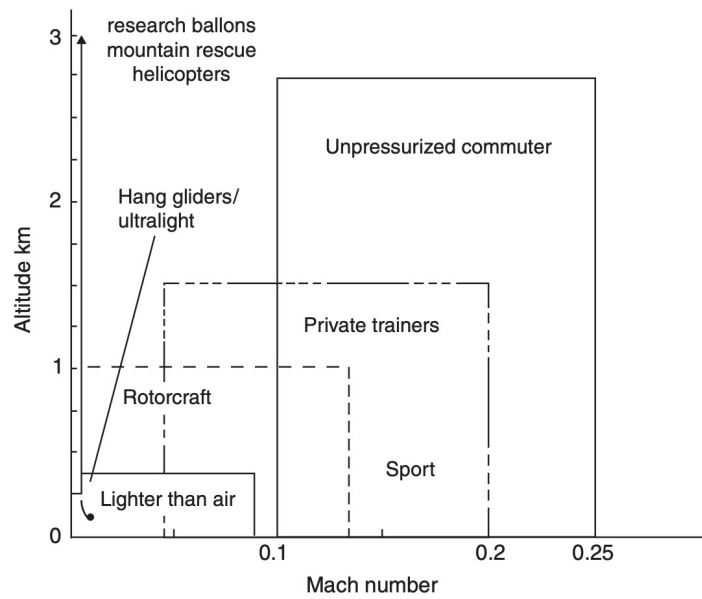
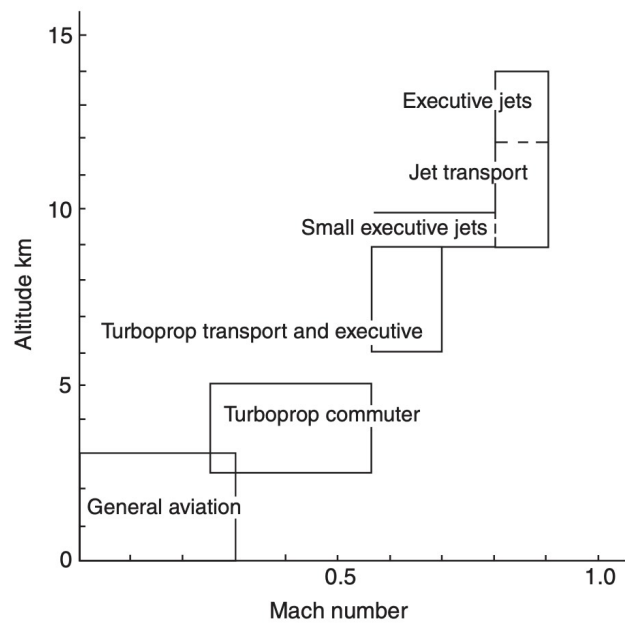


Operational Environment

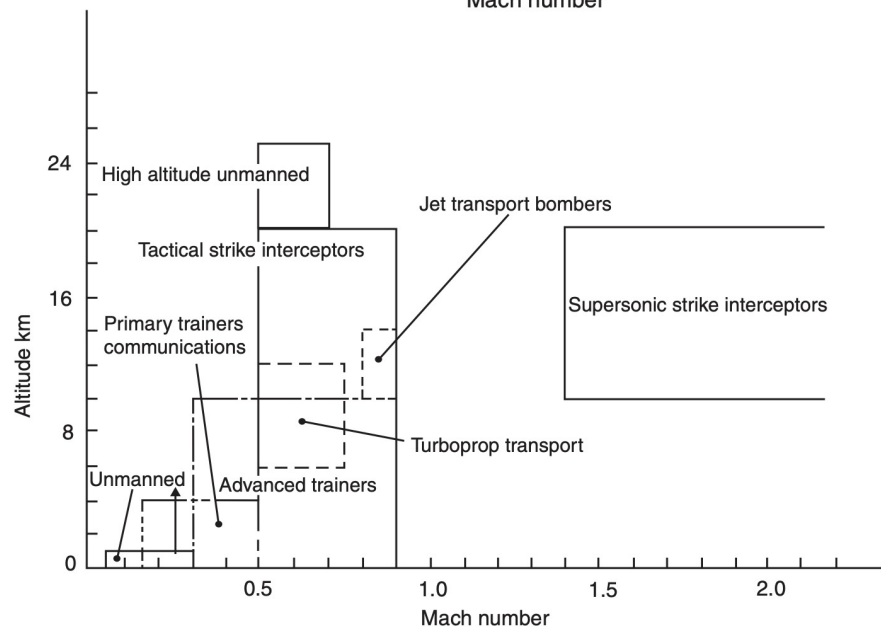
General Aviation



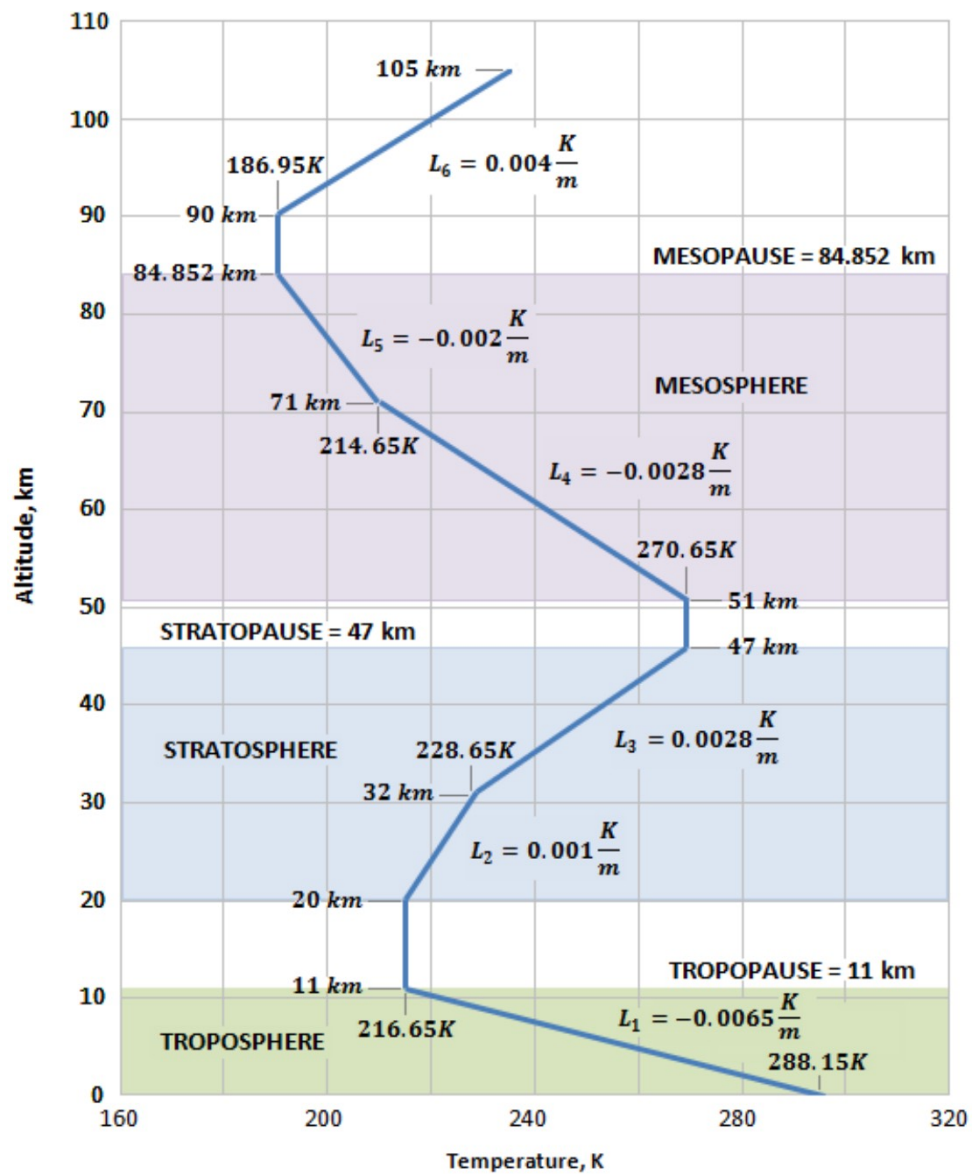
Civil Aviation



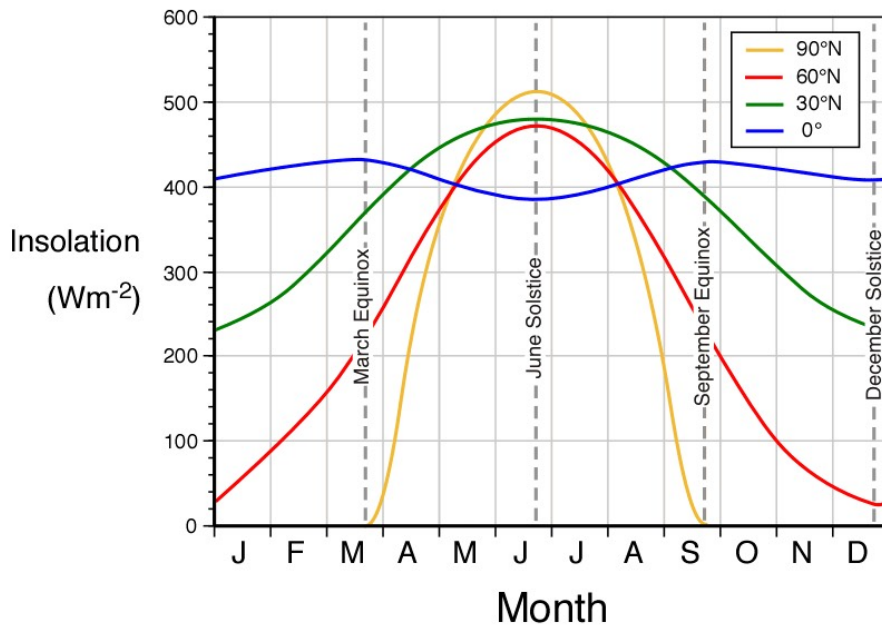
Military Aircrafts



International Standard Atmosphere

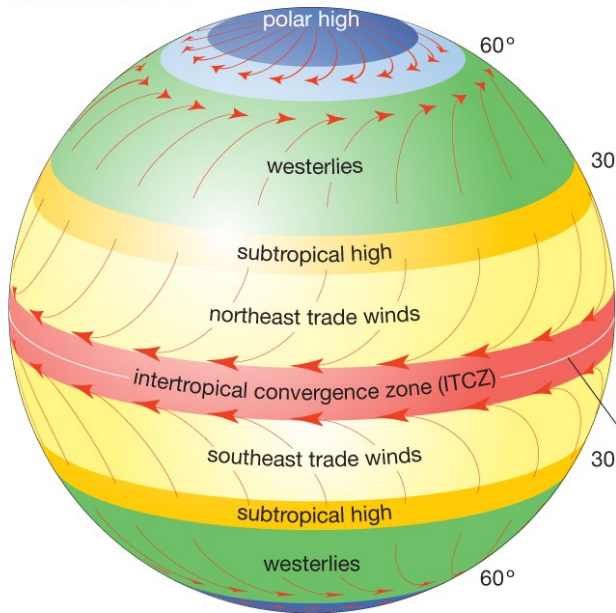


Solar Insolation (radiation from Sun)



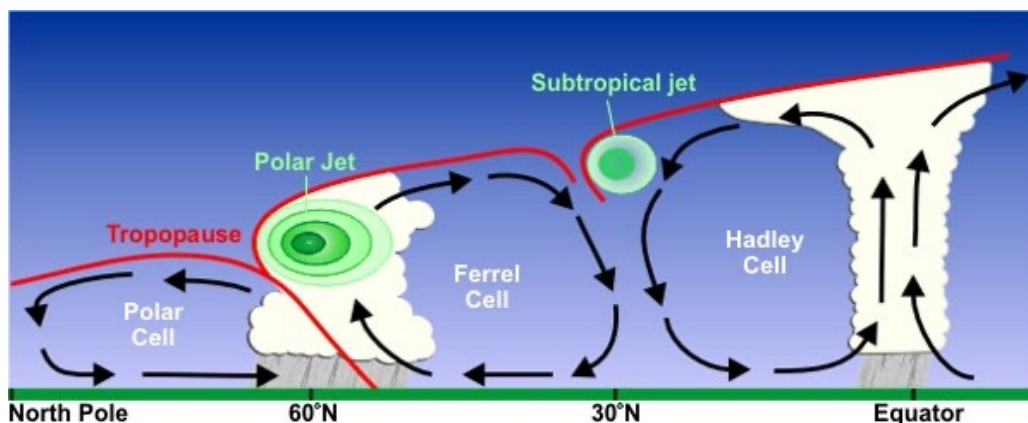
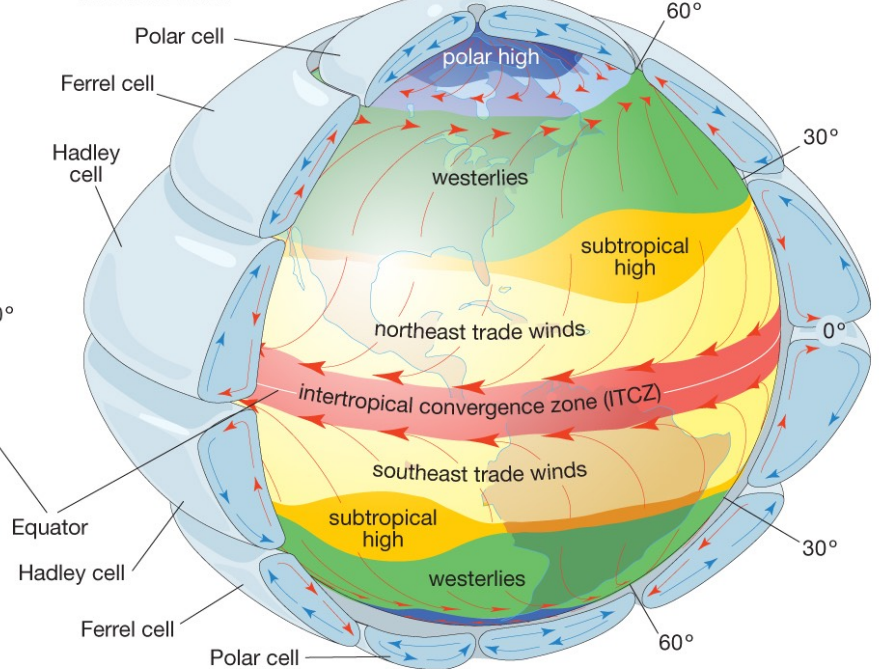
Circulation patterns in atmosphere

Idealized Earth



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Actual Earth



Model for Tropical Atmosphere

Parameters at base altitudes

ISA Model

b	\mathcal{H} (km')	z (km)	T (K)	L_b (K/km')	p_b (Pa)
0	0	0.00	288.15	-6.5	101325.00
1	11	11.02	216.65	0.0	22632.06
2	20	20.06	216.65	+1.0	5474.89
3	32	32.16	228.65	+2.8	868.02
4	47	47.35	270.65	0.0	110.91
5	51	51.41	270.65	-2.8	66.94
6	71	71.80	214.65	-2.0	3.96
7	80	81.02	196.65		0.89

ITRA-86 Model

b	\mathcal{H} (km')	z (km)	T (K)	L_b (K/km')	p_b (Pa)
0	0	0.00	300.15	-6.0	101000.00
1	6	6.01	264.15	-6.5	48861.38
2	16	16.04	199.15	+2.3	11102.42
3	46	46.34	268.15	0.0	134.87
4	51	51.41	268.15	-3.0	71.41
5	74	74.87	199.15	-0.6	2.43
6	80	81.02	195.55	0.0	0.86

Parameters at Sealevel

Quantity	Symbol	Unit	ISA Value	ITRA Value
Geopotential altitude	\mathcal{H}_o	km'	0	0
Geometric altitude	z_o	km	0	0
Kinetic temperature	T_o	K	288.5	300.15
Pressure	p_o	Pa	101325	101000
Density	ρ_o	kg/m ³	1.225	1.172
Acceleration due to gravity	g_o	m/s ²	9.80665	9.78852
Mean molecular mass	\mathcal{M}_o	kg/(kmol)	28.9644	28.9644

Comparing temperature
at different latitudes

