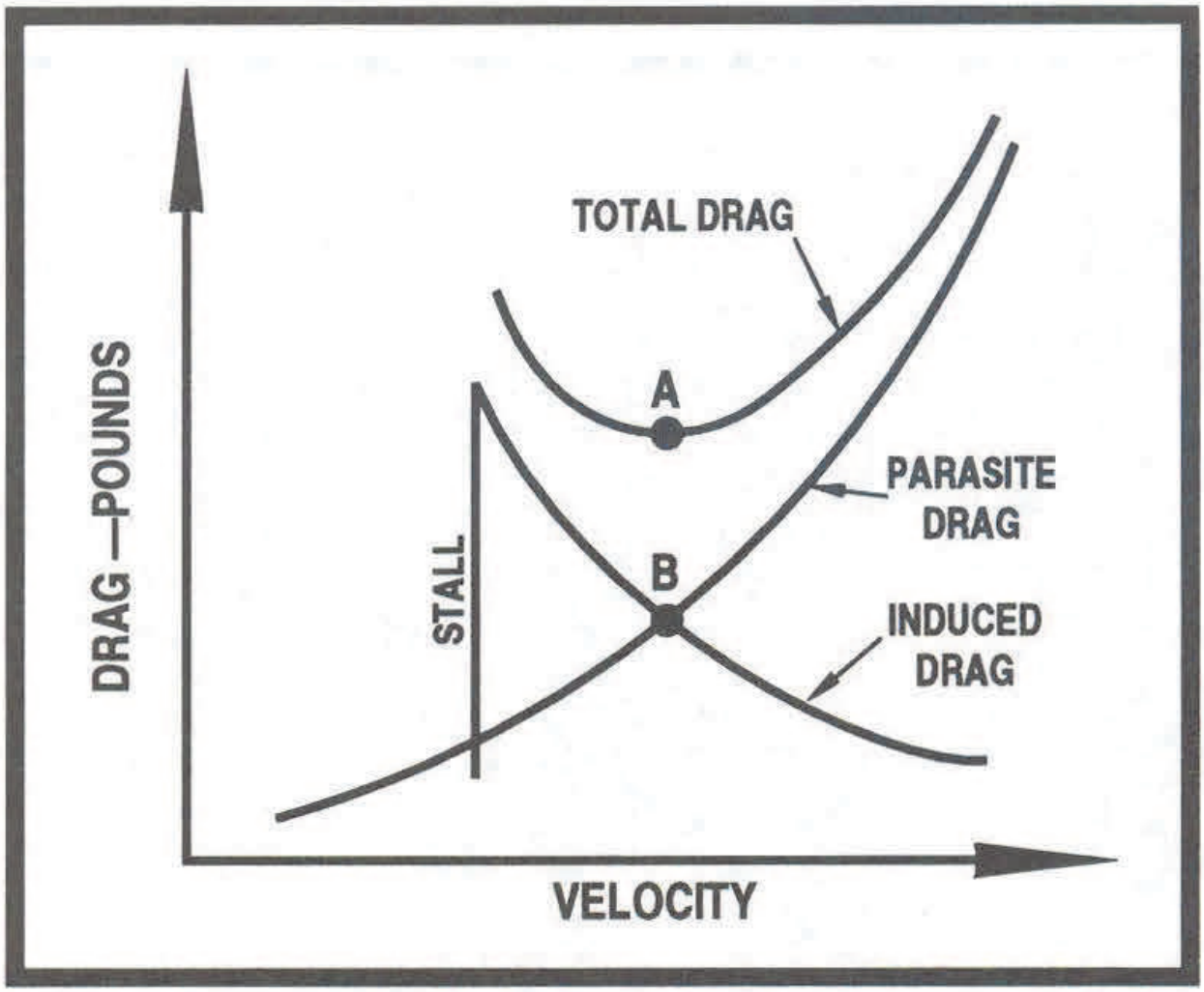


FIGURE 20.—Drag Chart.

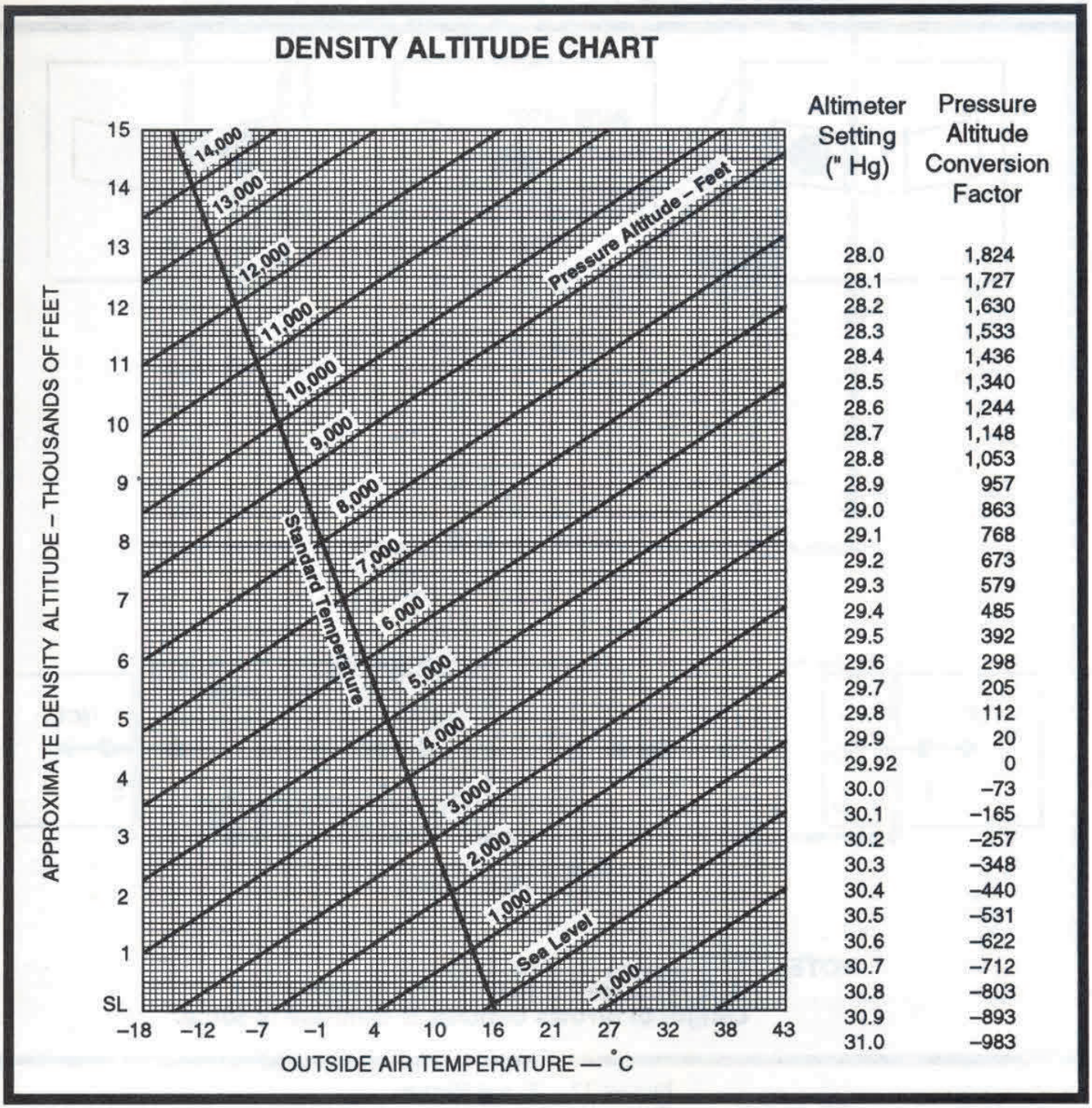


FIGURE 24.—Density Altitude Chart.

AIRSPEED CALIBRATION — NORMAL SYSTEM

Flaps 0°		Flaps 15°		Flaps 45°	
KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
80	84	70	79	70	76
100	102	80	86	80	84
120	122	90	94	90	93
140	141	100	103	100	102
160	161	110	112	110	111
180	181	120	121	120	120
200	201	130	131	130	129
220	221	140	141	140	138
240	242	150	151		

KIAS — INDICATED AIRSPEED IN KNOTS
KCAS — CALIBRATED AIRSPEED IN KNOTS

STALL SPEEDS — KCAS

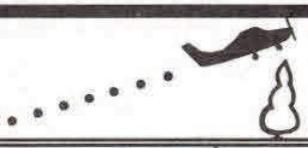
4600 LB GROSS WEIGHT

CONFIGURATION	ANGLE OF BANK			
	0°	20°	40°	60°
Gear and Flaps Up	84	87	97	119
Gear Down and Flaps 15°	80	83	92	113
Gear Down and Flaps 45°	76	79	87	108

FIGURE 25.—Airspeed Calibration/Stall Speeds Chart.

TAKEOFF DATA

TAKEOFF DISTANCE WITH 10° FLAPS FROM HARD-SURFACED RUNWAY



GROSS WEIGHT LB	KIAS AT 50 FT	HEAD WIND KTS	AT SEA LEVEL & 15° C		AT 2500 FT & 10° C		AT 5000 FT & 5° C		AT 7500 FT & 0° C	
			GROUND ROLL	TOTAL TO CLEAR 50' OBS	GROUND ROLL	TOTAL TO CLEAR 50' OBS	GROUND ROLL	TOTAL TO CLEAR 50' OBS	GROUND ROLL	TOTAL TO CLEAR 50' OBS
2200	55	0	345	680	405	770	480	885	580	1040
		15	205	460	245	525	295	615	365	725
		30	100	275	120	320	155	380	195	460
2600	60	0	500	915	585	1045	705	1230	855	1470
		15	310	635	370	735	455	870	560	1055
		30	165	395	200	465	255	565	325	695
3000	64	0	695	1210	820	1405	990	1675	1205	2045
		15	450	855	535	1005	660	1215	815	1505
		30	250	555	310	665	390	820	500	1030

NOTE: INCREASE DISTANCES 10% FOR EACH 14° C ABOVE STANDARD TEMPERATURE FOR PARTICULAR ALTITUDE.

FIGURE 26.—Takeoff Data Chart.

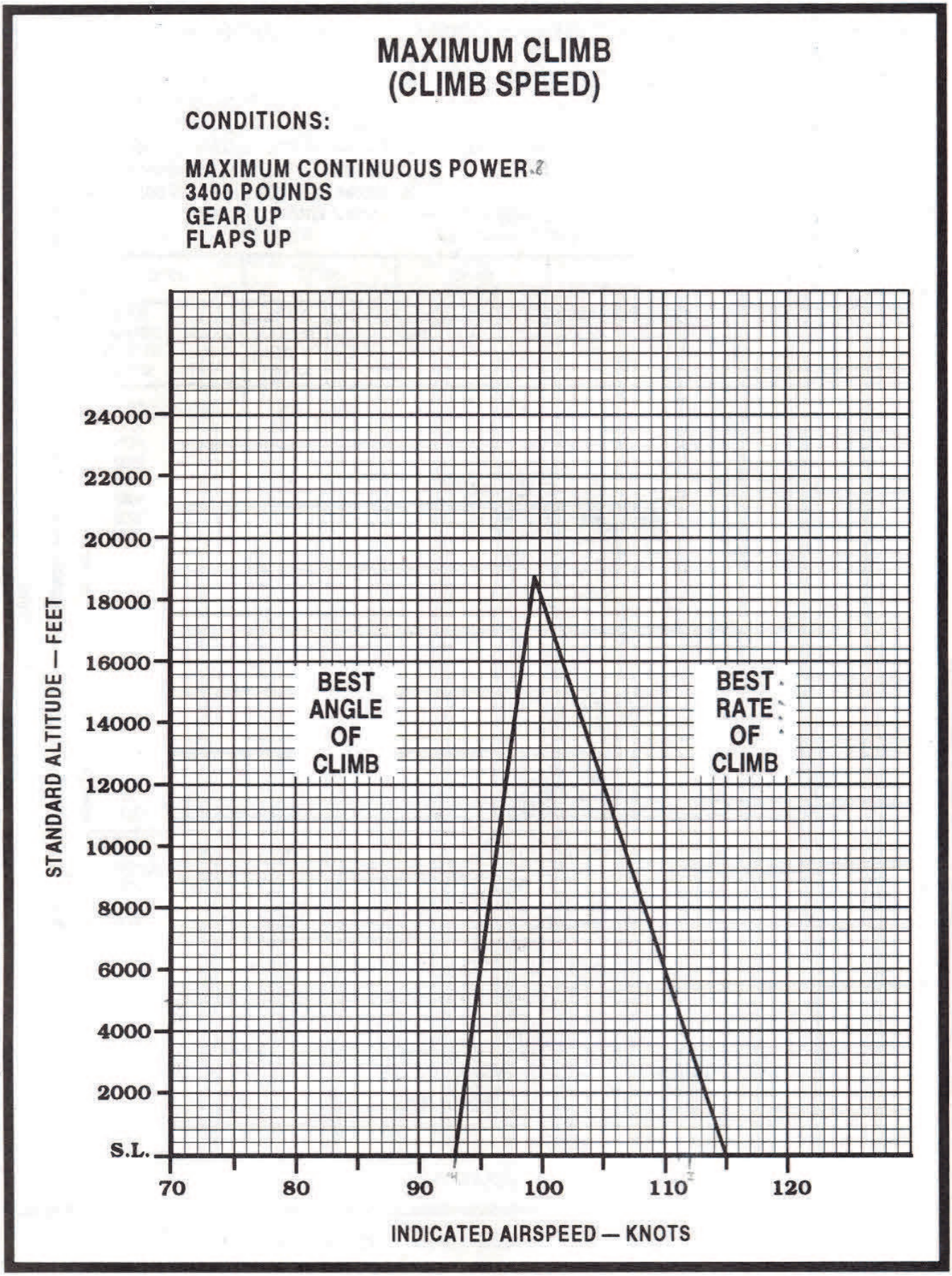


FIGURE 27.—Maximum Climb Chart.

SHORT-FIELD TAKEOFF DISTANCE

CONDITIONS:
1. Power – FULL THROTTLE and 2700 RPM before releasing brakes.
2. Mixtures — LEAN for field elevation.
3. Cowl flaps — OPEN.
4. Wing flaps — UP.
5. Level, dry, hard-surface runway.

NOTE:
1. Increase total distance 8 percent for operation on dry, sod runway.
2. Decrease total distance 7 percent for each 10 knots of headwind.
3. Increase total distance 5 percent for each 2 knots of tailwind.

WEIGHT-POUNDS	TAKEOFF TO 50-FOOT OBSTACLE SPEED-KIAS	PRESSURE ALTITUDE-FEET	20 C		30 C		40 C	
			GROUND ROLL - FEET	TOTAL DISTANCE TO CLEAR 50' OBS	GROUND ROLL - FEET	TOTAL DISTANCE TO CLEAR 50' OBS	GROUND ROLL - FEET	TOTAL DISTANCE TO CLEAR 50' OBS
5500	82	Sea Level	1390	1760	1490	1890	1590	2020
		1000	1530	1950	1640	2080	1760	2230
		2000	1680	2150	1810	2300	1940	2470
		3000	1860	2380	2000	2550	2150	2750
		4000	2060	2650	2220	2850	2380	3070
		5000	2280	2950	2460	3190	2640	3450
		6000	2530	3310	2730	3590	2950	3900
		7000	2830	3750	3160	4190	3410	4570
		8000	3280	4420	3540	4840	3830	5330
		9000	3690	5170	4000	5730	4330	6420
		10,000	4150	6140	4500	6980	4880	8130
5100	78	Sea Level	1160	1470	1240	1570	1330	1680
		1000	1280	1620	1370	1730	1470	1850
		2000	1400	1780	1500	1910	1610	2040
		3000	1550	1960	1660	2100	1780	2260
		4000	1710	2180	1840	2340	1970	2510
		5000	1890	2410	2030	2590	2180	2790
		6000	2090	2690	2250	2890	2420	3120
		7000	2330	3010	2510	3250	2700	3520
		8000	2600	3400	2800	3690	3030	4010
		9000	2920	3890	3270	4360	3530	4760
		10,000	3390	4580	3660	5030	3960	5560
4700	75	Sea Level	960	1220	1020	1300	1090	1380
		1000	1050	1340	1120	1430	1200	1520
		2000	1150	1460	1230	1560	1320	1670
		3000	1270	1610	1360	1720	1460	1840
		4000	1400	1770	1500	1900	1610	2030
		5000	1540	1960	1650	2100	1780	2250
		6000	1700	2170	1830	2330	1970	2500
		7000	1890	2410	2030	2590	2190	2790
		8000	2100	2700	2260	2910	2440	3140
		9000	2350	3040	2540	3290	2730	3570
		10,000	2620	3430	2830	3730	3060	4060

FIGURE 28.—Short-Field Takeoff Distance Chart.

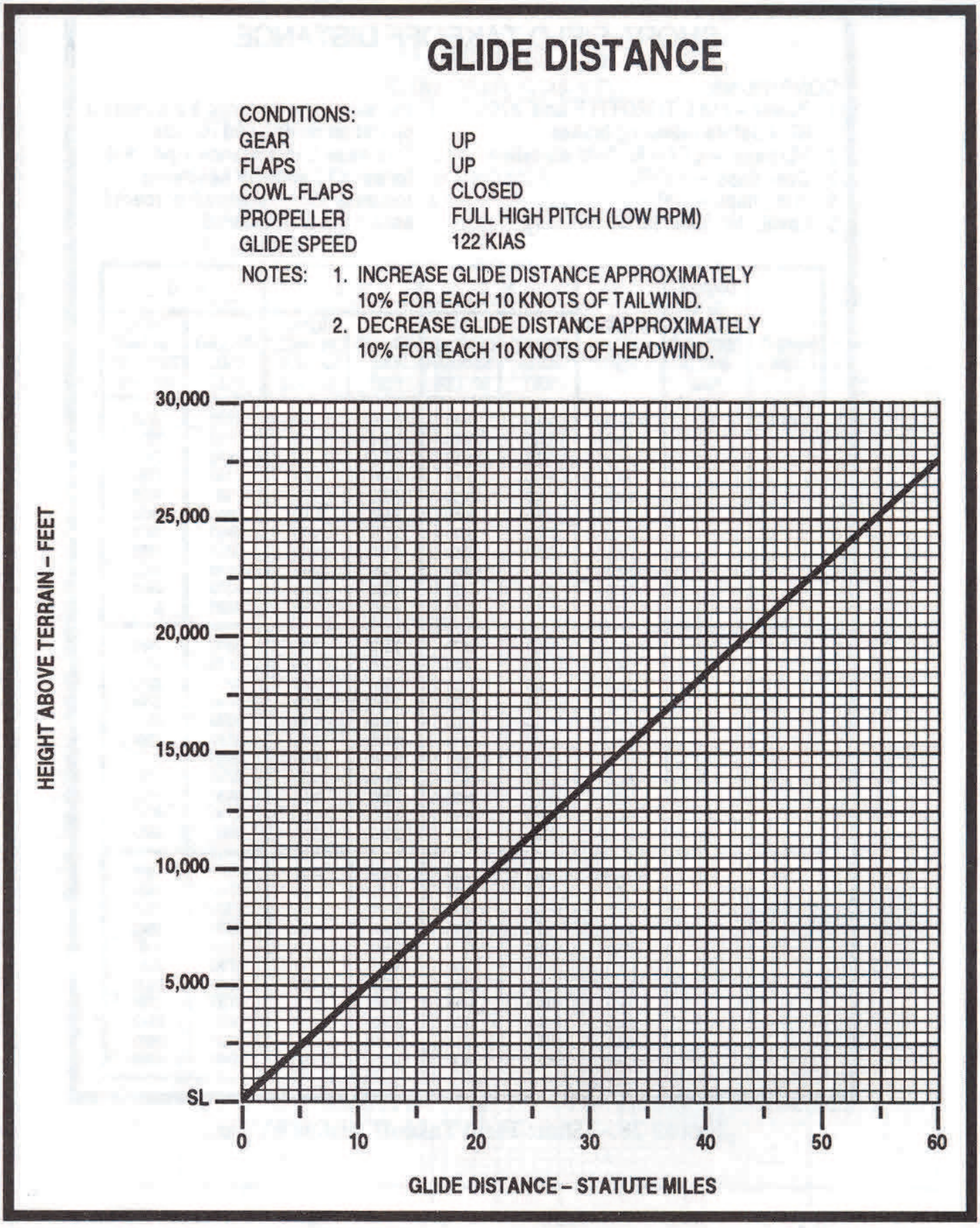


FIGURE 29.—Glide Distance Chart.

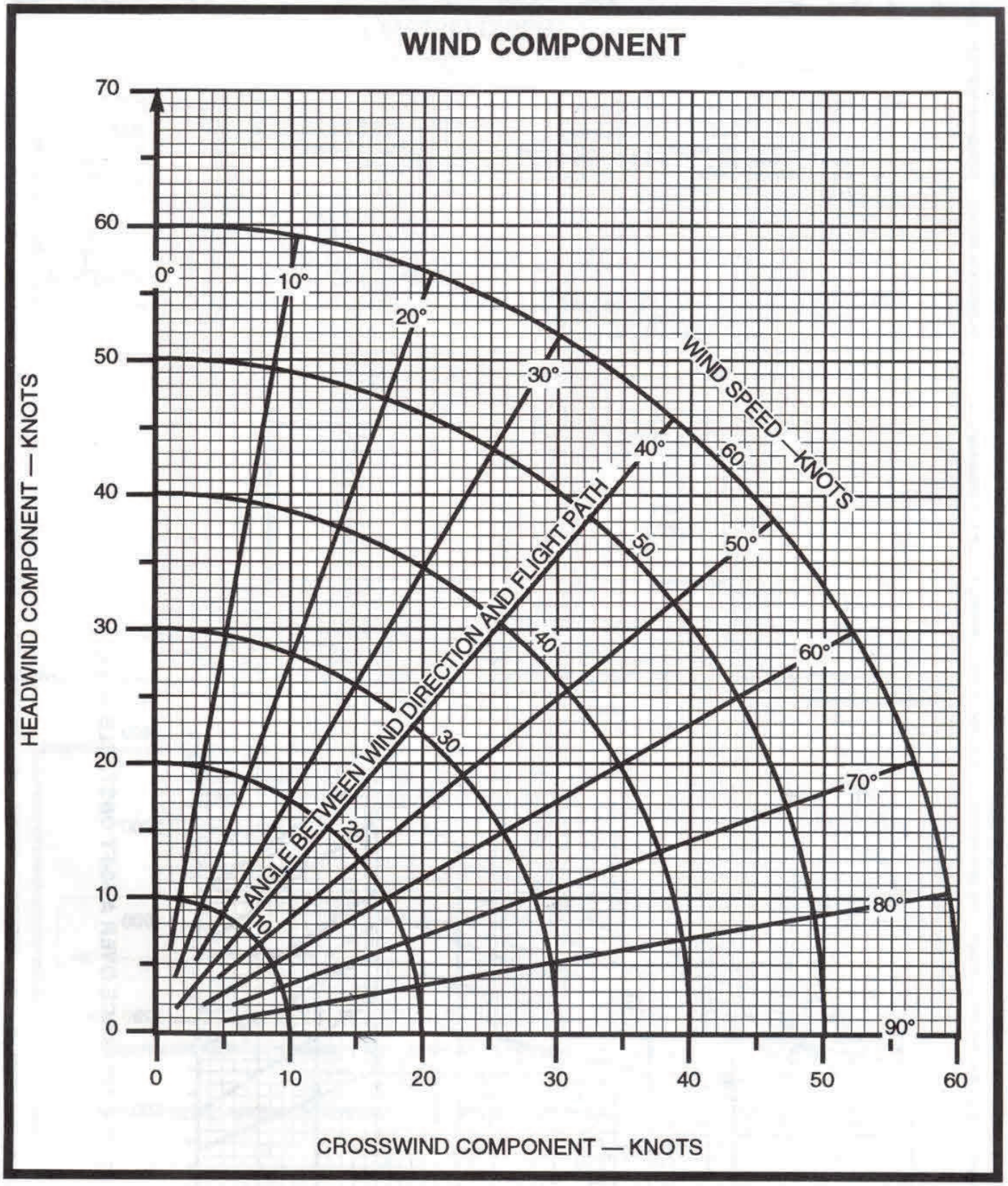


FIGURE 30.—Wind Component Chart.

LANDING DISTANCE

CONDITIONS:

POWER	AS REQUIRED TO MAINTAIN 800 FT/MIN DESCENT ON APPROACH
FLAPS	DOWN
RUNWAY	PAVED, LEVEL, DRY SURFACE
APPROACH SPEED	IAS AS TABULATED

NOTE: GROUND ROLL IS APPROX. 53% OF TOTAL LANDING DISTANCE OVER A 50 FT OBSTACLE.

EXAMPLE:

OAT	27 °C
PRESSURE ALTITUDE	4000 FT
LANDING WEIGHT	3200 LB
HEADWIND	10 KTS
TOTAL LANDING DISTANCE OVER A 50 FT OBSTACLE	1475 FT
GROUND ROLL (53% OF 1475)	782 FT
IAS APPROACH SPEED	87 MPH IAS

WEIGHT POUNDS	IAS APPROACH SPEED (ASSUMES ZERO INSTR. ERROR)	
	MPH	KNOTS
3400	90	78
3200	87	76
3000	84	73
2800	81	70
2600	78	68
2400	75	65

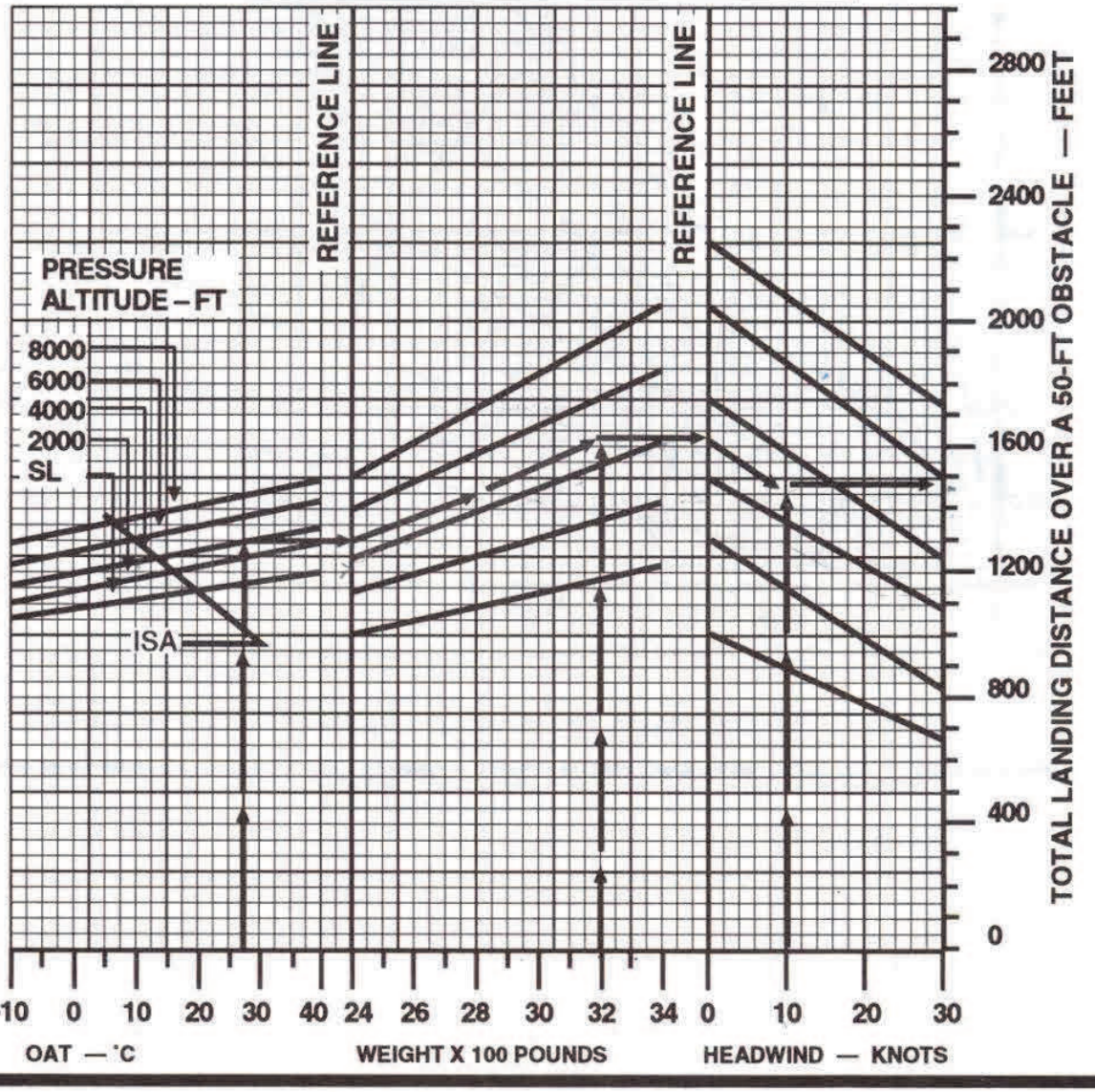


FIGURE 31.—Landing Distance Chart.

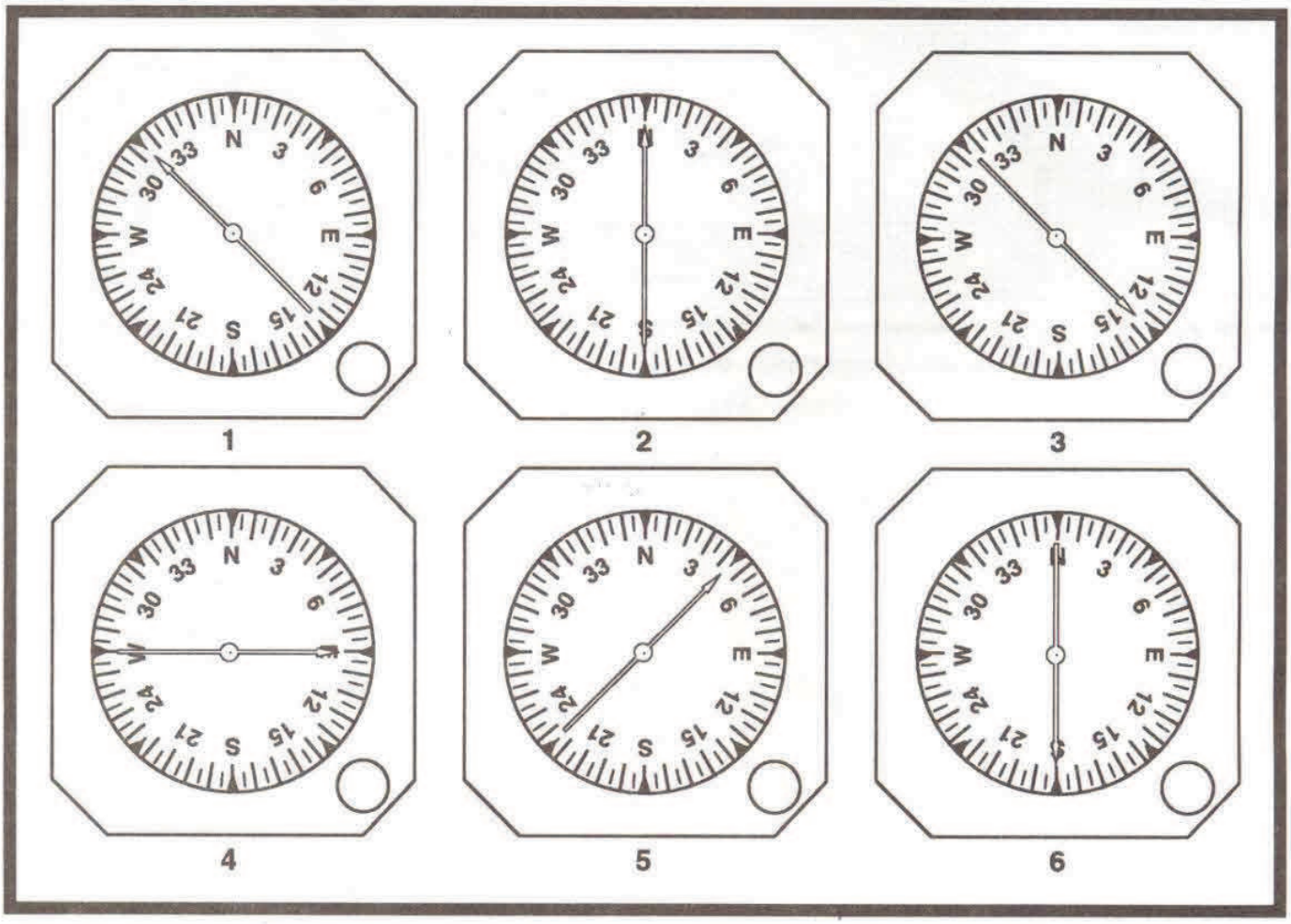


FIGURE 41.—ADF Indicators (Fixed-Dial).

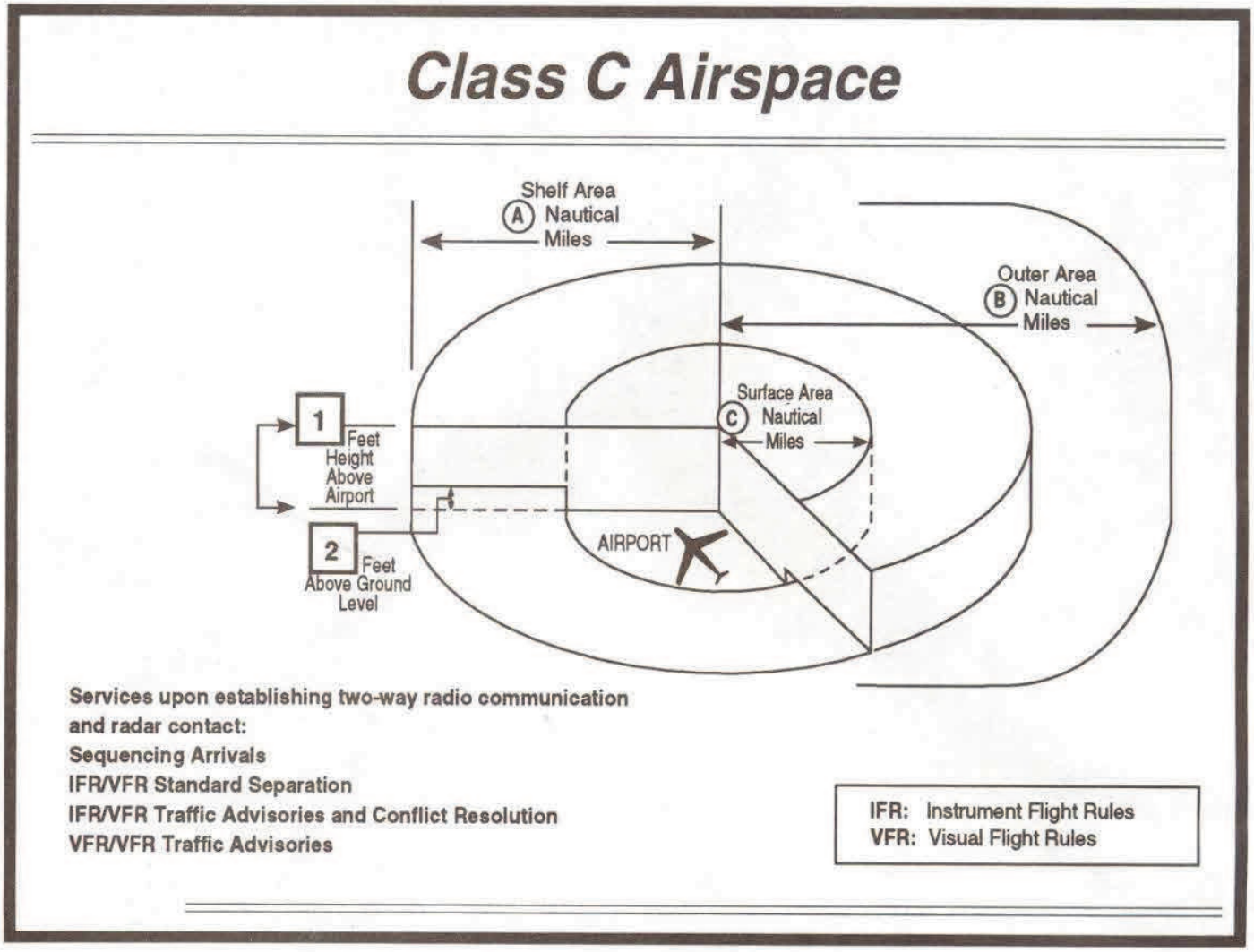


FIGURE 47.—Class C Airspace Diagram.

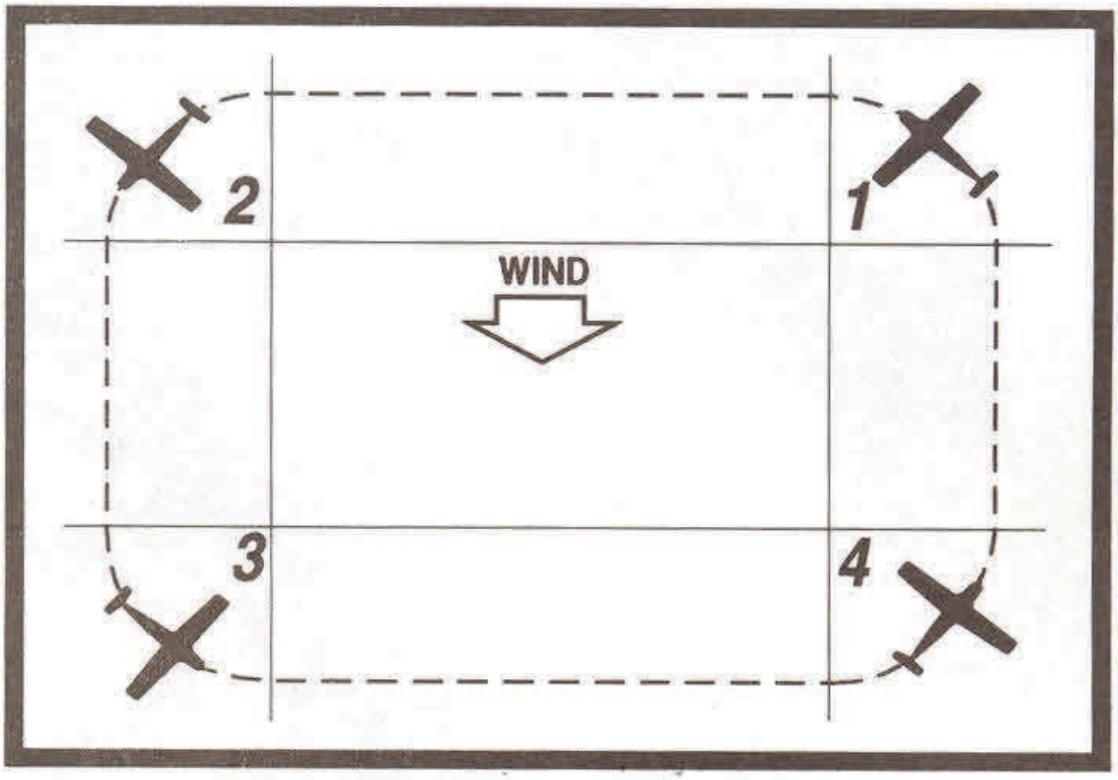


FIGURE 48.—Rectangular Course.

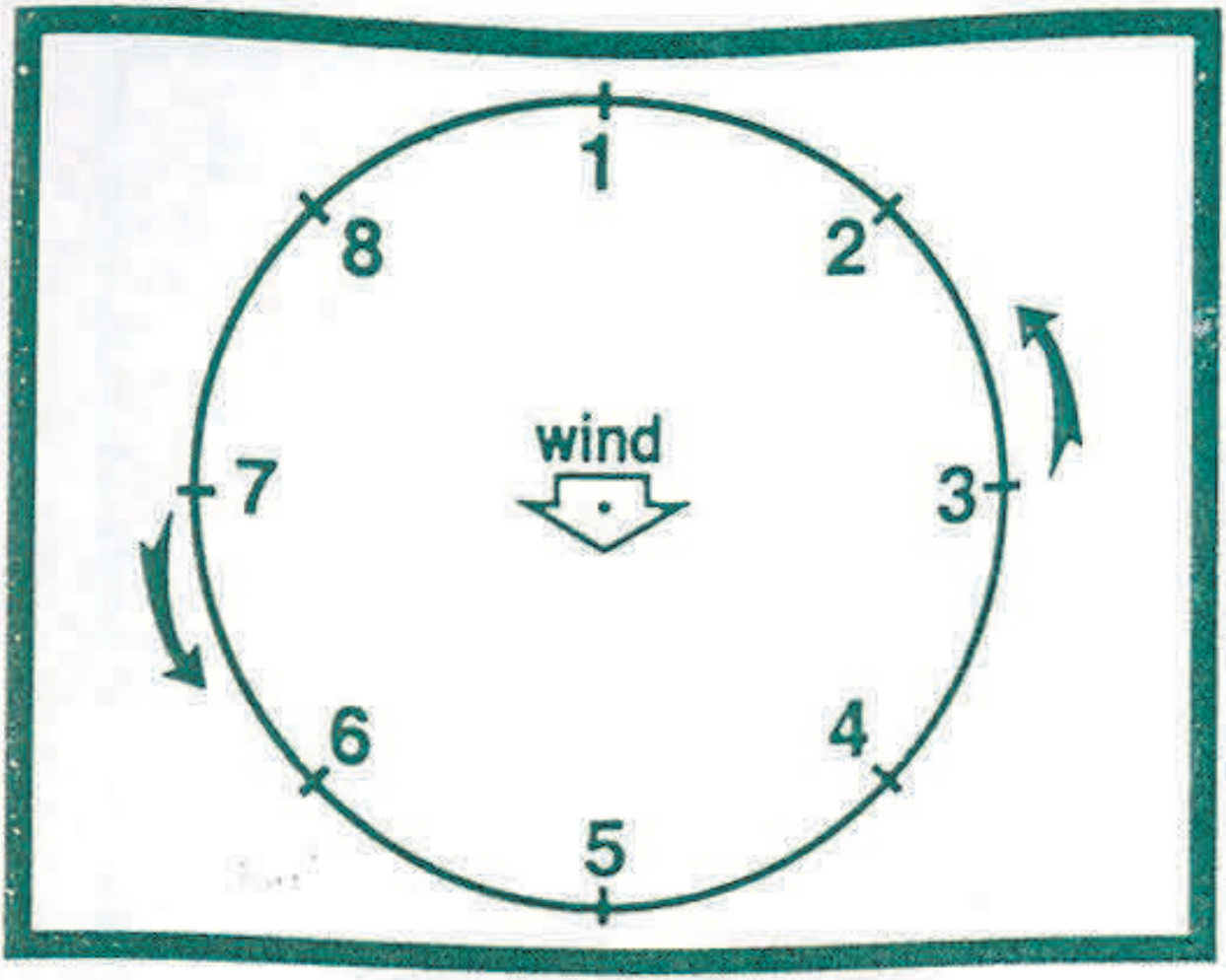


FIGURE 49.—Ground Track Diagram.

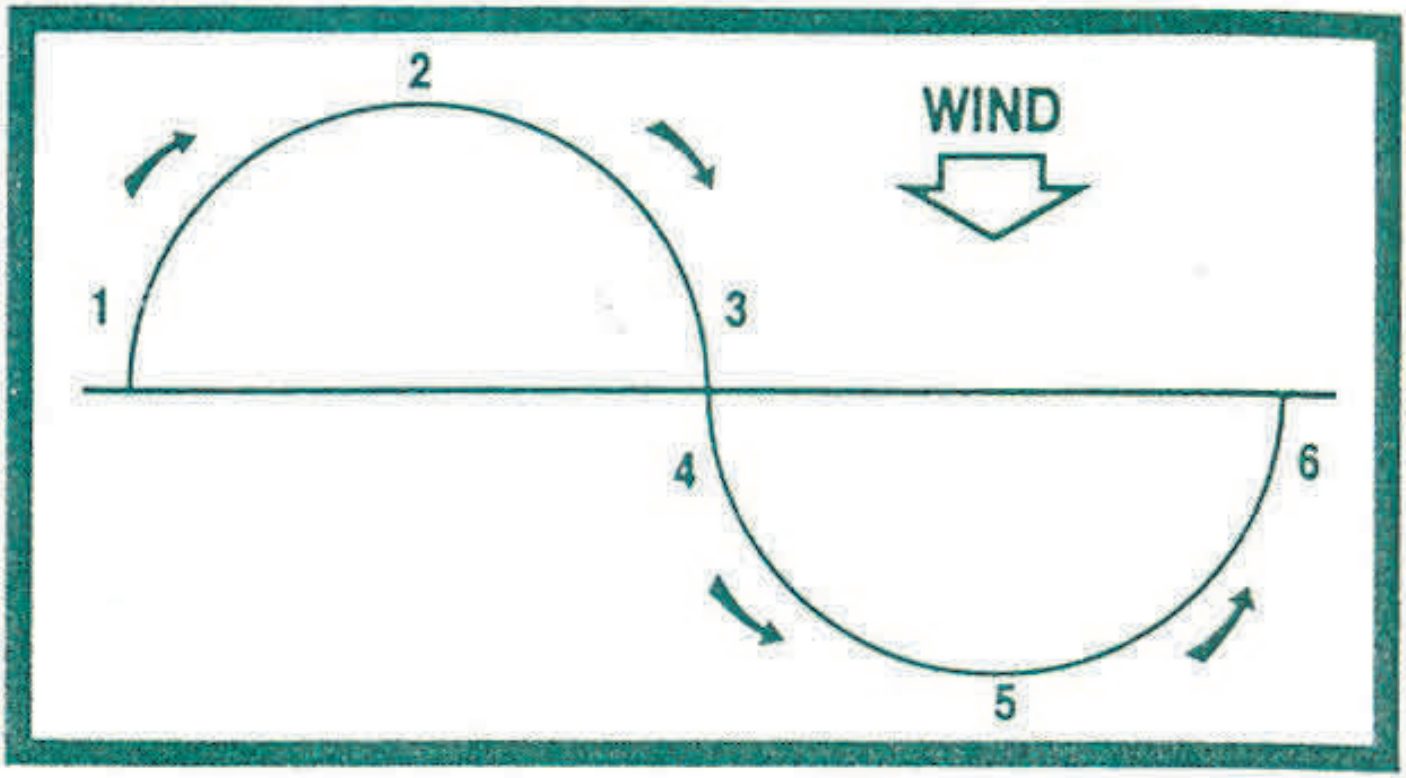


FIGURE 50.—S-Turn Diagram.

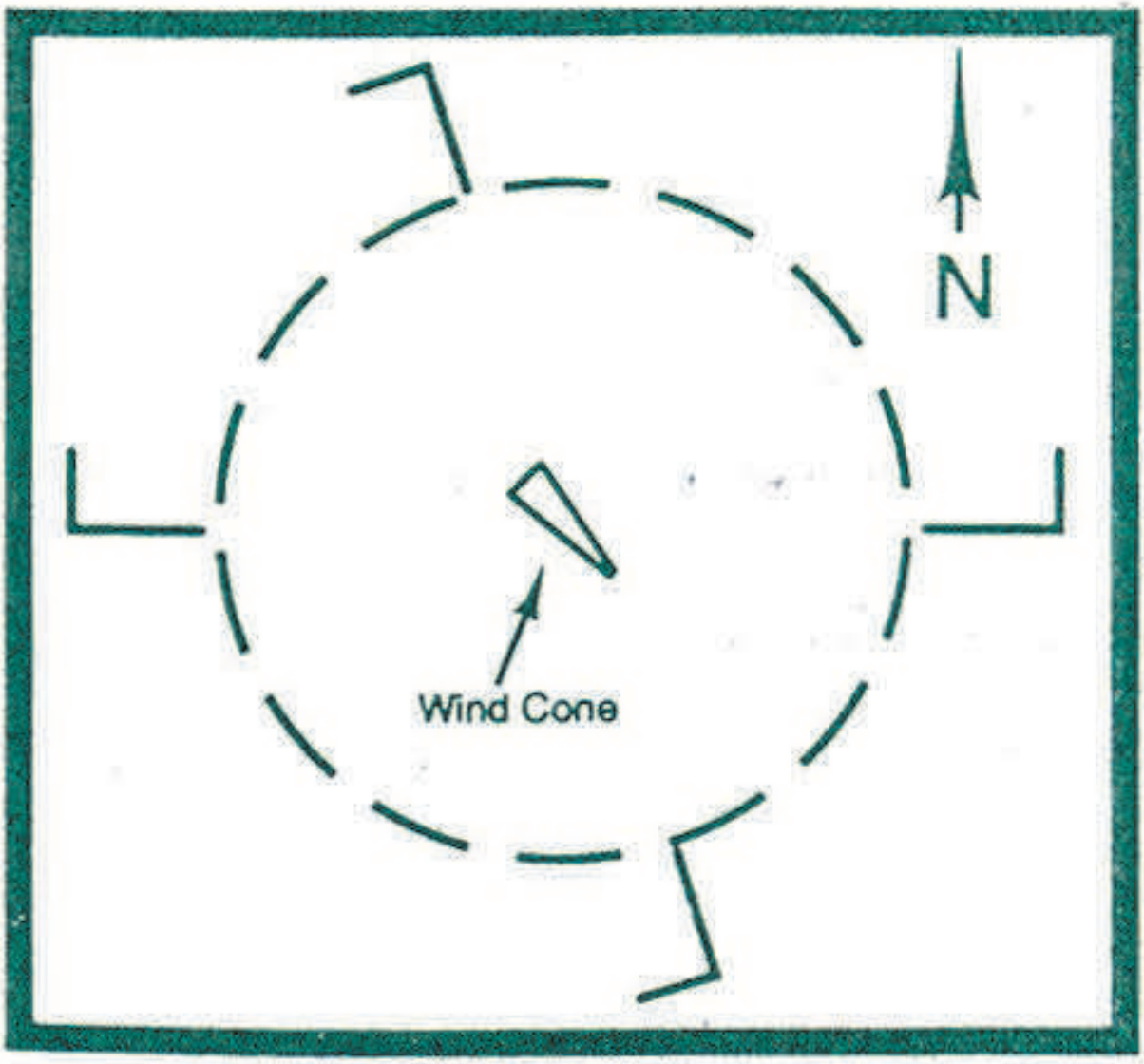


FIGURE 54.—Traffic Pattern Indicator.