FAA APPROVED 5/12/97

# NORMAL MD80 CHECKLIST

## BEFORE START

1. GEAR LEVER & LIGHTS ..... DOWN & CK
2. BRAKES ..... PARKED
3. CIRCUIT BREAKERS ..... CK
4. FLIGHT RECORDER ..... CK & SET
5. ATTITUDE/HEADING REFERENCE
   a. *AHRS COMPASSES* ..... *SLAVED*
   b. *IRS* ..... *NAV*
6. ENGINE SYNC ..... OFF
7. AIR COND & PRESS PANEL ..... CK & SET
8. ICE PROTECTION PANEL ..... CK & SET
9. SEAT BELT & NO SMOKING ..... ON
10. EMERGENCY LIGHTS ..... ARM
11. FUEL PANEL ..... CK & SET
12. BATTERY ..... LOCKED ON
13. FLIGHT GUIDANCE PANEL ..... CK & SET
14. EXTERIOR LIGHTS ..... CK
15. FLIGHT INSTRUMENTS ..... CK & SET
16. ALTIMETERS & CLOCKS ..... _____ SET & CROSS CK
17. TRI & PERFORMANCE TEMP ..... CK & SET
18. ART SWITCH ..... _____
19. OIL & FUEL QUANTITIES ..... CK & _____
20. *PMS* ..... *CK & SET*
21. RADAR & TRANSPONDER ..... CK
22. FLAP T/O SELECTOR ..... _____
23. FUEL LEVERS ..... OFF
24. ACARS ..... CK & SET

25. AFT OVERHEAD PANEL ..... CK
26. FLIGHT INSTRUMENT SELECTORS ..... NORMAL
27. GPWS/*WINDSHEAR* ..... CK & NORMAL
28. ANTI-SKID ..... CK & OFF
29. STALL WARN & MAX SPEED ..... CK
30. YAW DAMPER ..... ON
31. MACH TRIM ..... NORMAL
32. ANNUNCIATOR & DIGITAL LIGHTS ..... CK
33. EMERGENCY POWER ..... CK & OFF
34. ELECTRICAL PANEL ..... SET
35. FIRE CONTROLS ..... CK
36. STATIC SELECTORS ..... NORMAL
37. SPOILERS ..... RETRACT
38. RUDDER POWER ..... ON
39. TAKEOFF WARNING ..... CK
40. FUEL CROSSFEED ..... OFF
41. CABIN ALTITUDE CONTROL ..... AUTO
42. STABILIZER TRIM ..... CK
43. RUDDER & AILERON TRIM ..... CK
44. CREW OXYGEN ..... ON & CK
45. OXY MASK & REGULATOR ..... CK & EMERG OFF

*WHEN CLEARED TO PRESSURIZE HYDRAULICS*

46. HYDRAULIC SYSTEMS ..... CK & SET
47. BRAKE PRESSURE ..... CK

## AFTER START

1. ELECTRICAL POWER ..... CK
2. APU ..... CK
3. ENGINE ANTI-ICE ..... _____
4. AIR CONDITIONING ..... AUTO
5. DOOR LIGHTS ..... OUT
6. BEACON LIGHTS ..... ON
7. HYDRAULIC SYSTEMS ..... CK & ON

## TAXI

1. FLAPS & RWY ..... _____ / TAKEOFF _____
2. T/O DATA, TRI & A/S BUGS ..... _____ SET & CROSS CK
3. STABILIZER TRIM ..... _____ SET
4. FLIGHT CONTROLS ..... CK
5. FUEL SYSTEM ..... CK
6. FUEL HEAT ..... OFF
7. SEAT BELT & SHOULDER HARNESS ..... CK

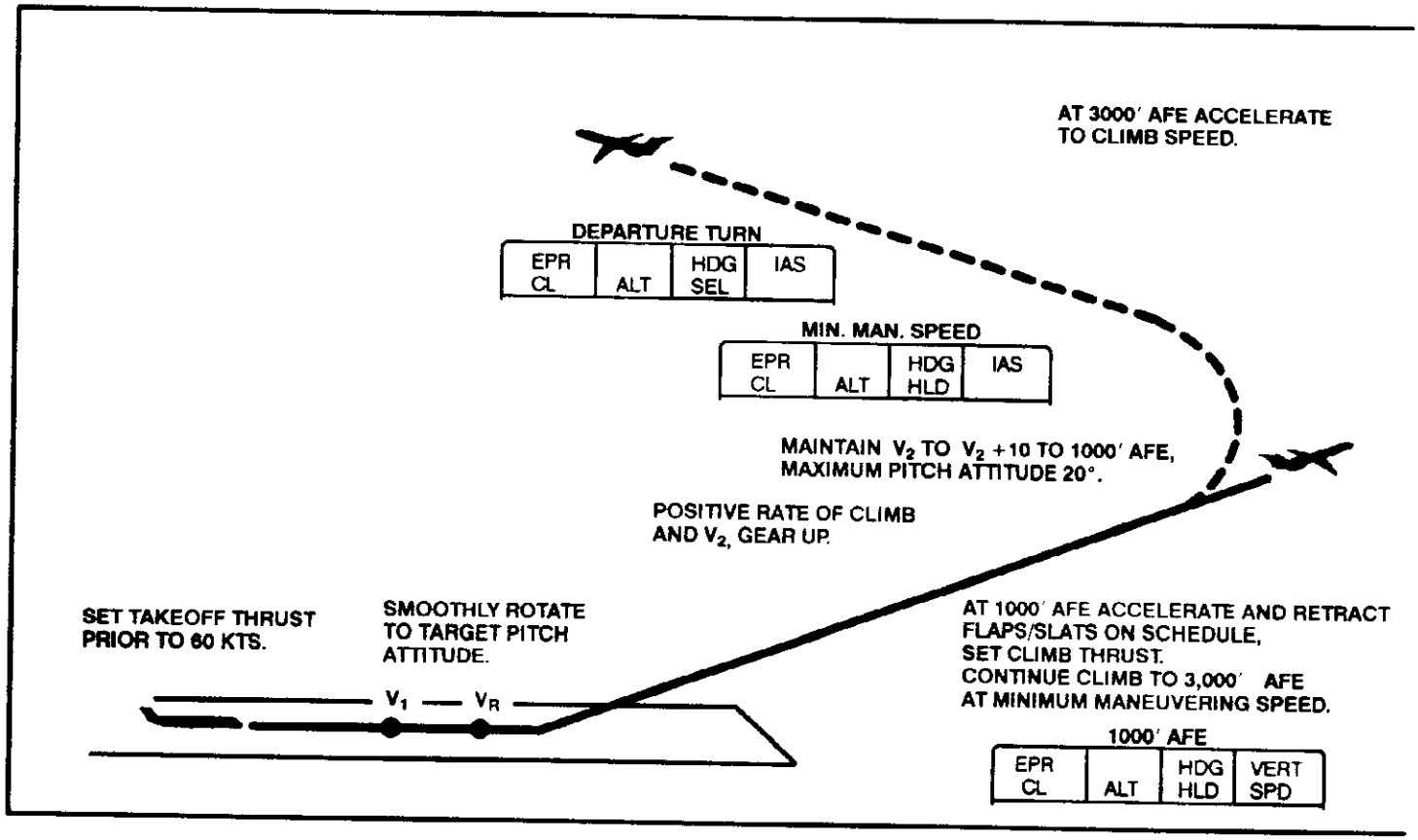
## DELAYED ENGINE START

1. ELECTRICAL POWER ..... CK
2. APU ..... CK
3. FUEL SYSTEM ..... CK
4. FUEL HEAT ..... OFF
5. ENGINE ANTI-ICE ..... _____
6. AIR CONDITIONING ..... AUTO
7. HYDRAULIC SYSTEMS ..... CK & ON

## BEFORE TAKEOFF

1. ICING CONSIDERATIONS ..... CK
2. CABIN ALERT ..... CK
3. IGNITION ..... _____
4. ANTI-SKID ..... ARM
5. STROBE LIGHTS ..... BOTH
6. BRAKE TEMPERATURE ..... CK
7. TRANSPONDER ..... CK
8. PNEUMATIC CROSSFEEDS ..... CLOSED

# DISTANT COMMUNITY NOISE ABATEMENT DEPARTURE




Autoflight status must be confirmed and progress monitored by observing the Flight Mode Annunciator (FMA). Autothrottle should normally be used for takeoff.

Refer to Speed Cards for target pitch attitudes and flap/slat retraction schedule. Make normal rotation at $V_R$. Do not fly flight director pitch commands until after rotation. Maintain $V_2$ to $V_2+10$ up to 1,000′ AFE.

Autopilot may be engaged above 500′ AGL.

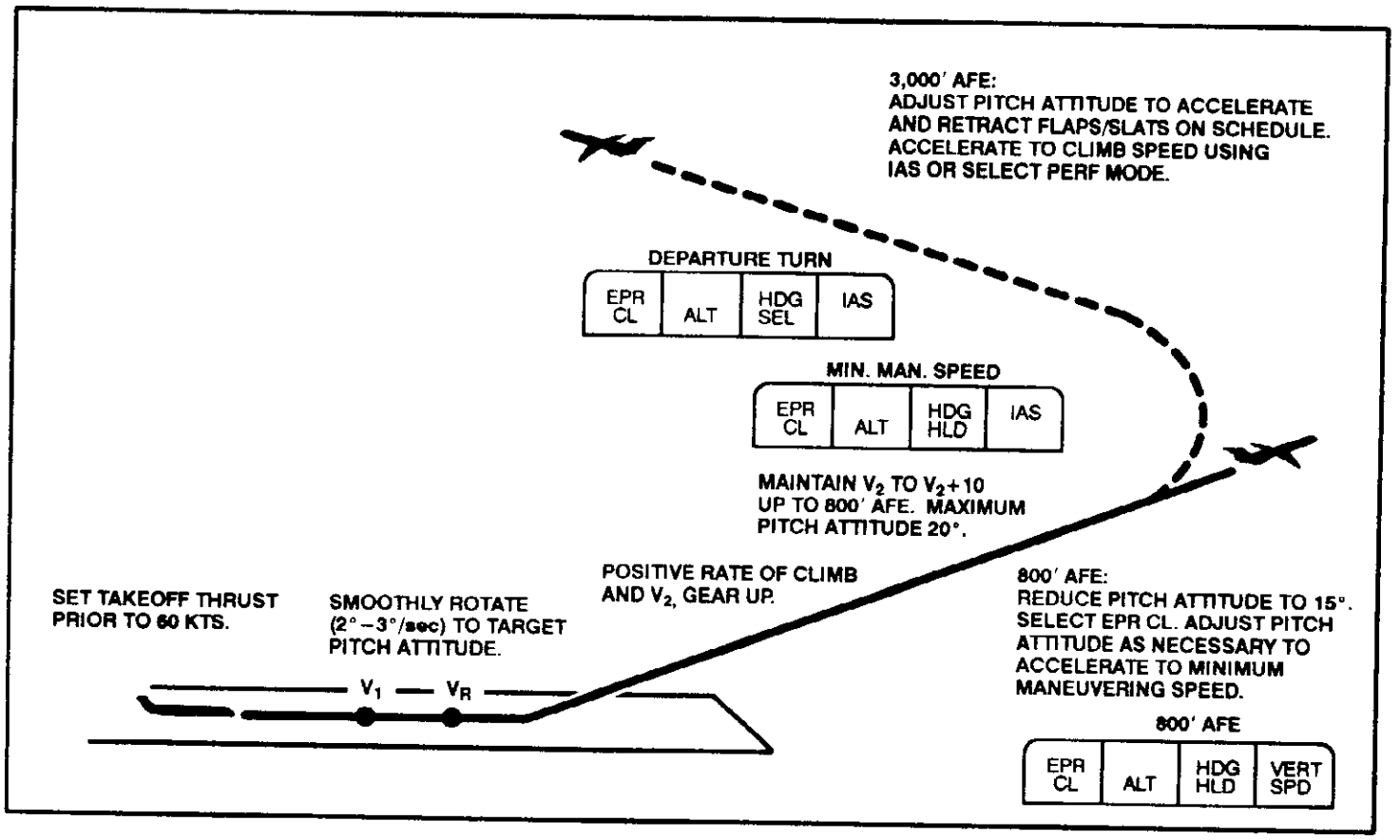
At 1,000′ AFE, reduce vertical speed to no less than 1,000 feet per minute, retract flaps/slats on schedule and select EPR CL. Accelerate to minimum maneuvering speed and select IAS mode. Limit bank angle to 15° until attaining minimum maneuvering speed. Use HDG SEL for turns.

At 3,000′AFE, adjust IAS to desired climb speed or select PERF mode.

REFERENCES:

DC9 Flight Handbook, Chapter 2.
Flight Operations Policy Manual, Chapter 6.

# CLOSE IN COMMUNITY NOISE ABATEMENT DEPARTURE




Autoflight status must be confirmed and progress monitored by observing the Flight Mode Annunciator (FMA). Autothrottle should normally be used for takeoff.

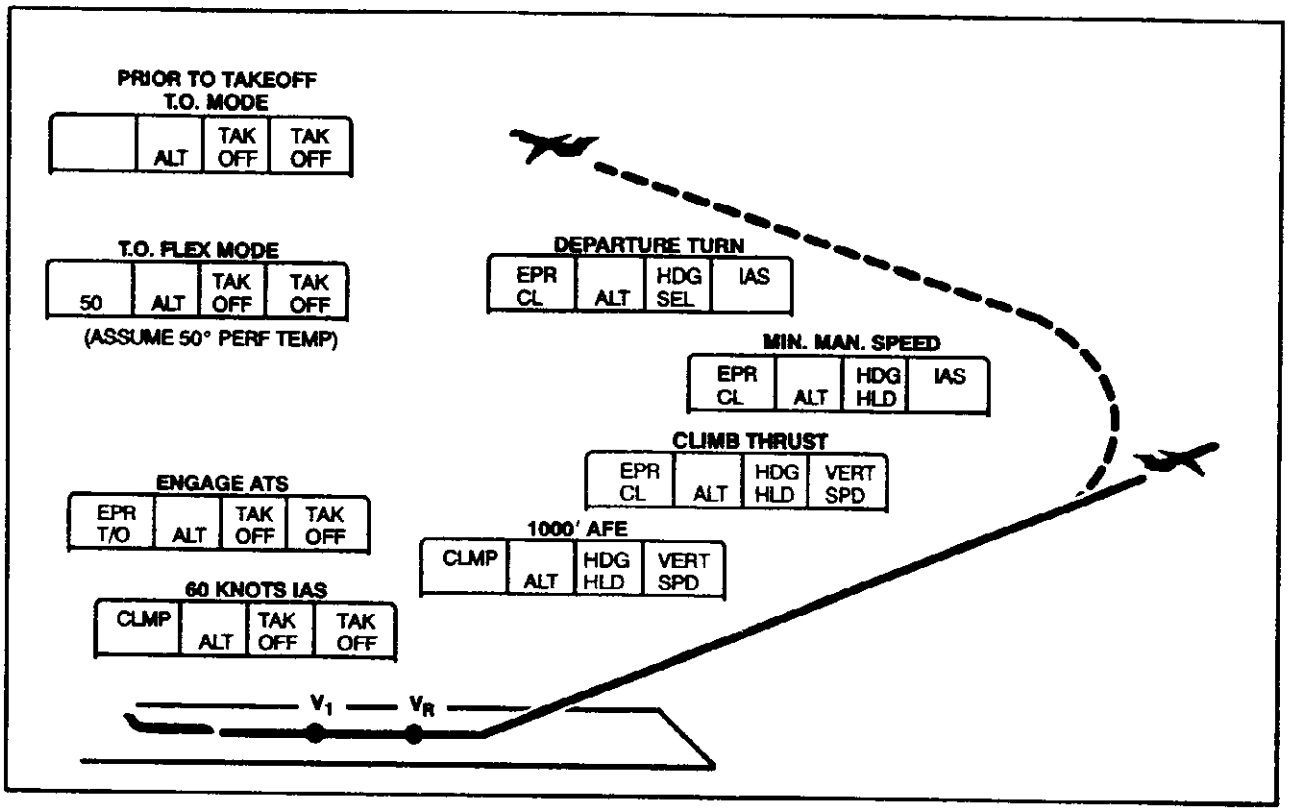
Refer to Speed Cards for target pitch attitudes and flap/slat retraction schedule. Make normal rotation at $V_R$. Do not fly flight director pitch commands until after rotation. Maintain $V_2$ to $V_2+10$ up to 800′ AFE.

Autopilot may be engaged above 500′ AGL.

At 800′ above field elevation, reduce pitch attitude to approximately 15° and select EPR CL on TRI. Adjust pitch attitude as necessary to accelerate to minimum maneuvering speed. Limit bank angle to 15° until attaining minimum maneuvering speed for existing configuration. Use HDG SEL for turns.

At 3,000′above field elevation, adjust pitch attitude to accelerate and retract flaps/slats on schedule. Accelerate to climb speed using IAS or select PERF mode.

# TAKEOFF – AUTOFLIGHT




Autoflight status must be confirmed and progress monitored by observing the Flight Mode Annunciator.

Autothrottle should normally be used for takeoff. Push either TO/GA switch and advance throttles to approximately 1.4 EPR (80% $N_2$), then place ATS on. FMA annunciates CLMP at 60 knots.

Make normal rotation at $V_R$. Do not fly flight director pitch commands until after rotation. Maximum pitch attitude is 20 degrees.

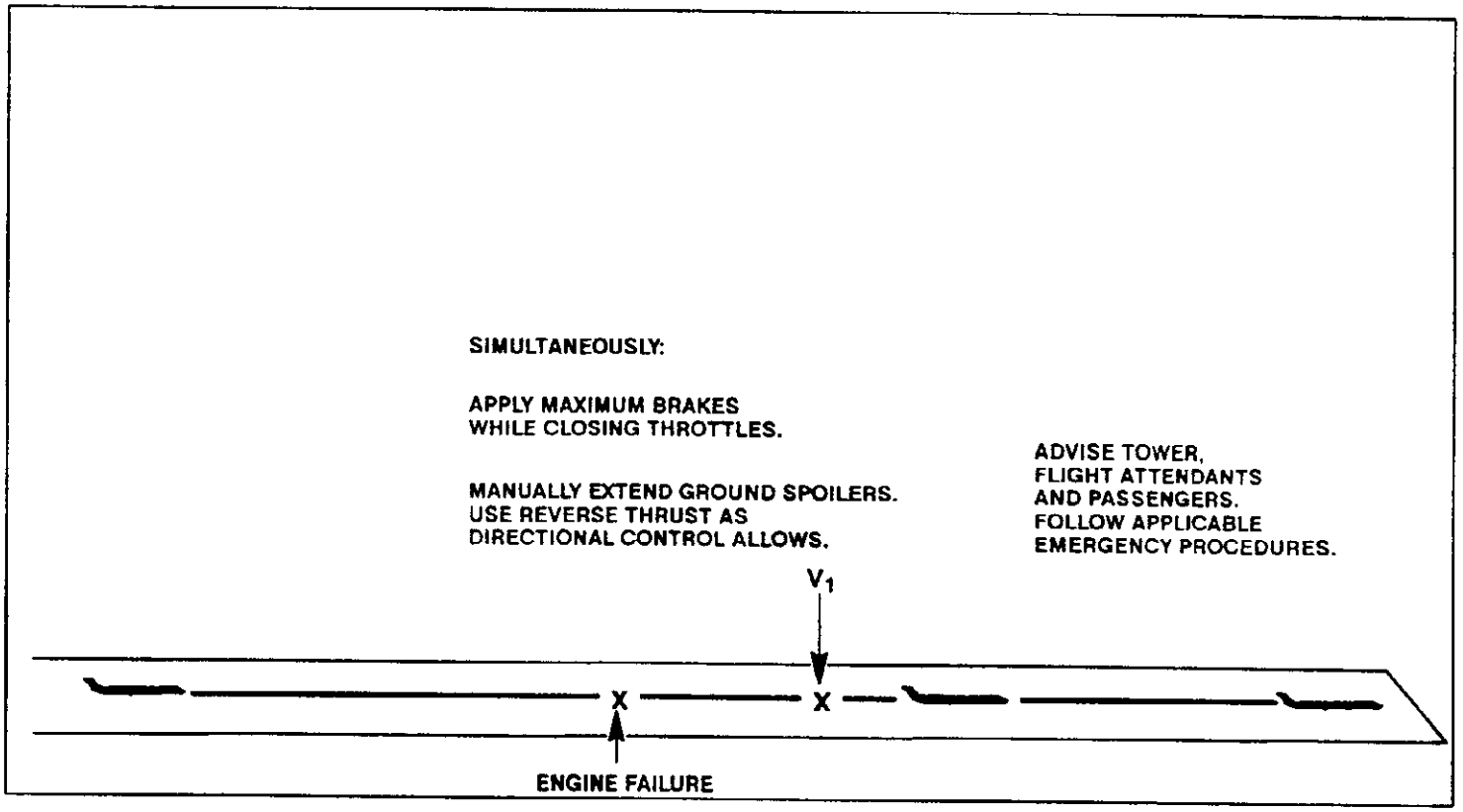
Use HDG SEL for any required turns. Limit bank angle to 15° until attaining minimum maneuvering speed for existing flap/slat configuration. Bank angle selector may then be positioned to a greater angle if desired.

Autopilot may be engaged above 500 feet AGL.

See takeoff–basic for additional details.

REFERENCE:
MD80/DC9 Flight Handbook, Chapter 2

# TAKEOFF–REJECTED




D9X 033 IL

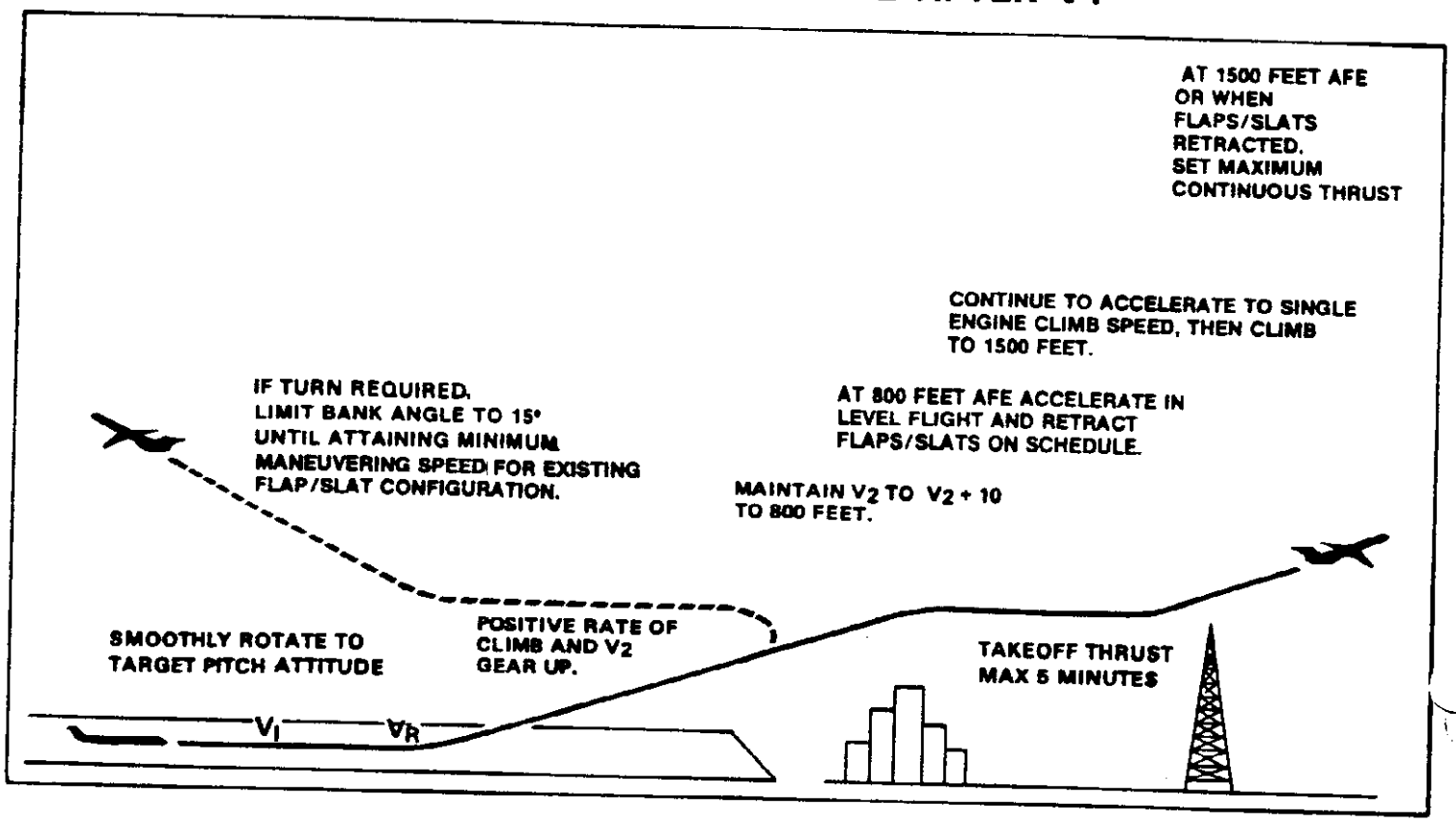
The decision to reject a takeoff is solely the responsibility of the captain.

Maximum effort stopping techniques shall be initiated.

REFERENCE:

DC-9 Flight Handbook, Chapters 2 and 3.
Flight Operations Policy Manual, Chapters 6 and 10.

# TAKEOFF - ENGINE FAILURE AFTER V1




The pilot not flying will monitor engine performance and call "Engine Failure" should engine parameters indicate an abnormal condition significantly affecting thrust output.

Use a normal rate of rotation at Vr. V2 should be attained at approximately 35 feet.

Use speed cards for target pitch attitude, flap-slat retraction speeds and minimum maneuvering speeds. If speed cards not available use tables in FHB 4.56.

If an engine fire warning occurs on takeoff, fly the engine failure profile depicted above, whether the engine is producing significant thrust or not.

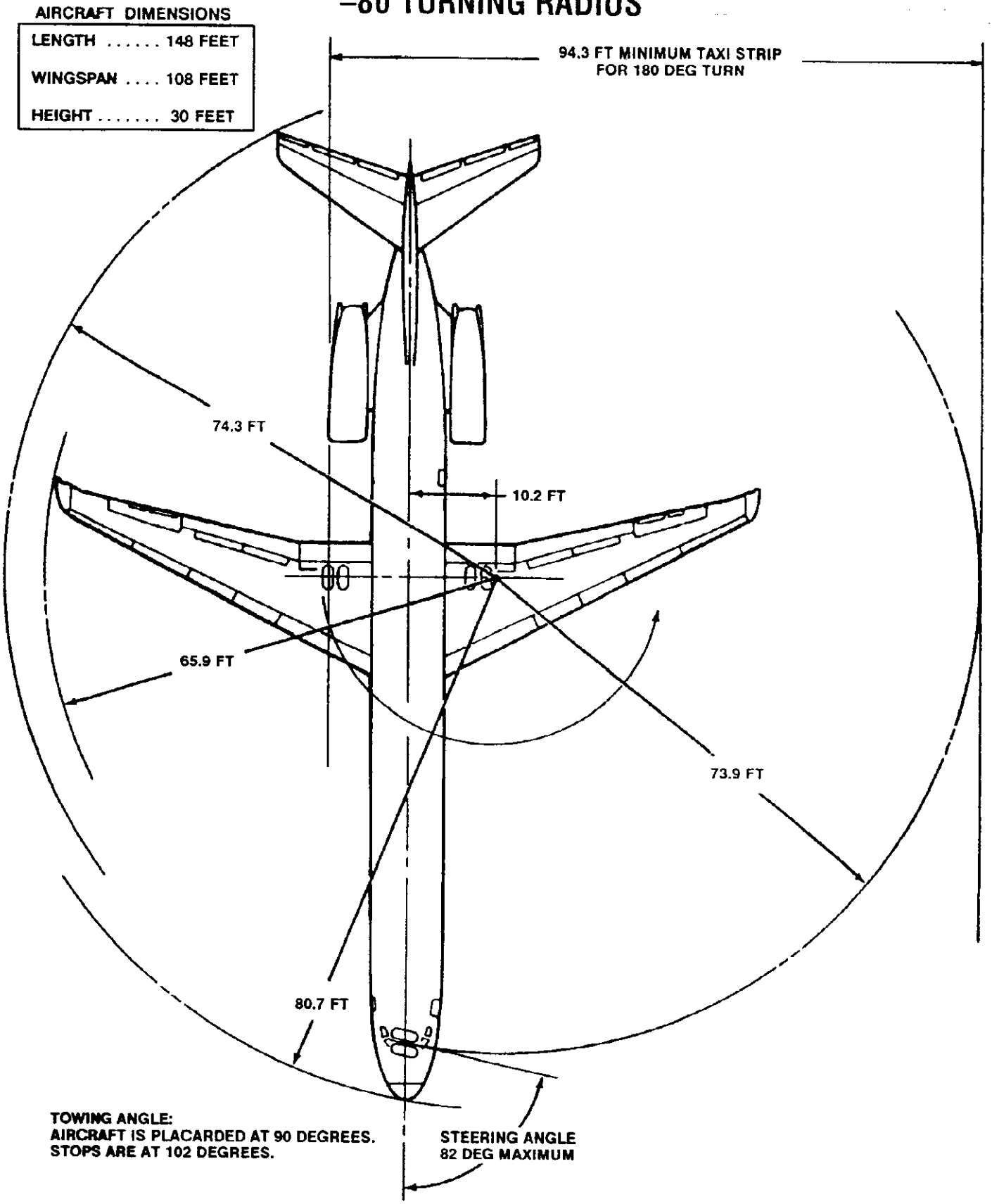
Be alert for special departure procedures that may require a turn after takeoff.

REFERENCE:

DC-9 Flight handbook Chapters 2 and 3.

(7373)

# -80 TURNING RADIUS




(D9X 037 IL-80)

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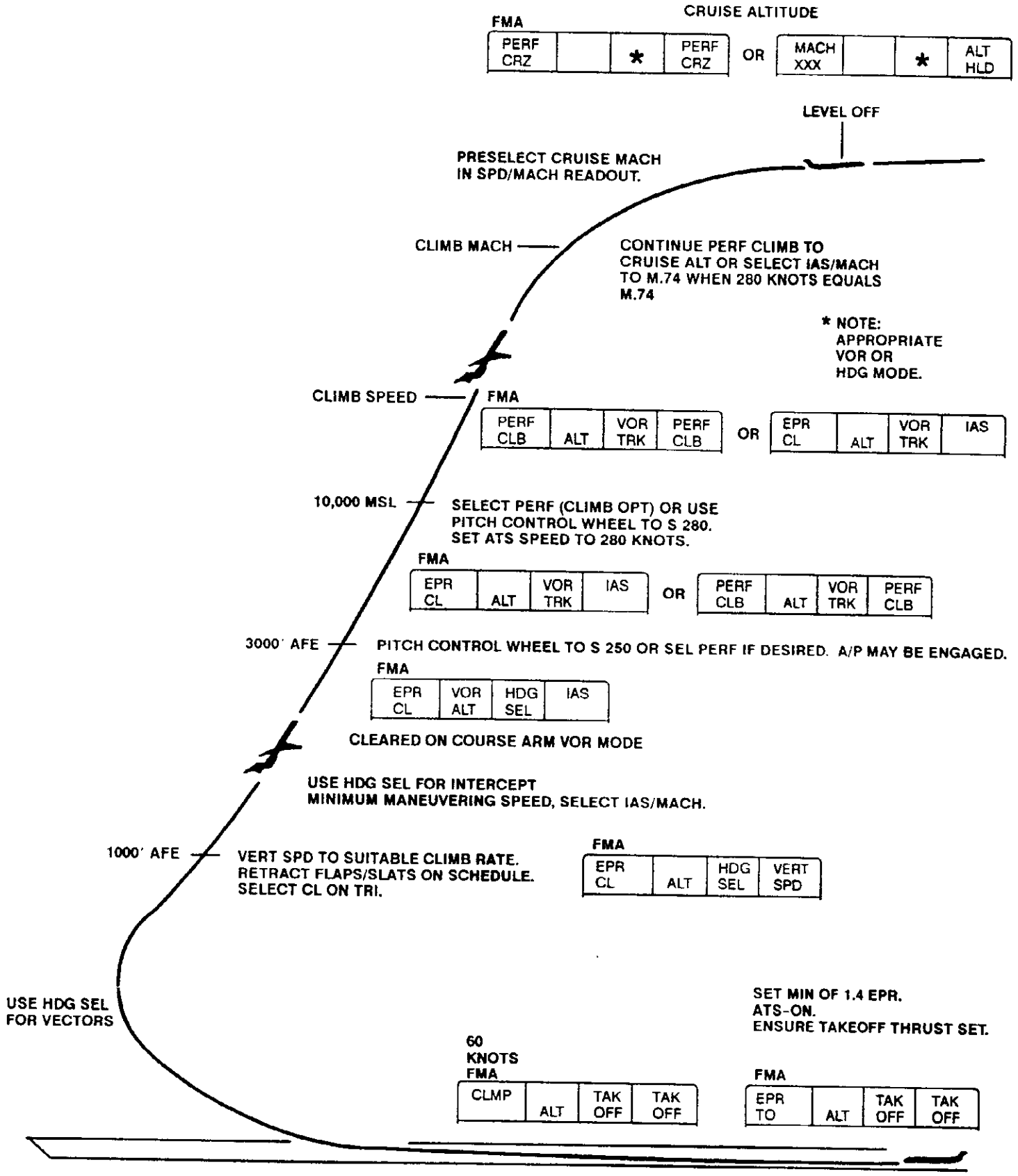
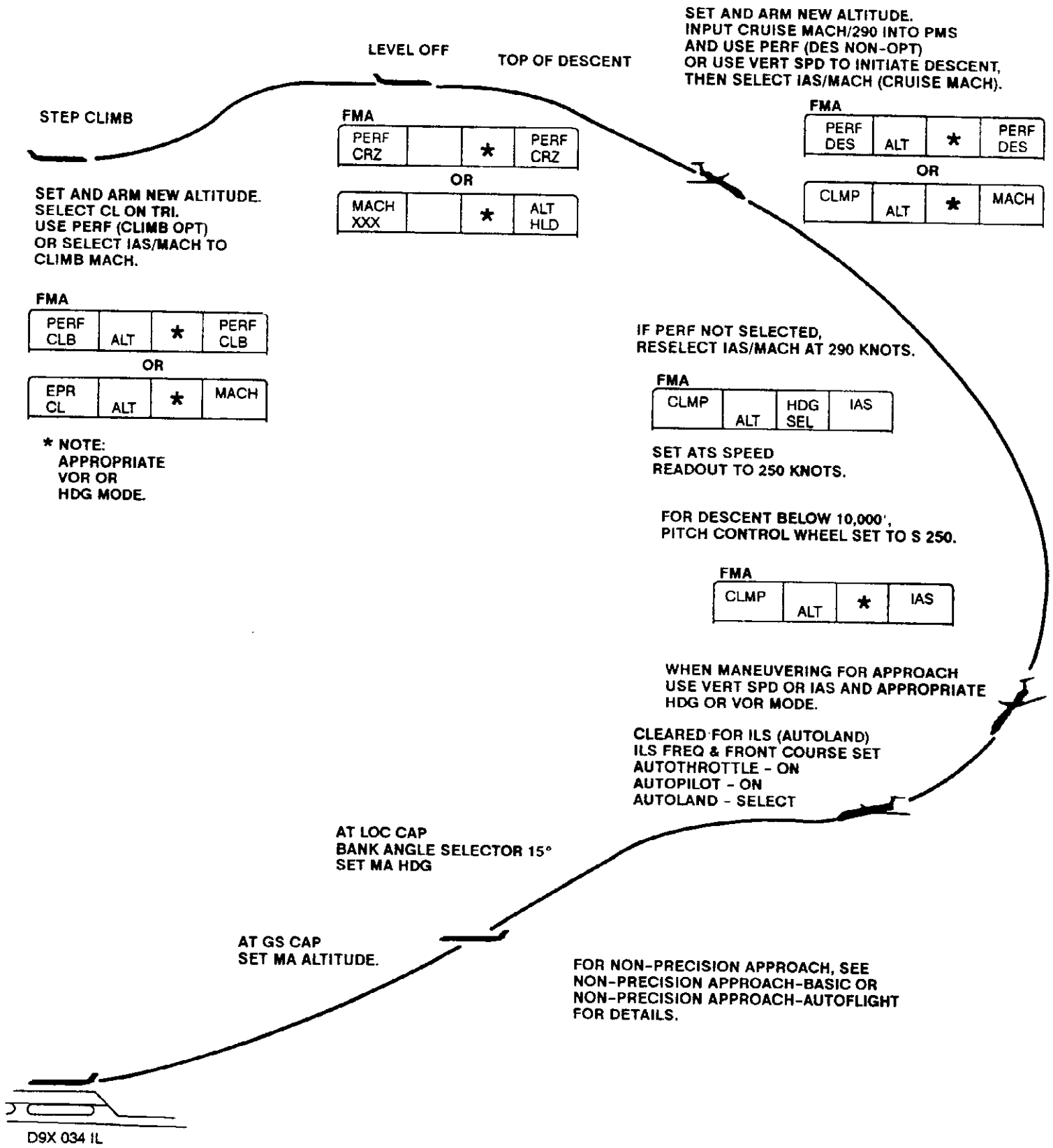
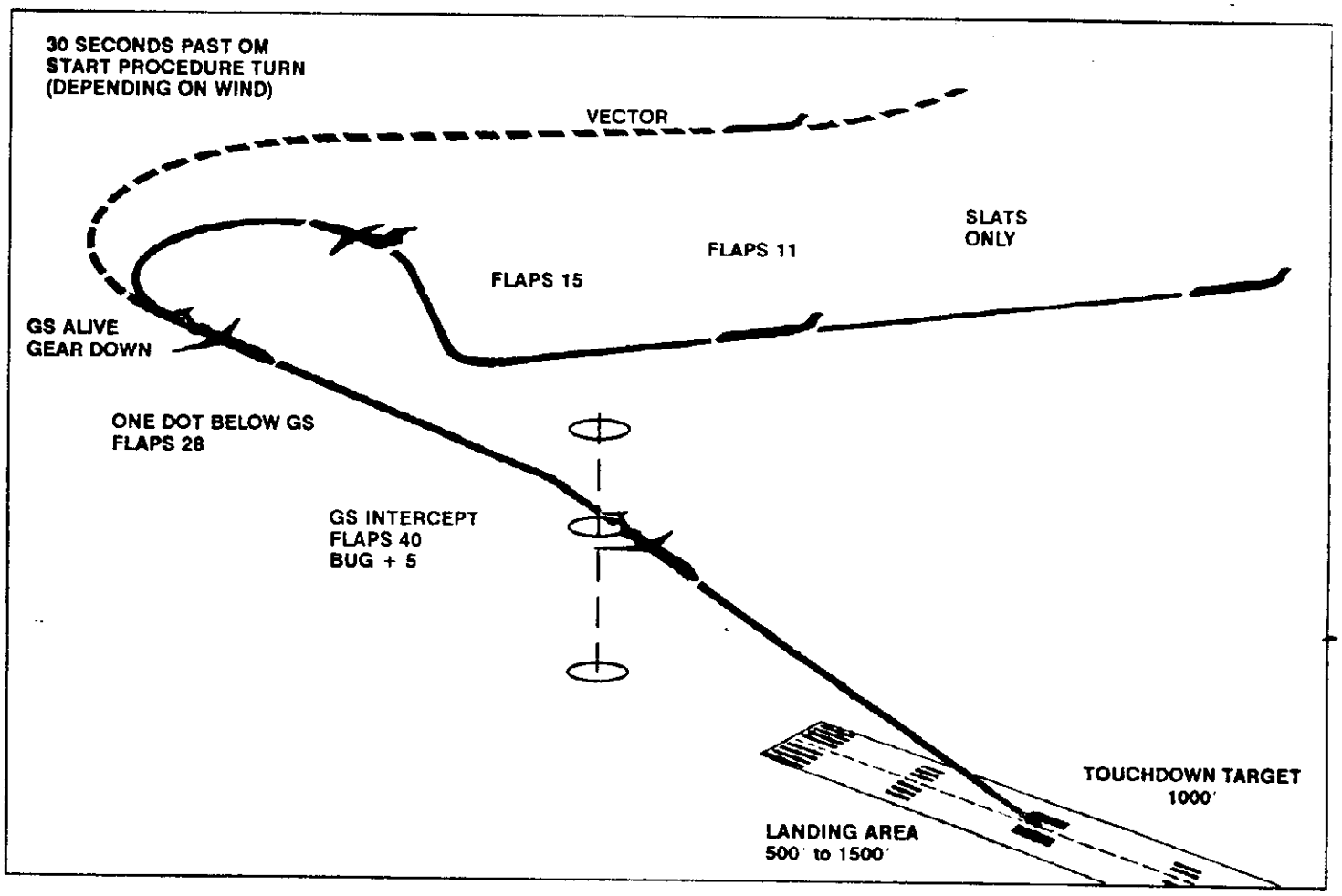
# FLIGHT GUIDANCE PROFILE – TAKEOFF, CLIMB & CRUISE (PMS Optimum Mode)



# FLIGHT GUIDANCE PROFILE – CRUISE DESCENT, APPROACH & LANDING (PMS Mode)



# ILS – BASIC




D9X 027 IL-80

Use speed cards for minimum maneuvering speeds. If not available use tables in FHB 4.56.

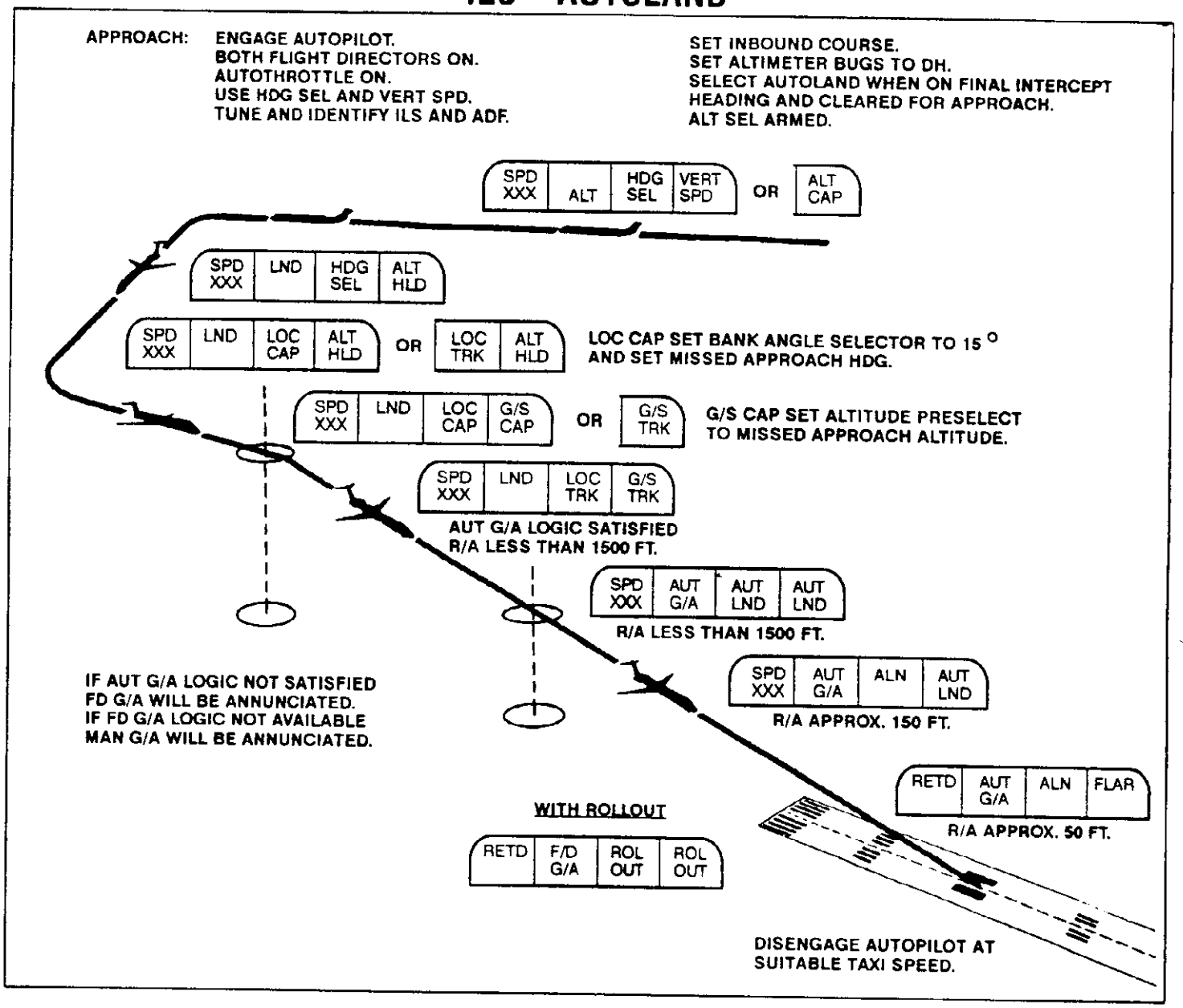
Crew coordination and approach plate review should be completed as soon as approach information is available. Position awareness during any approach is important to aid in anticipating speed and configuration changes. Radios should be tuned to facilitate position awareness during initial vectoring in the terminal area.

For single engine considerations, see ILS APPROACH – ENGINE INOPERATIVE details.

REFERENCE:

DC-9 Flight Handbook, Chapter 2.
Flight Operations Policy Manual, Chapter 6.

# ILS – AUTOLAND




D9X 014 IL-80

Continuously monitor raw data, failure annunciators, and warning lights during all autoflight approaches.

Normal autoflight procedures utilize autopilot, both flight directors and autothrottle.

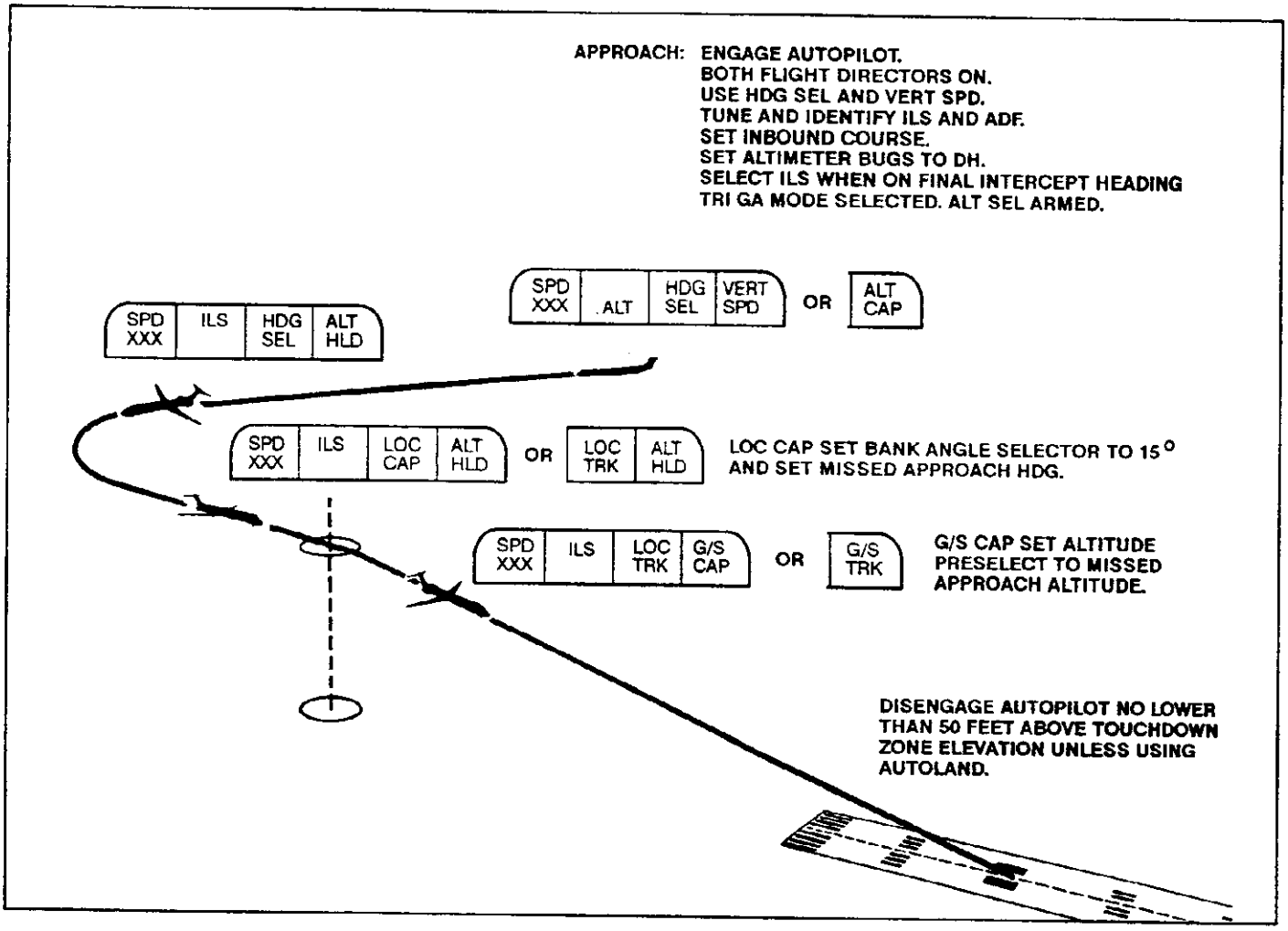
If aircraft is to be vectored through the localizer, and Autoland is armed, cancel the intercept with HDG HLD, then use HDG SEL and rearm Autoland when desired.

A satisfactory landing is a touchdown in the touchdown zone with nose wheel within 25 feet of runway centerline.

During rollout be especially alert for any deviations from runway centerline which may adversely affect safety.

REFERENCE: DC-9 Flight Handbook, Chapter 2.

# ILS – AUTOPILOT

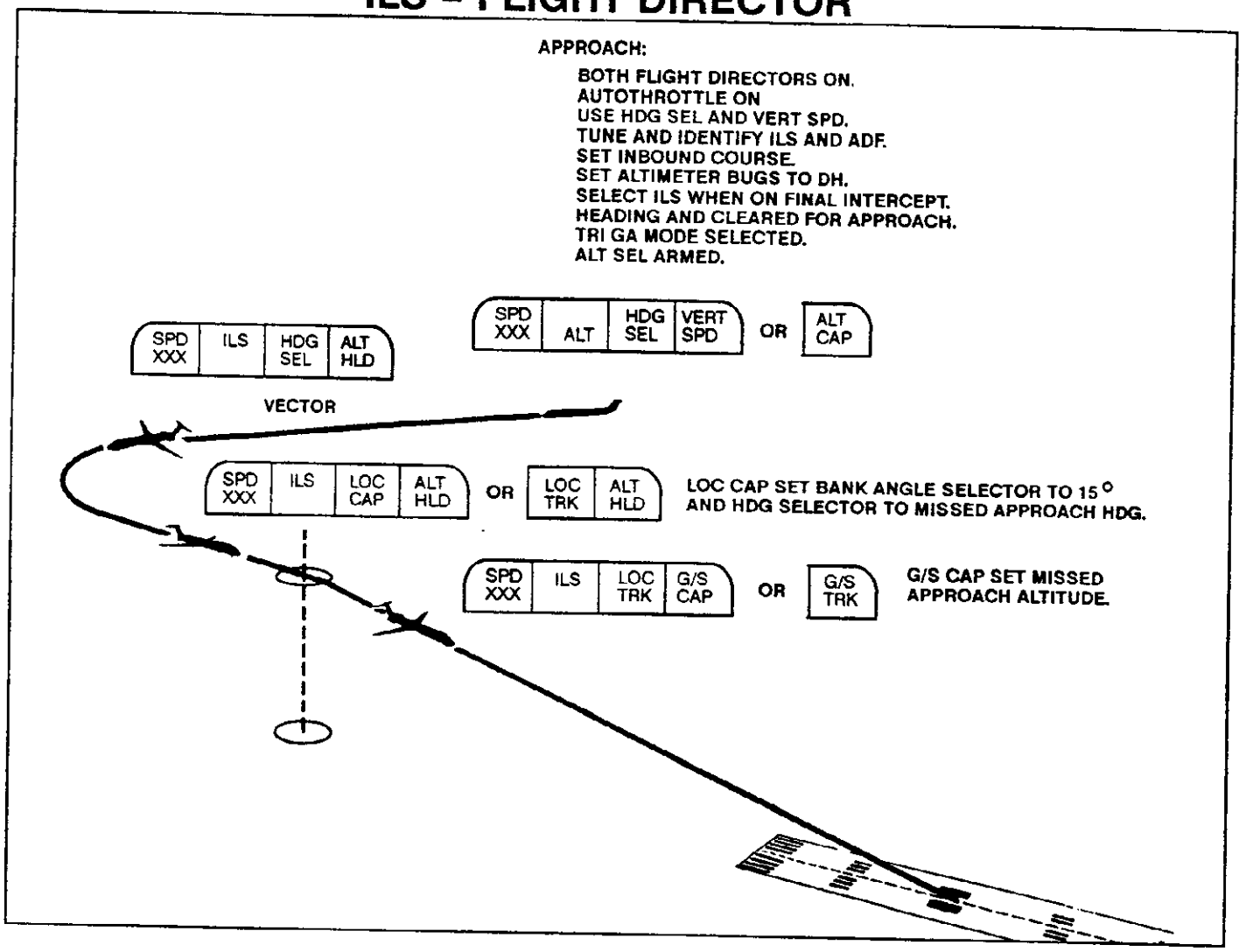



With engine inoperative, make manual Flight Director approach and landing.

If aircraft is to be vectored through the localizer, and ILS is armed, cancel the intercept with HDG HLD, then use HDG SEL and re-arm ILS when desired.

REFERENCE: DC-9 Flight Handbook, Chapter 2.
(7380)

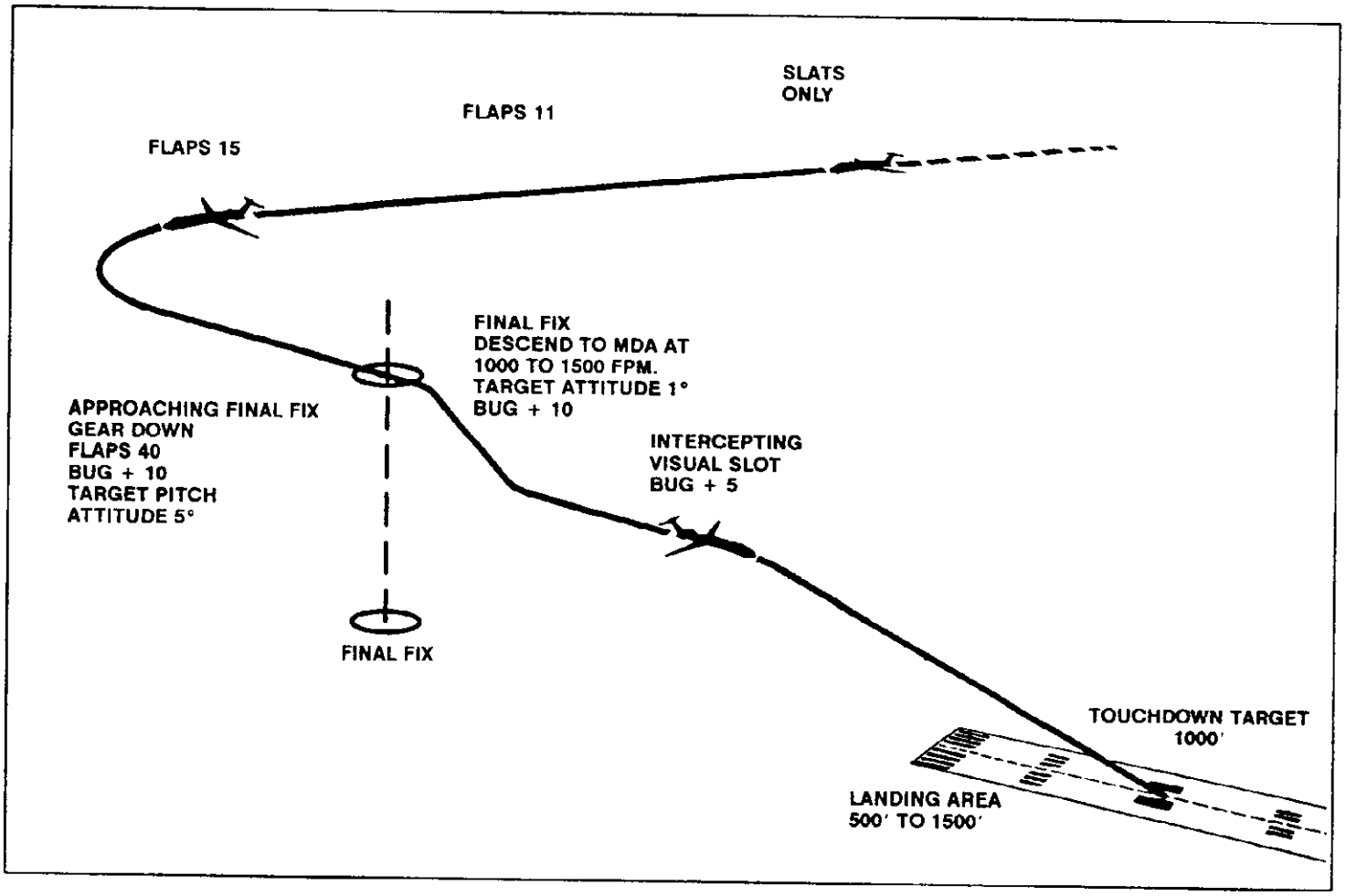
# ILS - FLIGHT DIRECTOR




If aircraft is to be vectored through the localizer, and ILS is armed, cancel the intercept with HDG HLD, then use HDG SEL and re-arm ILS when desired.

REFERENCE: DC-9 Flight Handbook, Chapter 2.
(7382)

# NON-PRECISION APPROACH – BASIC




D9X 017 IL-80

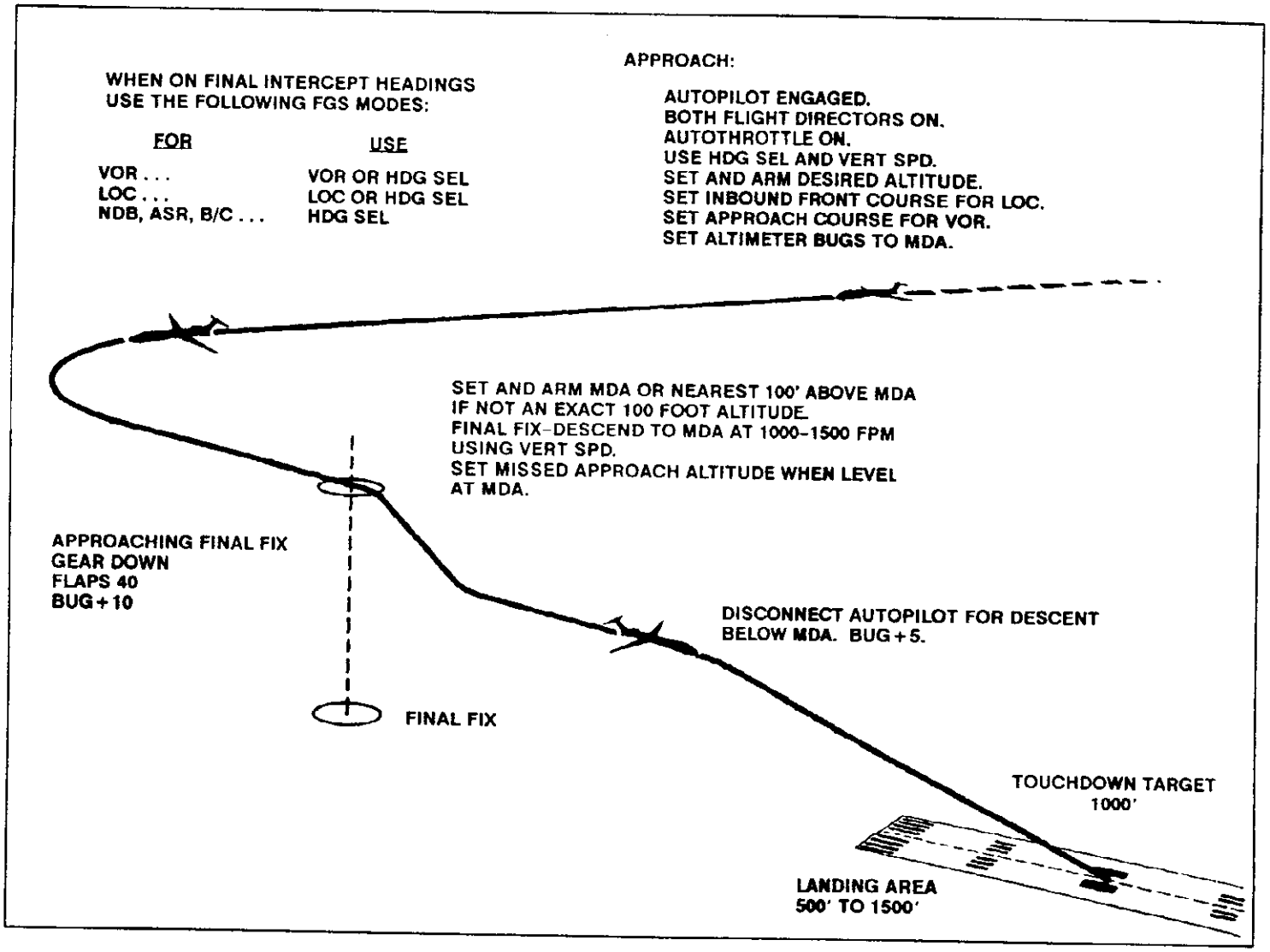
Use speed cards for minimum maneuvering speeds. If not available use tables in FHB 4.56.

Sink rate from the final approach fix to MDA will depend on ground speed, altitude change, missed approach point and any approach chart restrictions.

REFERENCE:

DC-9 Flight Handbook, Chapter 2.

# NON-PRECISION APPROACH – AUTOFLIGHT



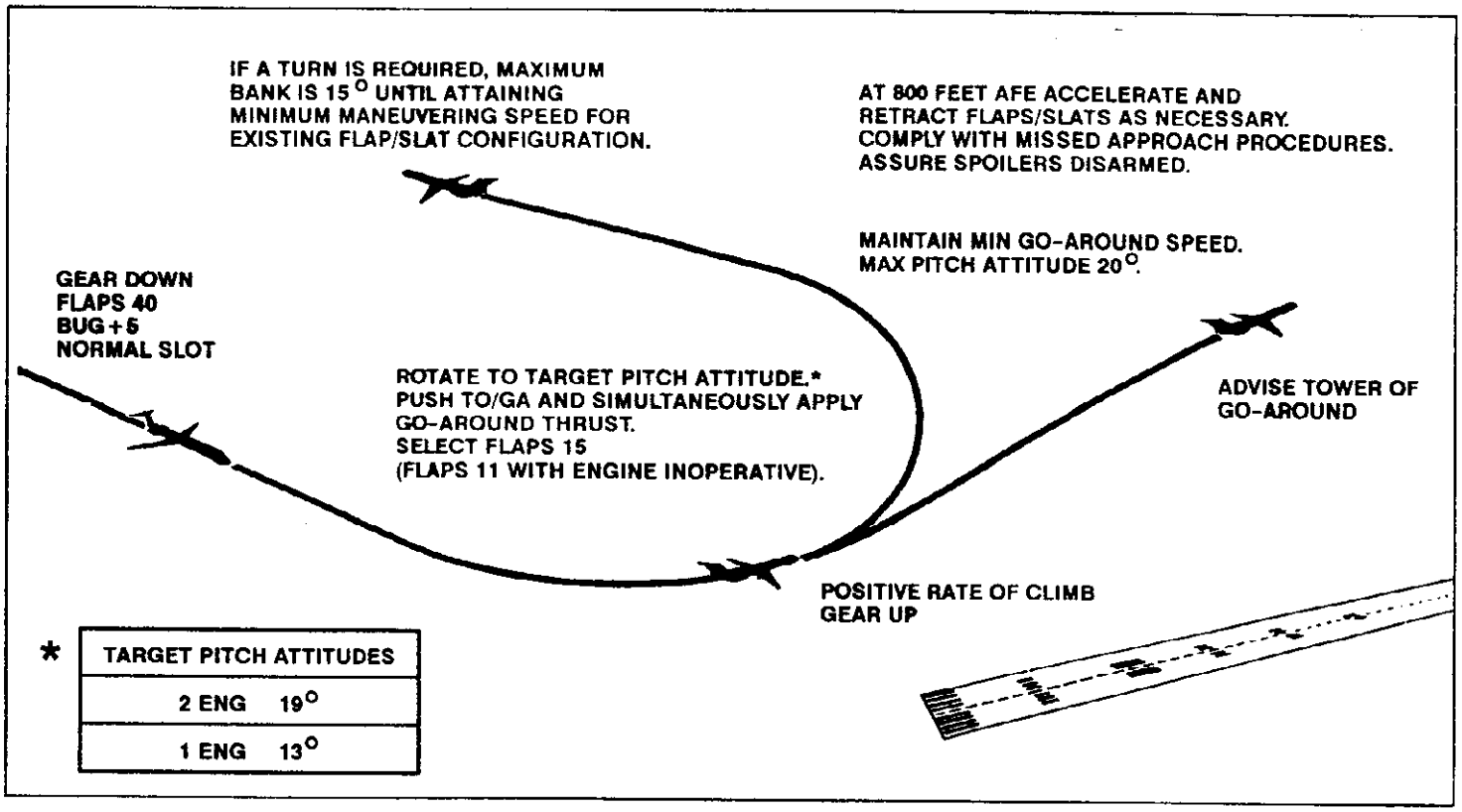

D9X 018 IL-80

Autoflight modes must be confirmed and progress monitored by observing annunciations on the FMA.

If desired, descend from preselected altitude to MDA using Vert Spd and Alt Hld.

REFERENCE: DC-9 Flight Handbook, Chapter 2.

# GO-AROUND – BASIC



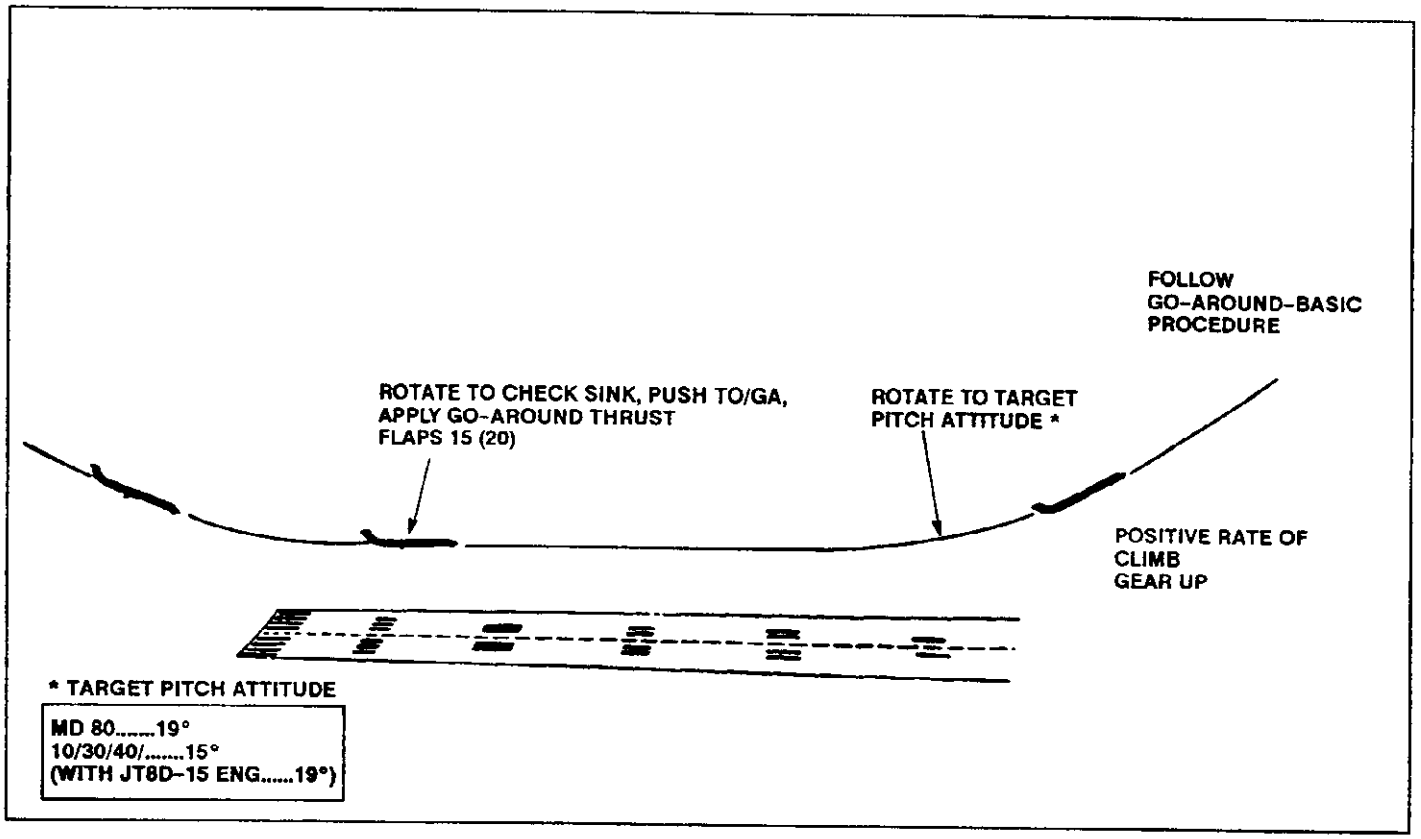

D9X 019 IL-80

Use speed cards for flap-slat retraction speeds and minimum maneuvering speeds. If speed cards not available use tables in FHB 4.56.

If go-around is initiated with an engine inoperative, coordinate rudder with thrust application. At 800 feet AFE, shallow the climb and retract flaps/slats as necessary while accelerating to appropriate speed.

REFERENCE: DC-9 Flight Handbook, Chapter 2.
Flight Operations Policy Manual, Chapter 6.

# LANDING – REJECTED




D9X 032 IL

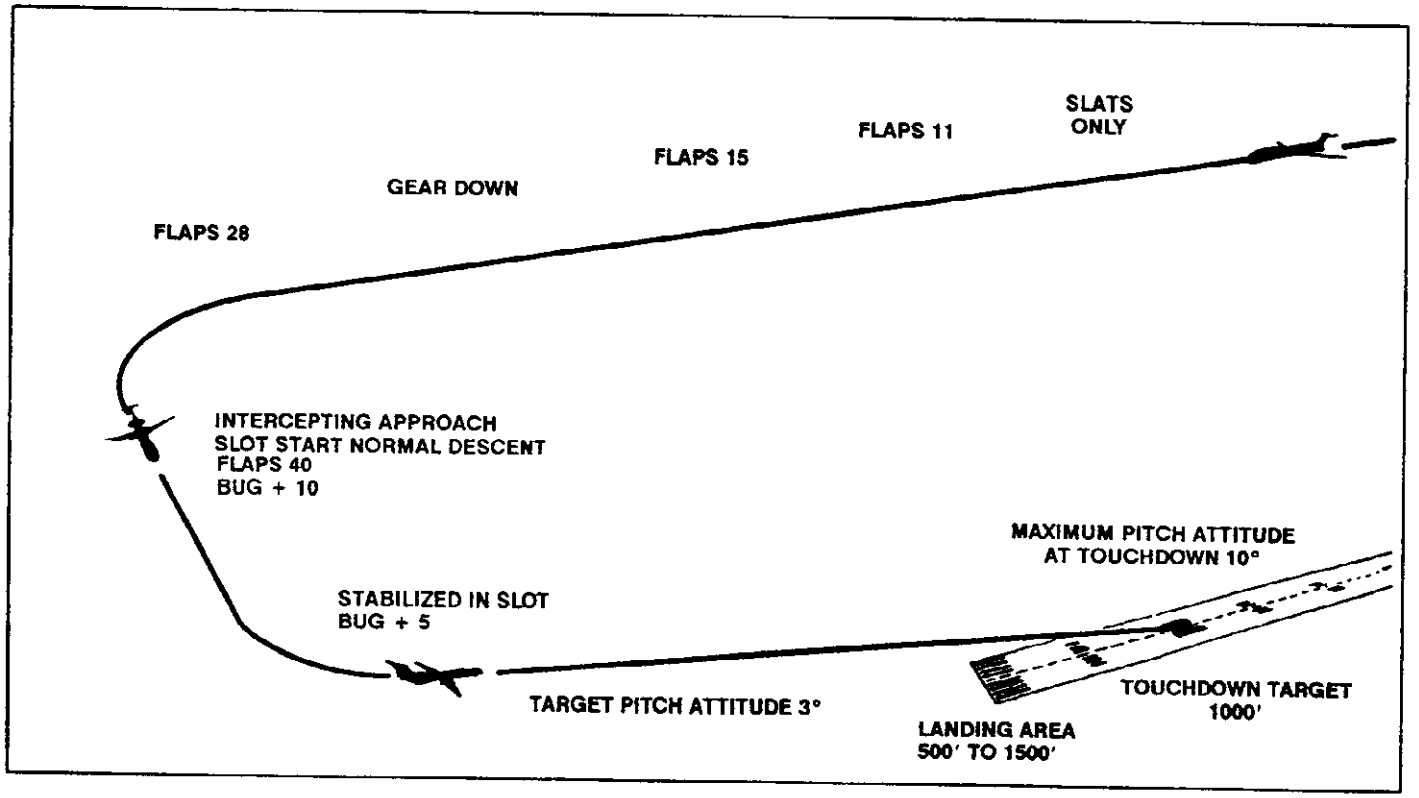
See appropriate speed card for minimum go-around speed.

On series 10 aircraft go-around flap position is 20 degrees.

Avoid excessive rotation at low speed that may result in tail strike should aircraft touch down.

Be alert for potential asymmetric engine spinup.

# LANDING – NORMAL




D9X 005 IL-80

Use speed cards for minimum maneuvering speeds, if not available use tables in FHB 4.56.

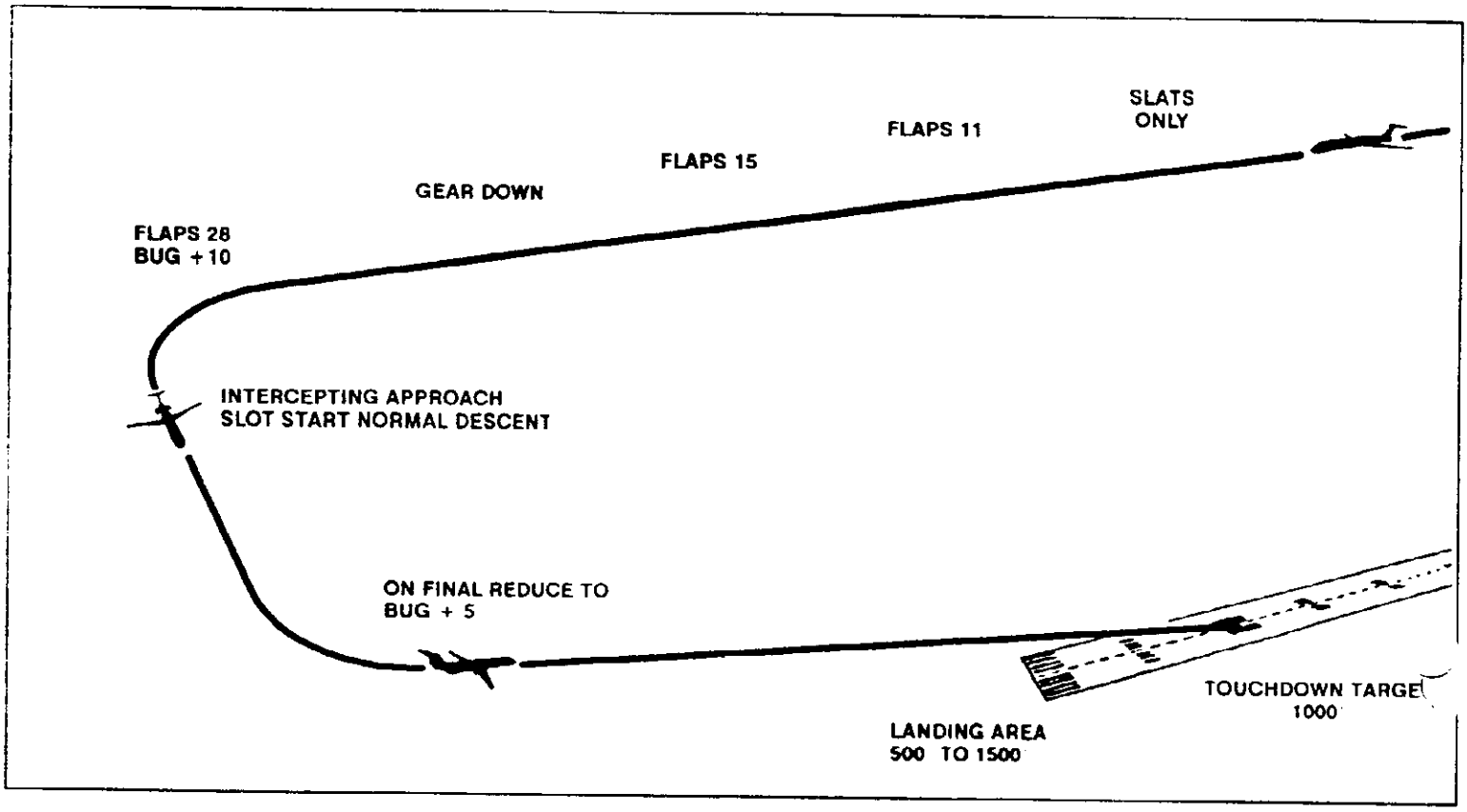
If autothrottle system is off, apply speed additives for gusts as required.
At altitudes down to 500 feet, some deviation from the normal approach path may be tolerated.
Below 500 feet, if any significant departure from the normal approach path occurs,
and corrective action is not immediately effective, go-around is mandatory.

During flare maneuver, runway closure rate should be reduced at a constant rate by coordinated use of thrust and elevator controls. Sink rate must never reach zero prior to touchdown.

Rate of throttle closing depends on ground speed, airspeed at start of flare, gross weight, etc.
Throttles will normally be closed at touchdown.

REFERENCE: DC-9 Flight Handbook, Chapter 2.
Flight Operations Policy Manual, Chapter 6 and 10.

# LANDING – ENGINE INOPERATIVE




D9X 028 IL -80

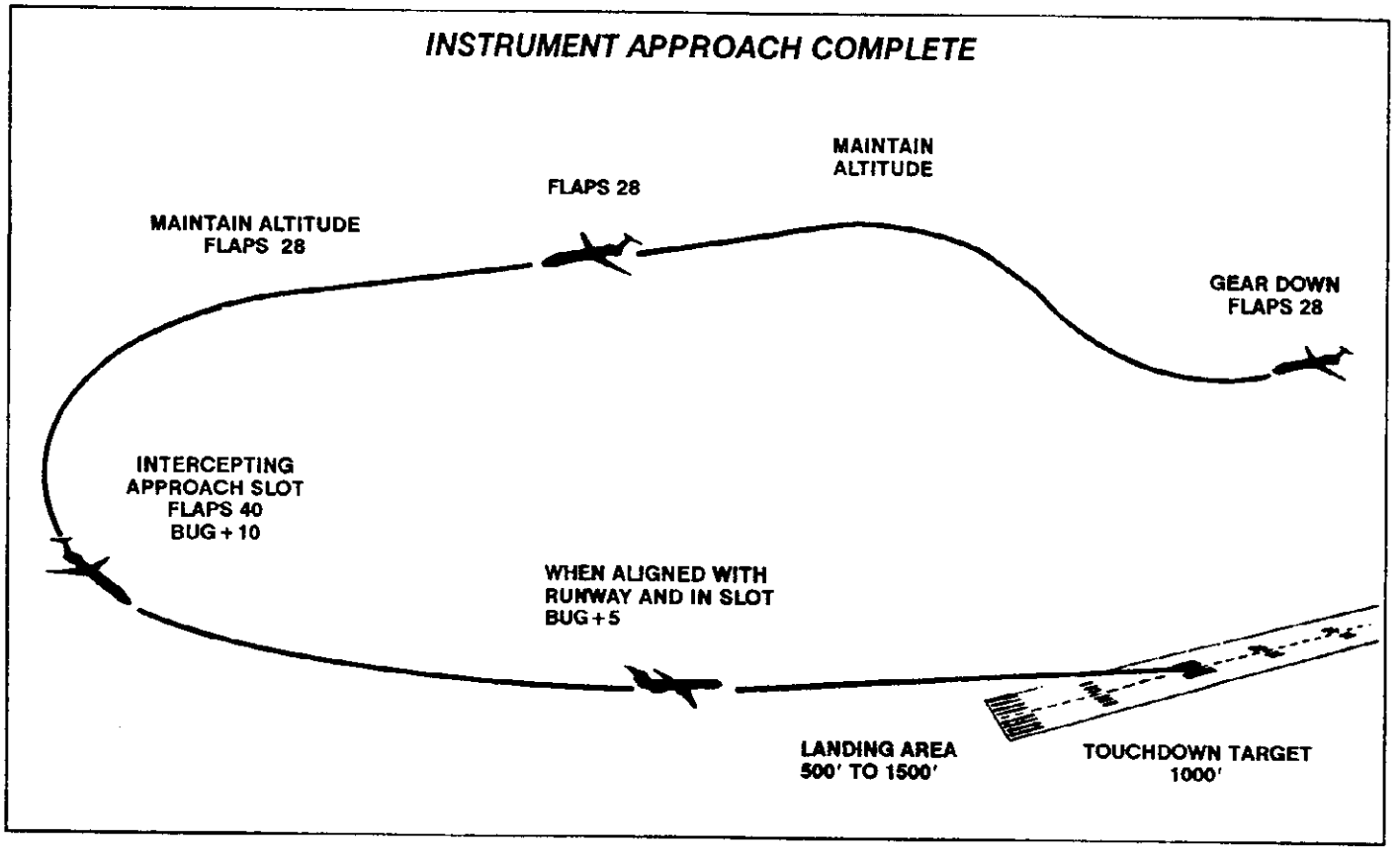
Use speed cards for minimum maneuvering speeds. If not available use tables in FHB 4.56.

Advise ATC, Flight Attendants and passengers as required.

Maximum flaps permitted is 28°.

Airplane is committed to land when thrust is reduced for landing.

# CLOSE-IN CIRCLE




D9X 023 IL-80

Use speed cards for minimum maneuvering speeds. If not available use tables in FHB 4.56.

TWA circling minimums are 1000 and 3 or charted minimums, whichever are higher.

## SUPPLEMENTAL SPEED DATA DC9-80

### TAKEOFF V/FLAP RETRACT SPEEDS

For the selected flap setting and actual gross weight, the $V_1$, $V_R$, $V_2$, flap retract, slat retract, clean maneuvering, and single engine climb speeds may be determined from the following tables.

An > means bug speed setting.

FLAPS 4

| ACT G/W | V1 | VR | V2 > | FLRET > | SLRET > | CLEAN > | SEC |
|---|---|---|---|---|---|---|---|
| 160 | 168 | 171 | 175 | 181 | 219 | 260 | 232 |
| 155 | 164 | 168 | 173 | 178 | 216 | 255 | 229 |
| 150 | 161 | 165 | 170 | 175 | 212 | 251 | 225 |
| 145 | 157 | 162 | 167 | 172 | 208 | 247 | 221 |
| 140 | 154 | 159 | 164 | 169 | 205 | 243 | 217 |
| 135 | 150 | 156 | 161 | 166 | 201 | 238 | 213 |
| 130 | 147 | 152 | 158 | 163 | 198 | 234 | 209 |
| 125 | 143 | 149 | 155 | 160 | 194 | 229 | 205 |
| 120 | 139 | 146 | 152 | 157 | 191 | 225 | 201 |
| 115 | 135 | 142 | 148 | 153 | 186 | 220 | 197 |
| 110 | 131 | 138 | 144 | 149 | 183 | 215 | 192 |
| 105 | 127 | 134 | 141 | 146 | 179 | 210 | 188 |
| 100 | 122 | 130 | 138 | 143 | 175 | 205 | 183 |
| 95 | MC116 | 124 | 134 | 139 | 171 | 200 | 178 |

FLAPS 11

| ACT G/W | V1 | VR | V2 > | FLRET > | SLRET > | CLEAN > | SEC |
|---|---|---|---|---|---|---|---|
| 155 | 150 | 153 | 158 | 163 | 216 | 255 | 229 |
| 150 | 147 | 150 | 155 | 160 | 212 | 251 | 225 |
| 145 | 144 | 147 | 153 | 158 | 208 | 247 | 221 |
| 140 | 141 | 145 | 150 | 155 | 205 | 243 | 217 |
| 135 | 137 | 142 | 147 | 152 | 201 | 238 | 213 |
| 130 | 134 | 139 | 144 | 149 | 198 | 234 | 209 |
| 125 | 130 | 136 | 142 | 147 | 194 | 229 | 205 |
| 120 | 127 | 133 | 139 | 144 | 181 | 225 | 201 |
| 115 | 123 | 129 | 136 | 141 | 186 | 220 | 197 |
| 110 | 120 | 126 | 133 | 138 | 183 | 215 | 192 |
| 105 | MC115 | 121 | 130 | 135 | 179 | 210 | 188 |
| 100 | MC115 | 119 | 128 | 133 | 175 | 205 | 183 |
| 95 | MC115 | 119 | 128 | 133 | 171 | 200 | 178 |

FLAPS 18

| ACT G/W | V1 | VR | V2 > | FLRET > | SLRET > | CLEAN > | SEC |
|---|---|---|---|---|---|---|---|
| 145 | 138 | 140 | 146 | 161 | 208 | 247 | 221 |
| 140 | 134 | 137 | 143 | 158 | 205 | 243 | 217 |
| 135 | 131 | 135 | 140 | 155 | 201 | 238 | 213 |
| 130 | 128 | 132 | 137 | 152 | 198 | 234 | 209 |
| 125 | 124 | 129 | 135 | 150 | 194 | 229 | 205 |
| 120 | 121 | 126 | 132 | 147 | 181 | 225 | 201 |
| 115 | MC115 | 121 | 129 | 144 | 186 | 220 | 197 |
| 110 | MC115 | 118 | 126 | 141 | 183 | 215 | 192 |
| 105 | MC115 | 117 | 125 | 140 | 179 | 210 | 188 |
| 100 | MC115 | 117 | 125 | 140 | 175 | 205 | 183 |
| 95 | MC115 | 117 | 125 | 140 | 171 | 200 | 178 |

FLAPS 23

| ACT G/W | V1 | VR | V2 > | FLRET > | SLRET > | CLEAN > | SEC |
|---|---|---|---|---|---|---|---|
| 140 | 131 | 133 | 138 | 153 | 205 | 243 | 217 |
| 135 | 128 | 130 | 136 | 151 | 201 | 238 | 213 |
| 130 | 125 | 127 | 133 | 148 | 198 | 234 | 209 |
| 125 | 122 | 125 | 130 | 145 | 194 | 229 | 205 |
| 120 | 118 | 122 | 127 | 142 | 181 | 225 | 201 |
| 115 | MC114 | 117 | 125 | 140 | 186 | 220 | 197 |
| 110 | MC114 | 115 | 123 | 138 | 183 | 215 | 192 |
| 105 | MC114 | 115 | 123 | 138 | 179 | 210 | 188 |
| 100 | MC114 | 115 | 123 | 138 | 175 | 205 | 183 |
| 95 | MC114 | 115 | 123 | 138 | 171 | 200 | 178 |

Some MD80 dispatcher only takeoff charts use flap settings that are not included on the speed cards or listed above. These charts have the V speeds printed for use with the respective flaps.

The following flap retraction speeds should be used:

| FLAP SETTING | |
|---|---|
| LESS THAN 15 DEGREES | 15 DEGREES OR GREATER |
| $V_2$ + 5 KNOTS | $V_2$ + 15 KNOTS |

Use the slat retraction and clean maneuvering speeds that are printed on the speed cards.

## SPEED CARDS

### CARD DESCRIPTION

Speed cards for individual gross weights are provided in the cockpit at all times. The front side of each card contains speed data for takeoff and the back side contains speed data for approach and landing.

The takeoff side contains speeds for V1, VR, V2, flap/slat retraction, clean maneuvering, and single engine climb. The V speeds are applicable for standard thrust at all temperatures from sea level to 2,000 feet. For maximum thrust takeoffs, speed corrections for altitude, temperature, and runway slope are provided at the rear of the deck.

Target pitch attitudes for two engine (upper) and single engine (lower) takeoff/climb are also displayed on the takeoff side.

The approach and landing side of each card contains speeds for maneuvering, landing, minimum go-around, and single engine driftdown. The speeds are applicable for all temperatures and station elevations.

Maneuvering speeds, for designated flap/slat configurations, are based on 30 degrees of bank. These speeds conservatively protect to 45 degrees of bank without encountering stall buffet.

Landing speeds are Vref speeds which are based on 15 degrees of bank. These speeds conservatively protect to 30 degrees of bank without encountering stall buffet.

### INSTRUCTIONS

Enter the cards with actual, or planned, weight at the selected flap configuration and read the speeds for the operational condition. Use the card that is nearest the actual weight. When actual weight is midway between two cards, use the higher weight card.

Enter the Speed Corrections card with altitude and performance temperature to obtain V1 and VR adjustments. Interpolate as necessary. Also determine the runway slope adjustment for V1.

### EXAMPLE NO. 1 - MAXIMUM THRUST

Enter the -80 speed cards with actual weight (140,000 lbs) and flaps 4 to read V1 (154 kts), VR (159 kts), V2 (164 kts), flap retract speed (169 kts), slat retract speed (205 kts), and, clean maneuvering speed (243 kts). Note pitch attitude for two engine (18 degrees) and one engine (14 degrees).

Enter the Speed Corrections card with altitude (2,000 ft) and performance temperature (80°F) to read V1 adjustment (-1) and VR adjustment (-1). For uphill runway slope of (1.1%), compute V1 adjustment (+3). Correct V1 (154-1+3=156). Correct VR (159-1=158).

### EXAMPLE NO. 2 - OVERWEIGHT LANDING

Enter the -80 speed cards with actual landing weight (140,000 lbs) and flap 40 to read landing Vref (137 kts). Note minimum go-around speed (150 kts) and flaps 11/15 minimum maneuvering speed (166 kts).

| 140,000 | | | |
|---|---|---|---|
| 18/14 PITCH | SLATS T/O FLAPS | | |
| | 4 | 11 | 18 |
| V1 | 154 | 141 | 134 |
| CORRECT V1 AND VR FOR MAX THRUST | | | |
| VR | 159 | 145 | 137 |
| V2 | 164 | 150 | 143 |
| RETRACT SPEEDS | | | |
| FLAPS | 169 | 155 | 158 |
| SLATS | 205 | | |
| CLEAN MANEUVERING | | | |
| 243 | | | |
| SINGLE ENGINE CLIMB | | | |
| 217 | | | |

| 140,000 OVERWEIGHT | | |
|---|---|---|
| | FLAPS | SPEEDS |
| MANEUVERING | CLEAN | 243 |
| | SLATS ONLY | 190 |
| | 11/15 | 166 |
| | 28 | 152 |
| LNDG | 40 | 137 |
| MIN GO-AROUND 15° MAX BANK ∠ | | 150 |
| SINGLE ENGINE DRIFTDOWN | | |
| ABOVE FL 180 | | 258 |
| BELOW FL 180 | | 217 |

## SUPPLEMENTAL SPEED DATA DC9-80 (Cont'd)

### MANEUVERING/LANDING SPEEDS

For the selected flap setting and actual gross weight, minimum maneuvering speeds for clean, slats, 11/15, and 28 may be determined from the following table. Landing Vref, minimum go-around, and single engine driftdown speeds are also displayed.

An < means bug speed setting.

| ACT G/W | MANEUVERING CLEAN < | SLATS < | 11/15 < | 28 | LNDG FLAP 40 < | MIN G/A | SED ABOVE FL180 |
|---|---|---|---|---|---|---|---|
| 160 | 260 | 202 | 178 | 163 | 146 | 160 | 278 |
| 155 | 255 | 200 | 175 | 160 | 144 | 158 | 273 |
| 150 | 251 | 197 | 171 | 157 | 141 | 155 | 268 |
| 145 | 247 | 193 | 169 | 155 | 139 | 153 | 263 |
| 140 | 243 | 190 | 166 | 152 | 137 | 150 | 258 |
| 135 | 238 | 187 | 164 | 150 | 135 | 147 | 253 |
| 130 | 234 | 183 | 160 | 146 | 132 | 144 | 248 |
| 125 | 229 | 179 | 157 | 144 | 130 | 142 | 243 |
| 120 | 225 | 176 | 154 | 141 | 127 | 139 | 238 |
| 115 | 220 | 172 | 151 | 138 | 124 | 136 | 233 |
| 110 | 215 | 168 | 147 | 135 | 121 | 133 | 227 |
| 105 | 210 | 164 | 144 | 132 | 118 | 129 | 222 |
| 100 | 205 | 160 | 141 | 128 | 115 | 128 | 216 |
| 95 | 200 | 156 | 137 | 125 | 113 | 128 | 210 |
| 90 | 194 | 152 | 133 | 122 | 110 | 128 | 205 |
| 85 | 189 | 147 | 130 | 118 | 107 | 128 | 199 |
| 80 | 184 | 143 | 128 | 115 | 103 | 128 | 193 |

### SPEED CORRECTIONS

For the selected altitude and performance temperature, the V1 and VR adjustments may be determined from the following tables. Runway slope adjustment for V1 is also displayed.

**SPEED CORRECTIONS**

APPLY CORRECTIONS AS FOLLOWS:
95,000 LBS AND GREATER FLAP 4
105,000 LBS AND GREATER FLAP 11
115,000 LBS AND GREATER FLAP 18
120,000 LBS AND GREATER FLAP 23

ALTITUDE

| TEMP | 0 V1 | 2000 V1 | 4000 V1 | 6000 V1 | 8000 V1 |
|---|---|---|---|---|---|
| -10/70 | -3 | -1 | 0 | +1 | +2 |
| 80 | -3 | -1 | +1 | +2 | +4 |
| 90 | -2 | 0 | +2 | +3 | +5 |
| 100 | -1 | +1 | +3 | +5 | +6 |
| 110 | 0 | +2 | +4 | +6 | |
| 120 | +1 | +3 | +5 | | |

SLOPE - REDUCE V1 2 KT/-1.0 PCT
INCREASE V1 3 KT/+1.0 PCT

ALTITUDE

| TEMP | 0 VR | 2000 VR | 4000 VR | 6000 VR | 8000 VR |
|---|---|---|---|---|---|
| -10/70 | -2 | -2 | -1 | 0 | +1 |
| 80 | -2 | -1 | -1 | 0 | +1 |
| 90 | -1 | -1 | 0 | +1 | +2 |
| 100 | -1 | 0 | 0 | +1 | +2 |
| 110 | 0 | 0 | +1 | +2 | |
| 120 | 0 | 0 | +1 | | |