

MD500E®

PERFORMANCE SPECIFICATIONS

3.0 MD500E® PERFORMANCE SPECIFICATIONS

3.1 Performance Specifications (C20B Engine)

| Performance With C20B Engine | | | |
|--|---|------------------------|--------------------------------------|
| Characteristics at Design Gross Weight | | Metric 1361 KG | Imperial 3000 lb. |
| Maximum Cruise Speed | Sea level 1524 m (5,000 ft) | 249 km/hr 246 km/hr | 135 kt (155 mph) 133 kt (153 mph) |
| Speed for Best Range | 1524 m (5,000 ft) | 222 km/hr | 120 kt (138 mph) |
| Maximum Permitted Speed | VNE at sea level | 282 km/hr | 152 kt (175 mph) |
| Maximum Range | Sea level 1524 m (5,000 ft) | 478 km 537 km | 258 nm (297 mi) 290 nm (304 mi) |
| Maximum Endurance | Sea level | 2.8 hr | 2.8 hr |
| Maximum Rate of Climb:(TOP) | Sea level, Standard day ISA +20° C day | 9.0 m/sec 9.0 m/sec | 1,770 fpm 1,776 fpm |
| Maximum Operating Altitude | Density Altitude | 4877 m | 16,000 ft |
| Service Ceiling | ISA | 4227 m | 13,900 ft |
| Maximum Hook Capacity | | 907 kg | 2,000 lb |
| Hovering Performance In-ground effect | Standard day ISA + 20° C day | 2591 m 1829 m | 8,500 ft 6,000 ft |
| Out-of-ground effect: | Standard day ISA + 20° C day | 1829 m 945 m | 6,800 ft 3,100 ft |
| WEIGHTS | | | |
| Characteristics | | Metric | Imperial |
| Maximum Gross Weight | Normal category | 1361 kg | 3,000 lb |
| External load operations | | 1610 kg | 3,550 lb |
| Empty Weight | Standard configuration | 672 kg | 1,481 lb |
| Useful Load | Normal category | 689 kg | 1,519 lb |
| External load operations | | 938 kg | 2,069 lb |
| Usable Fuel Capacity | 242 L (64 gal) | 183 kg | 403 lb |
| POWER PLANT | | | |
| Characteristics | | Metric | Imperial |
| Rolls-Royce Model 250-C20B gas turbine | Rated power: | 313 kw | 420 shp |
| Derated for reliability and safety to | Takeoff power Max continuous power | 280 kw 261 kw | 375 shp 350 shp |

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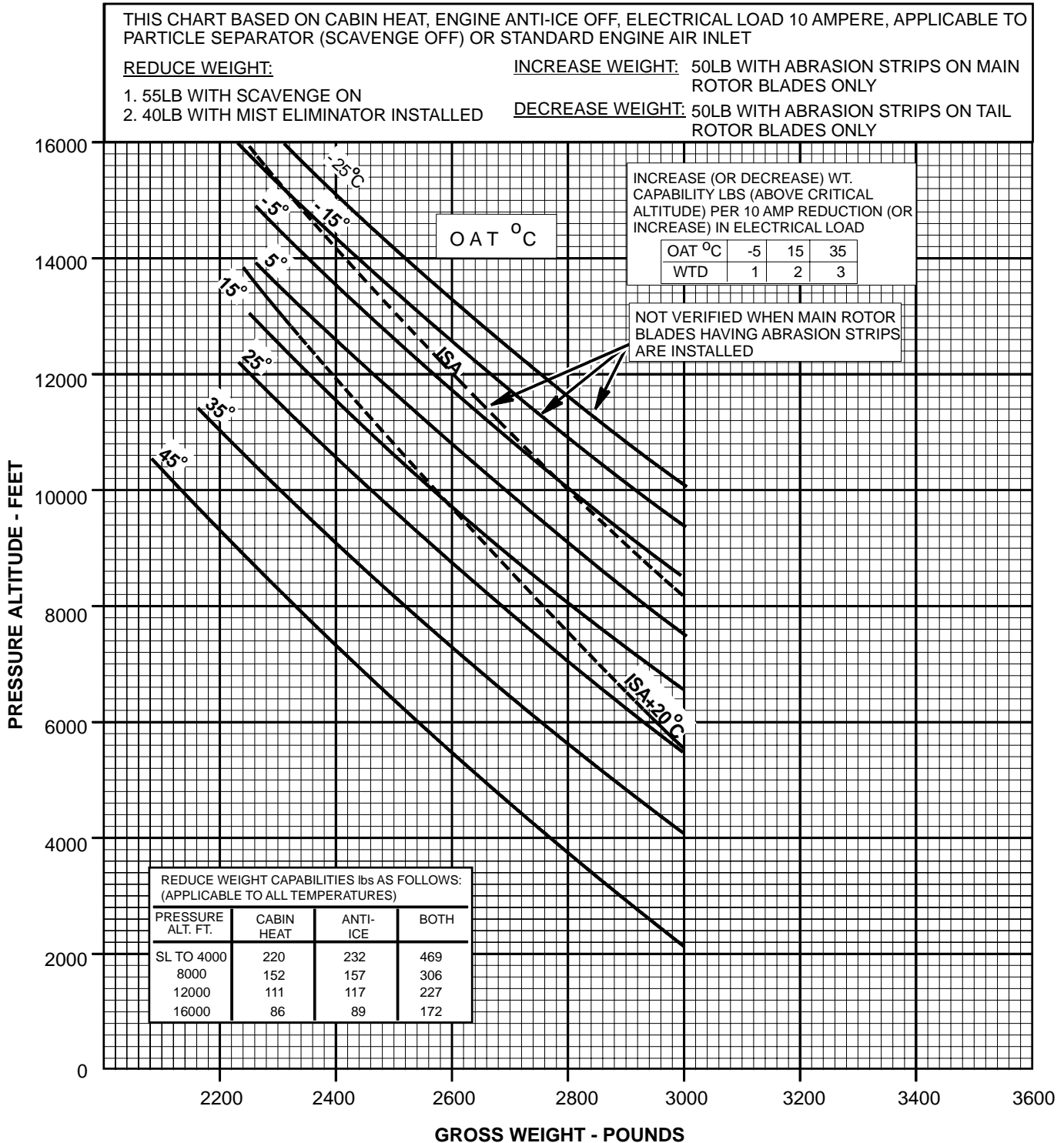
3.2 Performance Specifications (C20R Engine)

| Performance with C20R Engine | | | |
|---|---|------------------------|--------------------------------------|
| Characteristics at Design Gross Weight | | Metric 1361 KG | Imperial 3000 lb. |
| Maximum Cruise Speed | Sea level 1524 m (5,000 ft) | 249 km/hr 251 km/hr | 135 kt (155 mph) 136 kt (156 mph) |
| Speed for Best Range | 1524 m (5,000 ft) | 222 km/hr | 170 kt (138 mph) |
| Maximum Permitted Speed | VNE at sea level | 282 km/hr | 152 kt (175 mph) |
| Maximum Range | Sea level 1524 m (5,000 ft) | 472 km 532 km | 255 nm (293 mi) 287 nm (297 mi) |
| Maximum Endurance | Sea level | 2.7 hr | 2.7 hr |
| Maximum Rate of Climb:(TOP) | Sea level, Standard day ISA +20° C day | 9.0 m/sec 9.0 m/sec | 1,770 fpm 1,776 fpm |
| Maximum Operating Altitude | Density Altitude | 4877 m | 16,000 ft |
| Service Ceiling | ISA | 5029 m | 16,500 ft |
| Maximum Hook Capacity | | 907 kg | 2,000 lb |
| Hovering Performance In-ground effect | Standard day ISA + 20° C day | 3444 m 2103 m | 11,300 ft 6,900 ft |
| Out-of-ground effect: | Standard day ISA + 20° C day | 2652 m 1250 m | 9,500 ft 4,100 ft |
| WEIGHTS | | | |
| Characteristics | | Metric | Imperial |
| Maximum Gross Weight | Normal category External load operations | 1361 kg 1610 kg | 3,000 lb 3,550 lb |
| Empty Weight | Standard configuration | 686 kg | 1,517 lb |
| Useful Load | Normal category External load operations | 673 kg 922 kg | 1,483 lb 2,033 lb |
| Usable Fuel Capacity | 242 L (64 gal) | 183 kg | 403 lb |
| POWER PLANT | | | |
| Characteristics | | Metric | Imperial |
| Rolls-Royce Model 250-C20B gas turbine, Rated power | | 336 kw | 450 shp |
| De-rated for reliability and safety to | Takeoff power: Max. continuous power | 280 kw 261 kw | 375 shp 350 shp |

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3.3 Hover-In-Ground-Effect (C20B Engine)



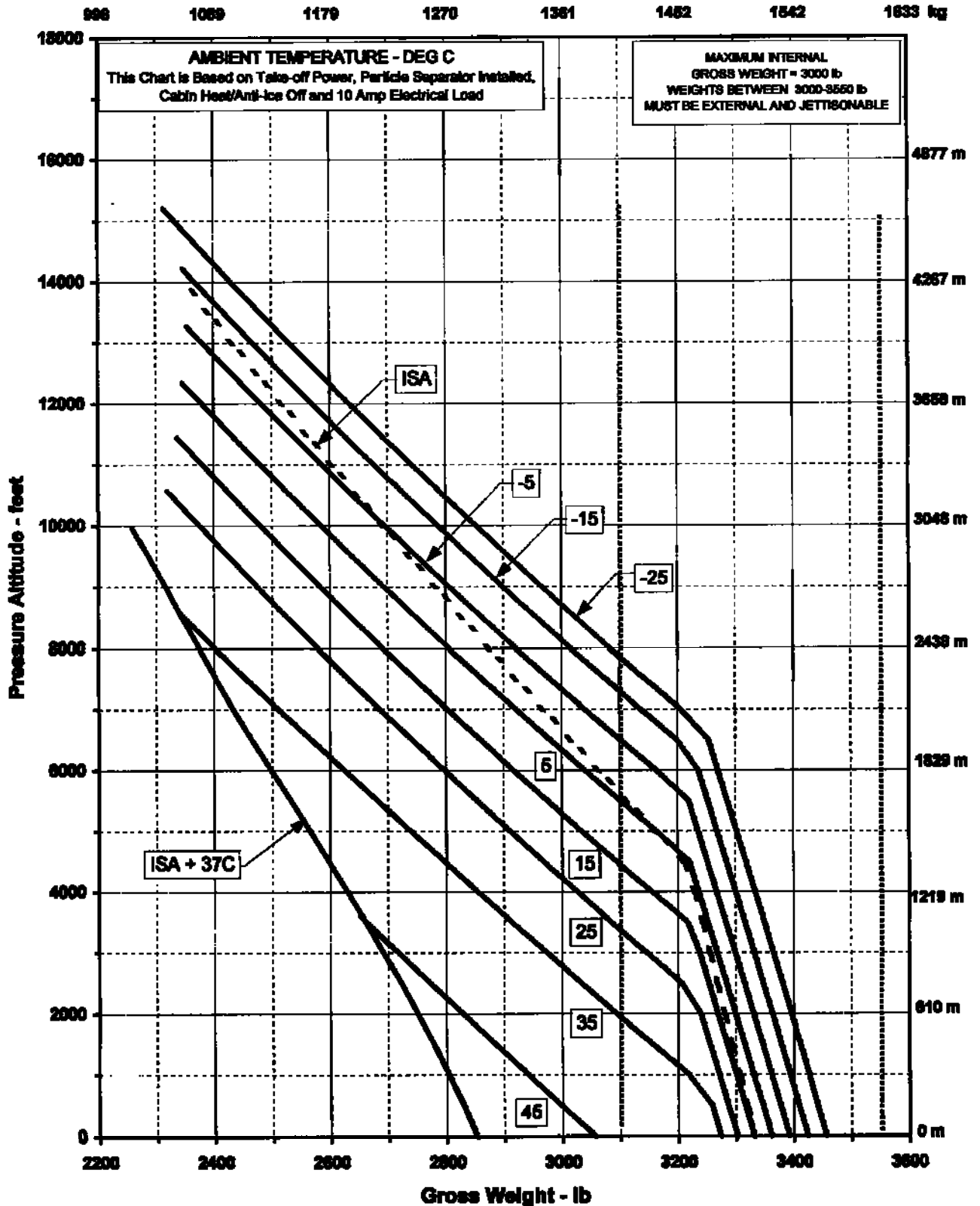
<<<< **ROLLS ROYCE 250-C20B** >>>>

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3.4 Hover-Out-of-Ground-Effect (C20B Engine),



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3.5 Takeoff Gross Weight Worksheet (C20B Engine)

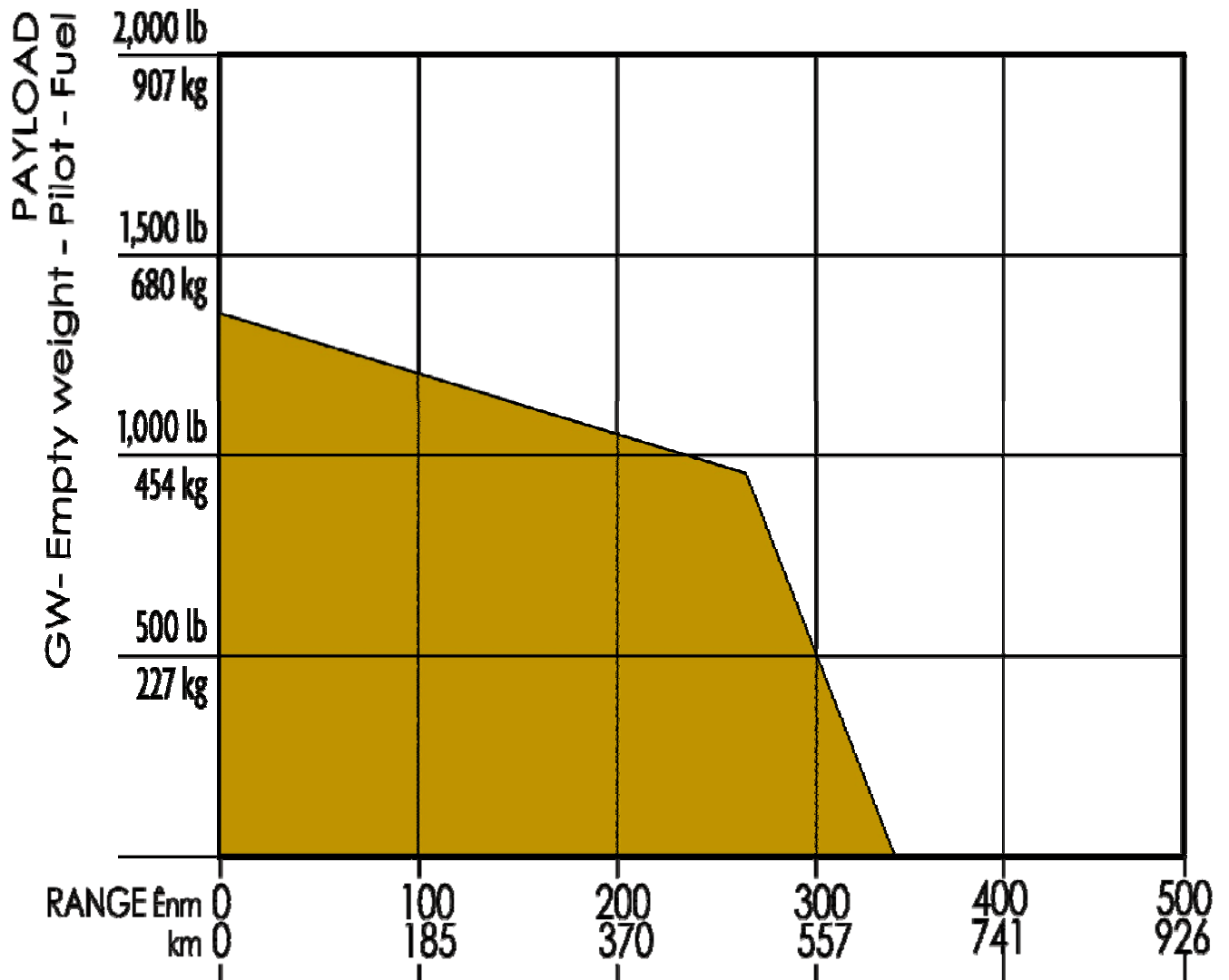
| | C20B | Mission #1 | Mission #2 |
|--------------|-----------------------|------------|------------|
| Empty Weight | 1,481 lb (672 kg) | | |
| Pilot | 170 lb (77 kg) | | |
| Fuel | 403 lb (183 kg) | | |
| Payload | 946 lb (428 kg) | | |
| Takeoff GW | 3,000 lb (1361 kg) | | |

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3.6 Payload vs Range (5000', ISA) (C20B Engine)

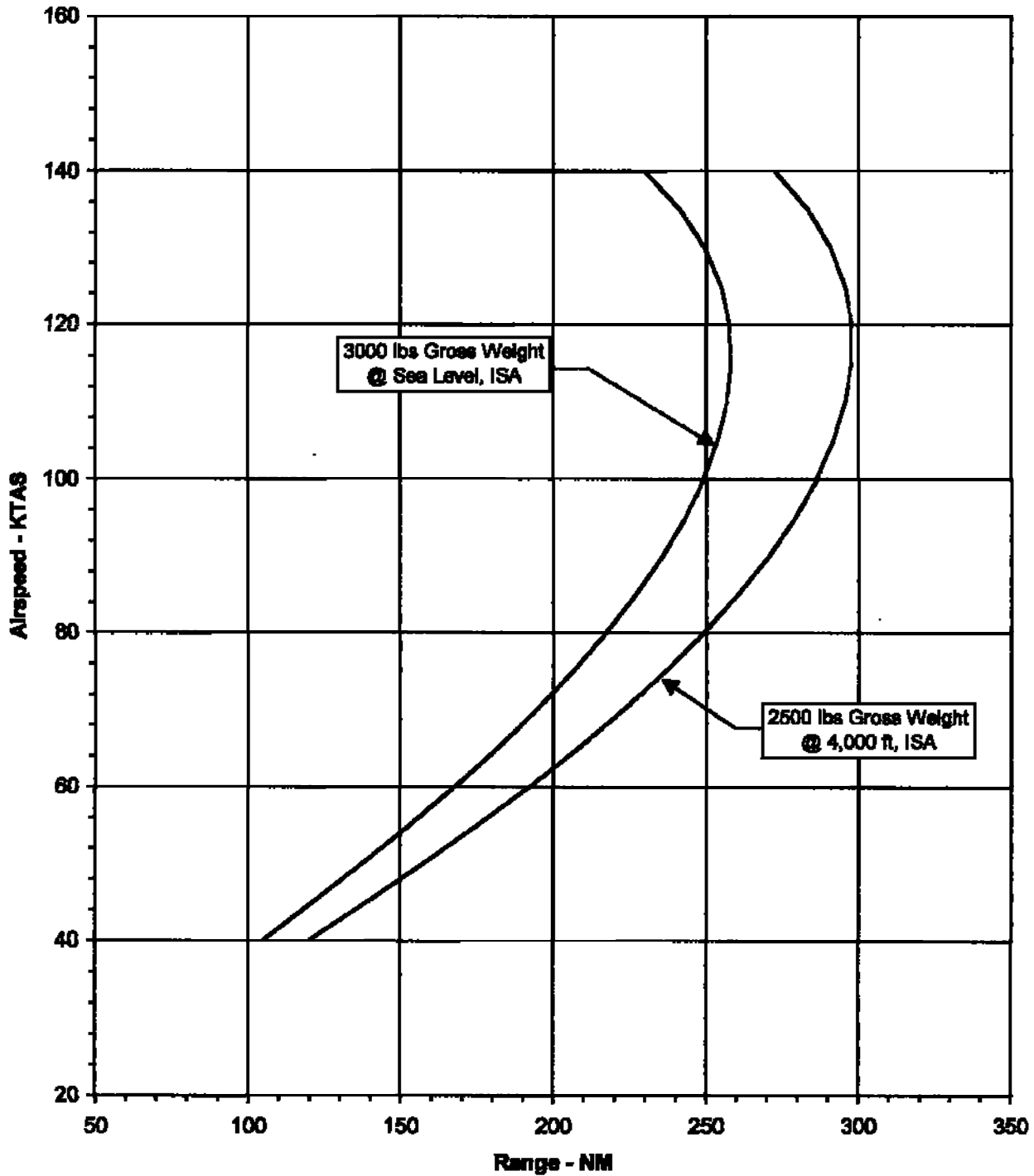
PAYLOAD & RANGE (5000', ISA)



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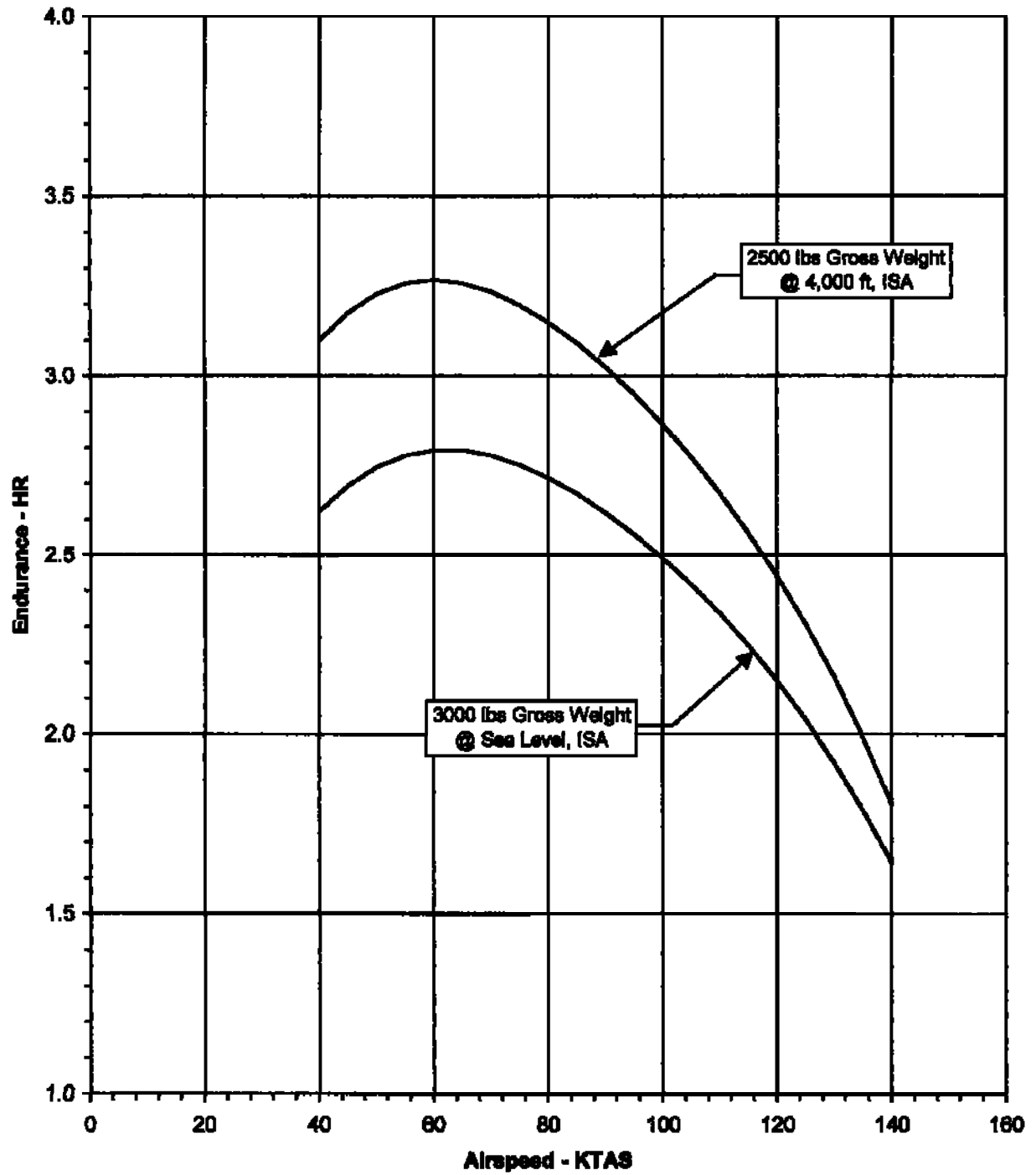
3.7 Speed for Best Range (C20B Engine)



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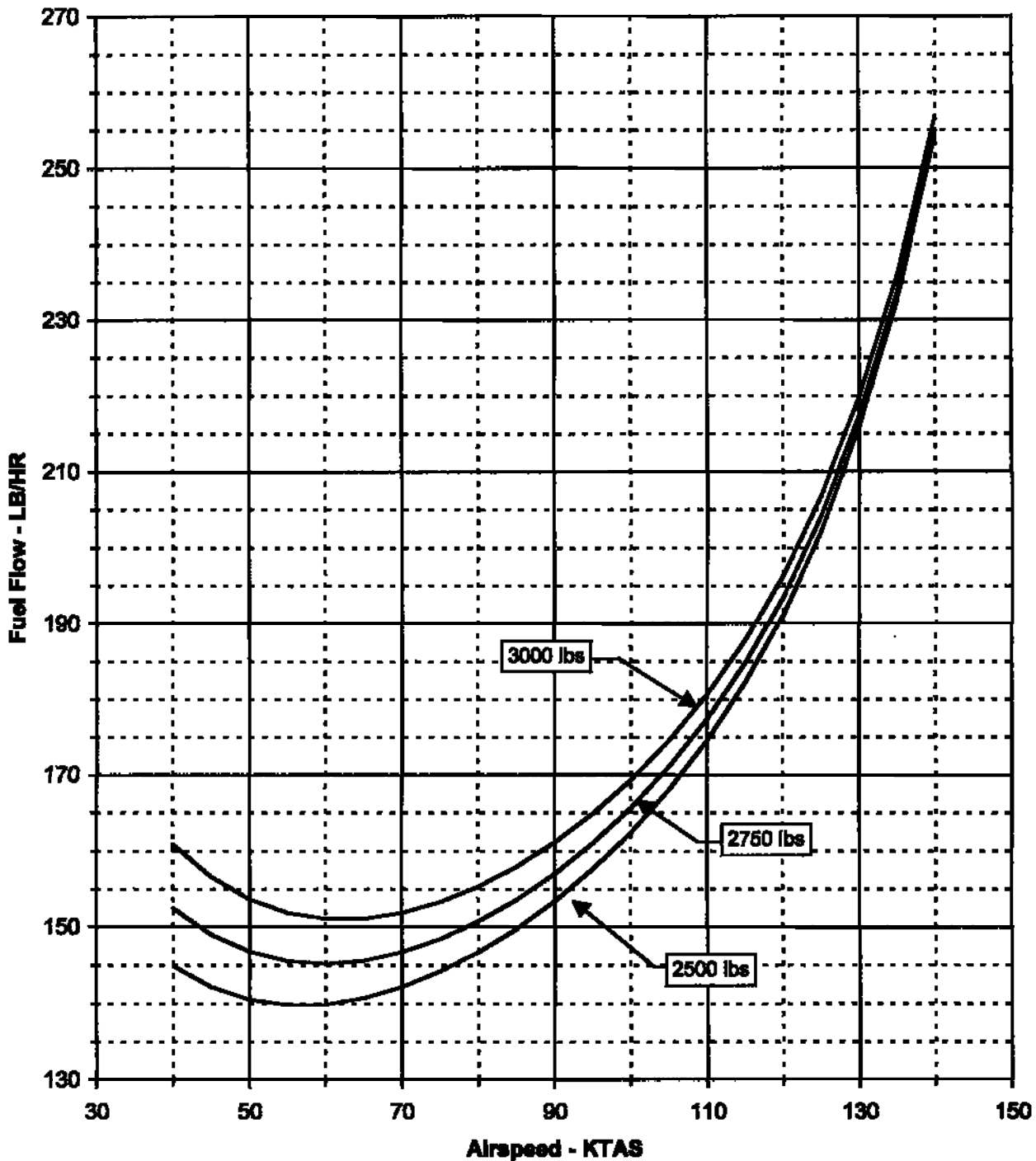
3.8 Speed for Best Endurance (C20B Engine)



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3.9 Fuel Flow, Sea Level, ISA (15°C) (C20B Engine)

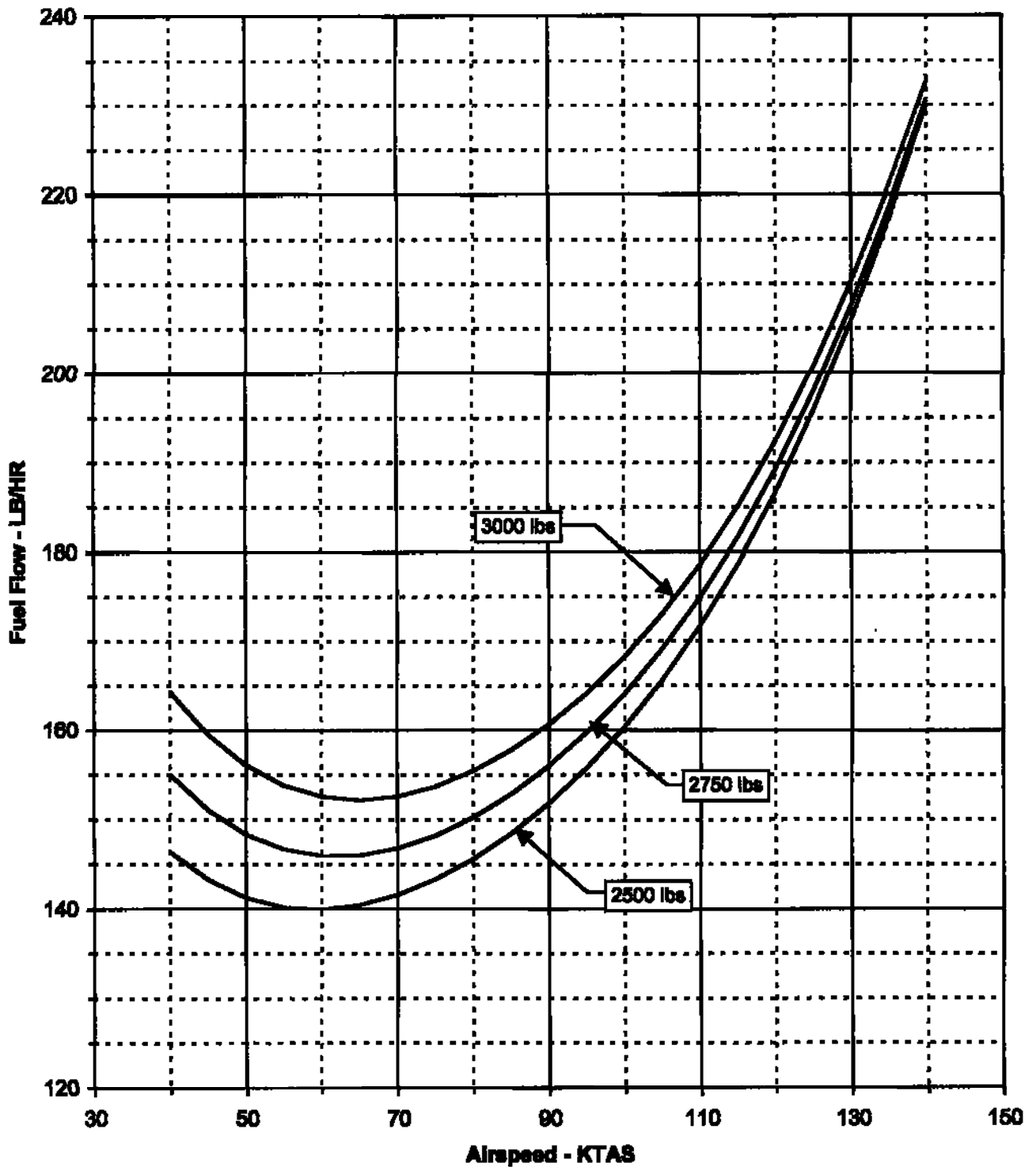


Note: Use for Estimates Only. Not FAA Approved. Based on clean aircraft, level flight performance, minimum specification engine, particle separator and 10 ampere electrical load.

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3.10 Fuel Flow, Sea Level, ISA +20°C (35°C) (C20B Engine)

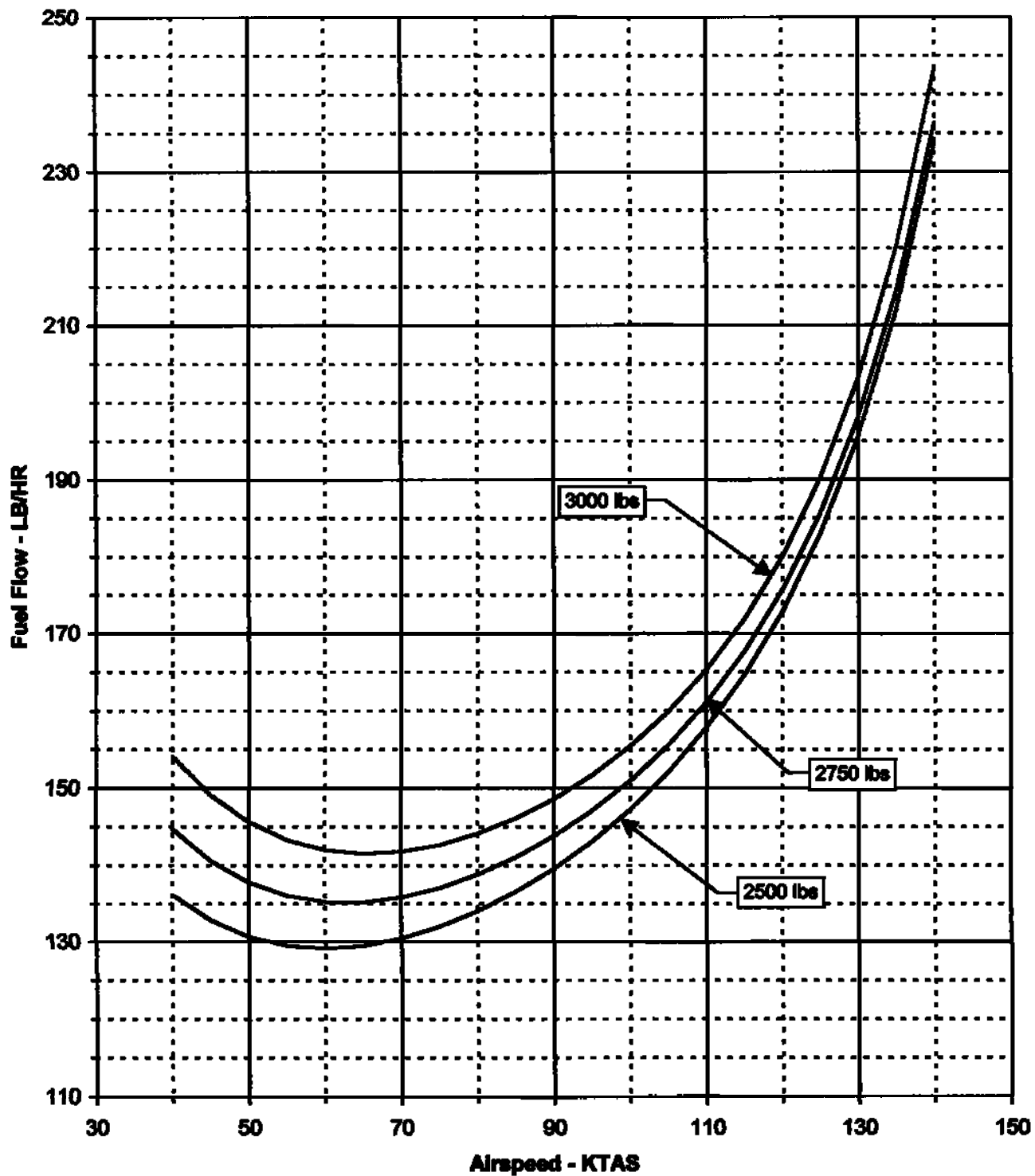


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3.11 Fuel Flow, 4,000 feet, ISA (7°C) (C20B Engine)

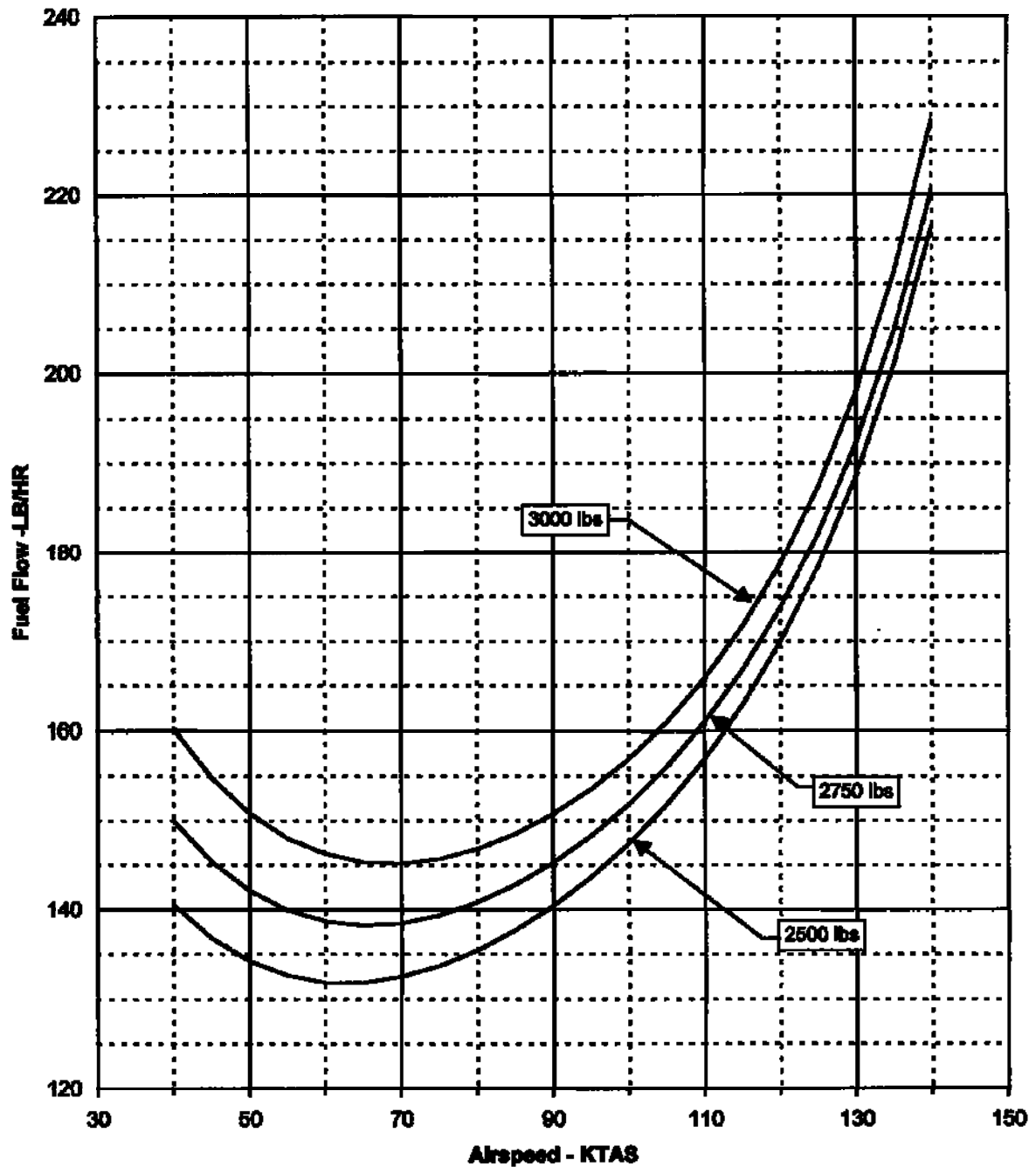


Note: Use for Estimates Only. Not FAA Approved. Based on clean aircraft, level flight performance, minimum specification engine, particle separator and 10 ampere electrical load.

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3.12 Fuel Flow, 4,000 feet, ISA +20°C (27°C) (C20B Engine)

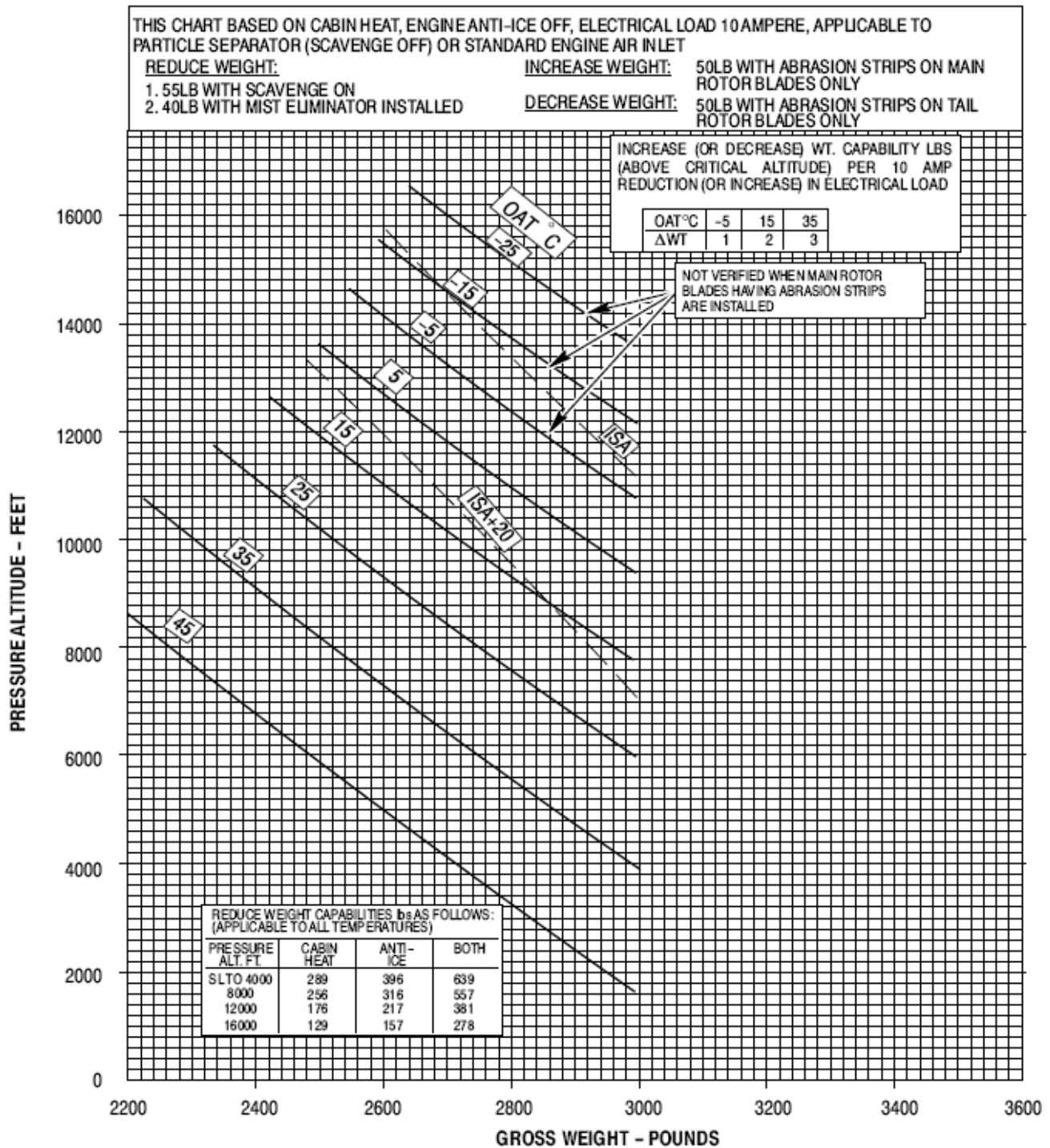


Note: Use for Estimates Only. Not FAA Approved. Based on clean aircraft, level flight performance, minimum specification engine, particle separator and 10 ampere electrical load.

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3.13 Hover-In-Ground-Effect (C20R Engine)



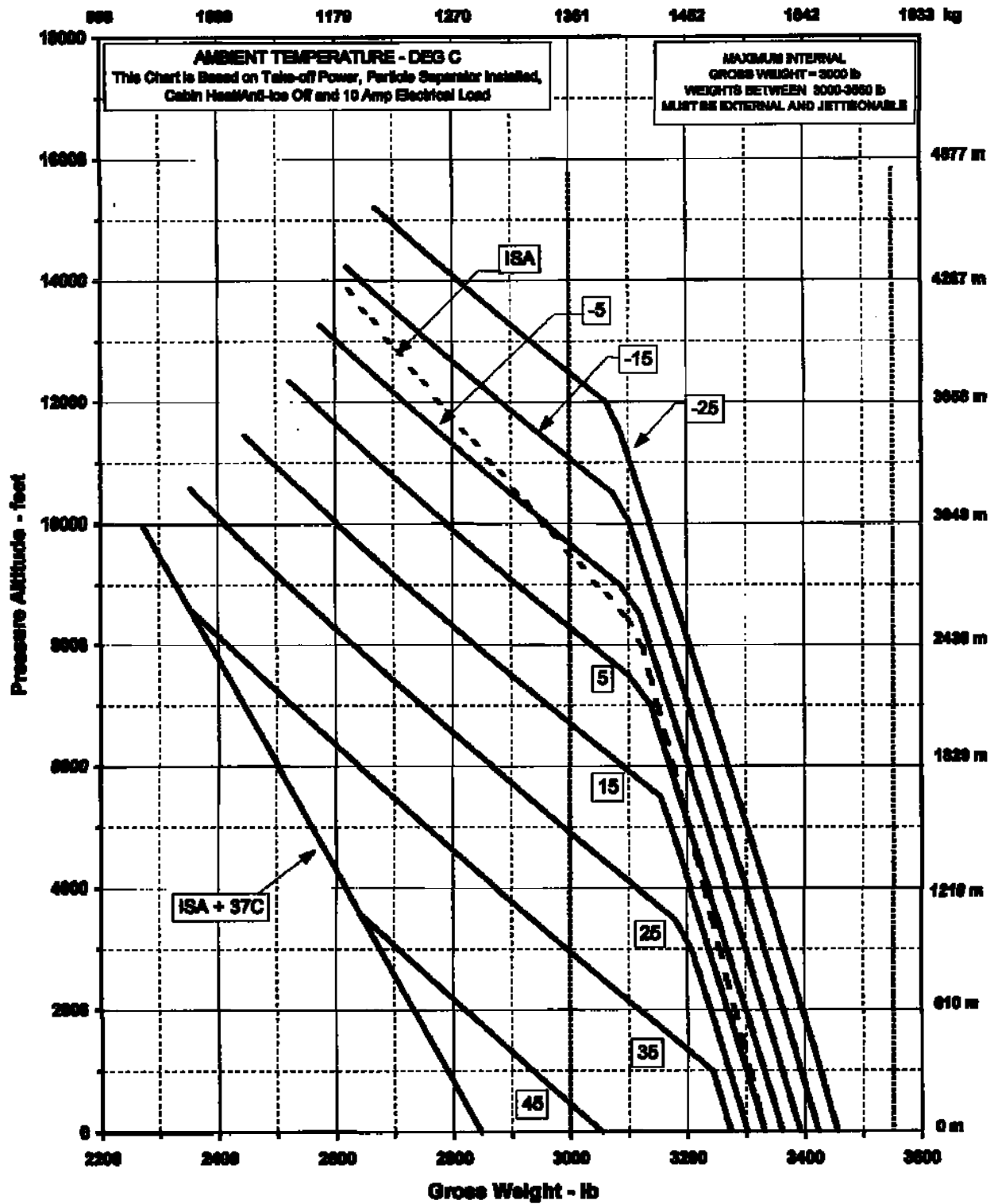
F09-096-2

Figure 5-11. Hover Ceiling VS Gross Weight, IGE, 3.5 Foot Skid Clearance, Extended Landing Gear, Allison 250-C20R/2

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3.14 Hover-Out of-Ground-Effect (C20R Engine)



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3.15 Takeoff Gross Weight Worksheet (C20R Engine)

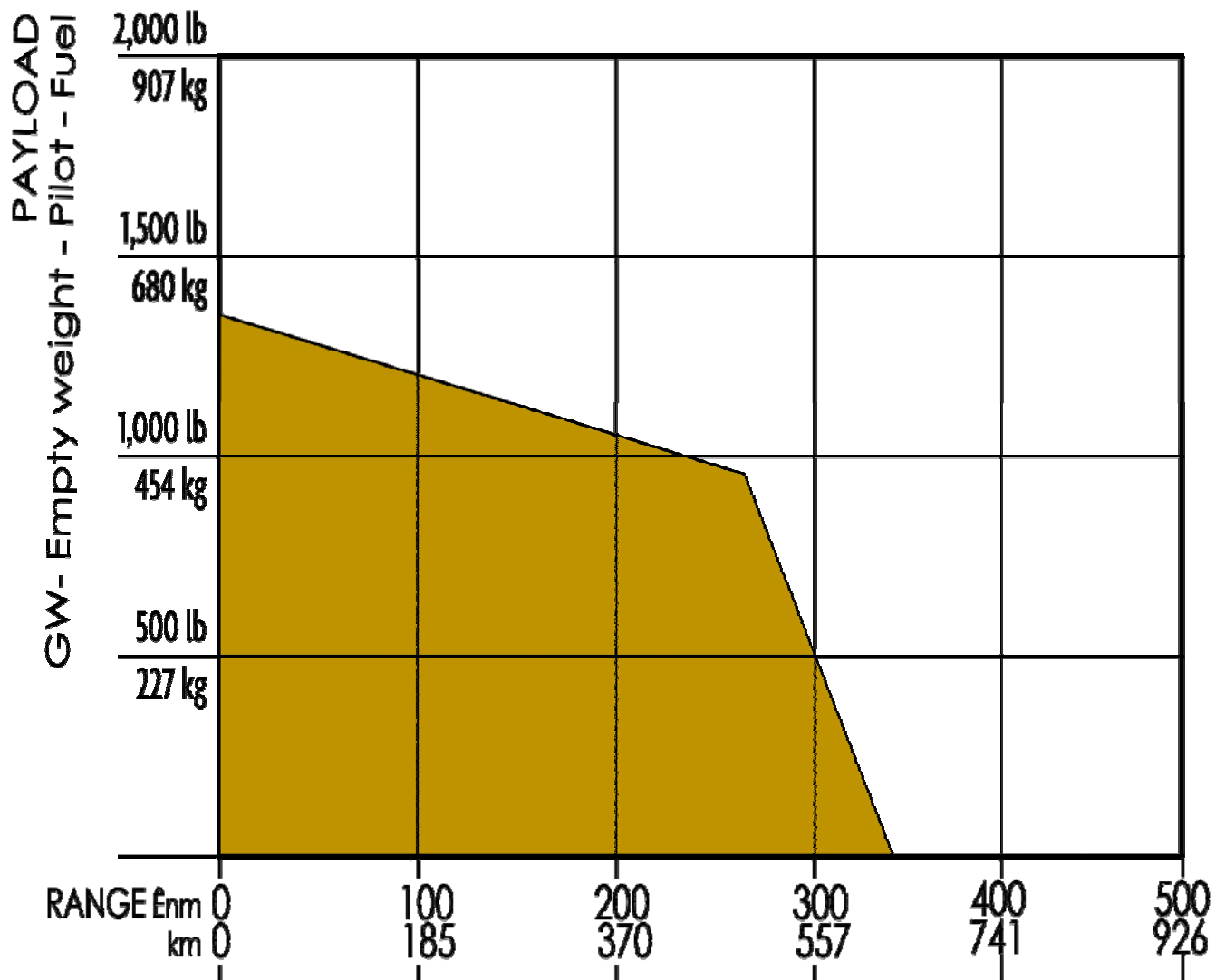
| | C20R | Mission #1 | Mission #2 |
|--------------|-----------------------|------------|------------|
| Empty Weight | 1,517 lb (688 kg) | | |
| Pilot | 170 lb (77 kg) | | |
| Fuel | 403 lb (183 kg) | | |
| Payload | 910 lb (413 kg) | | |
| Takeoff GW | 3,000 lb (1361 kg) | | |

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3.16 Payload vs Range (5000', ISA) (C20R Engine)

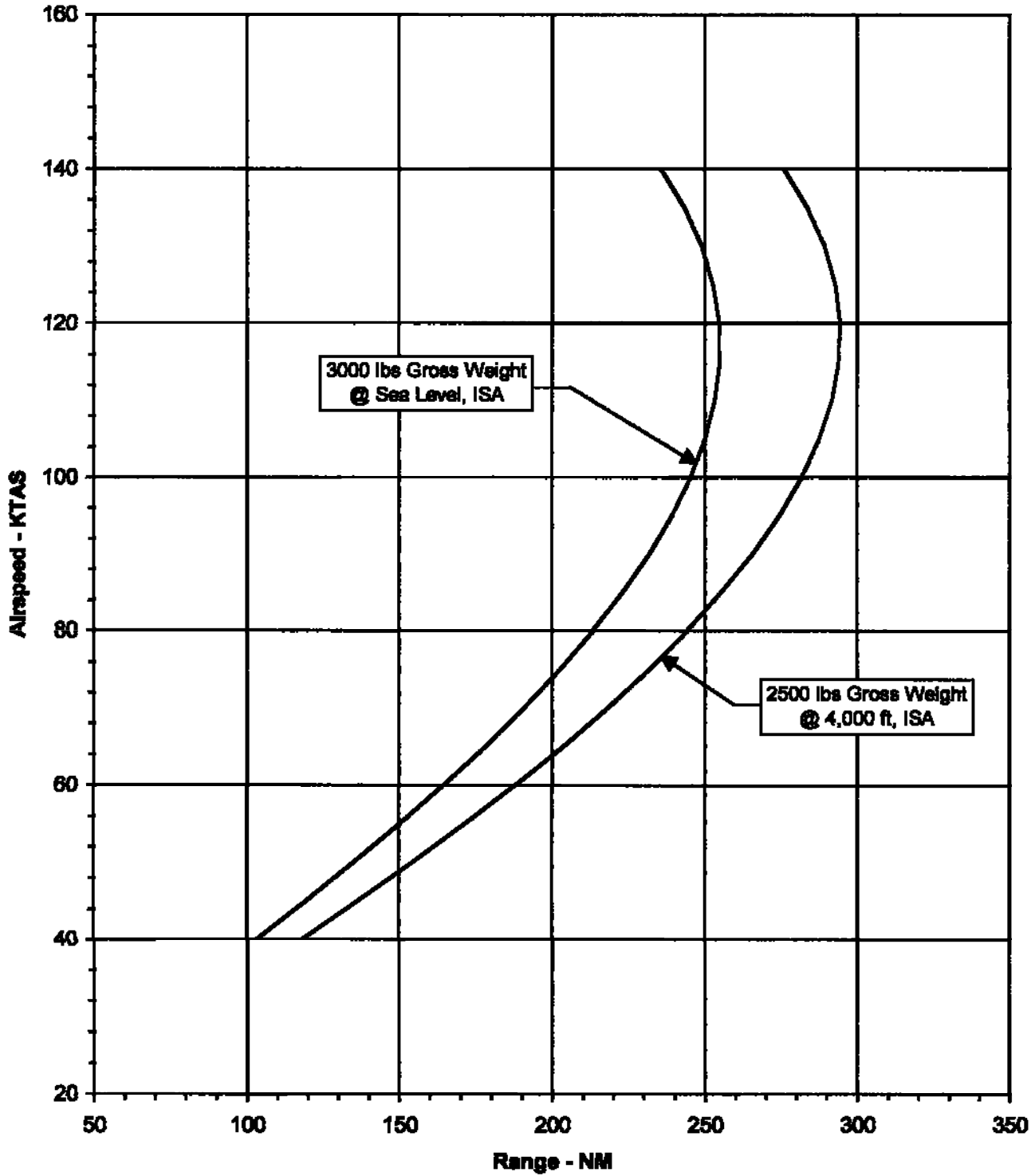
PAYLOAD & RANGE (5000', ISA)



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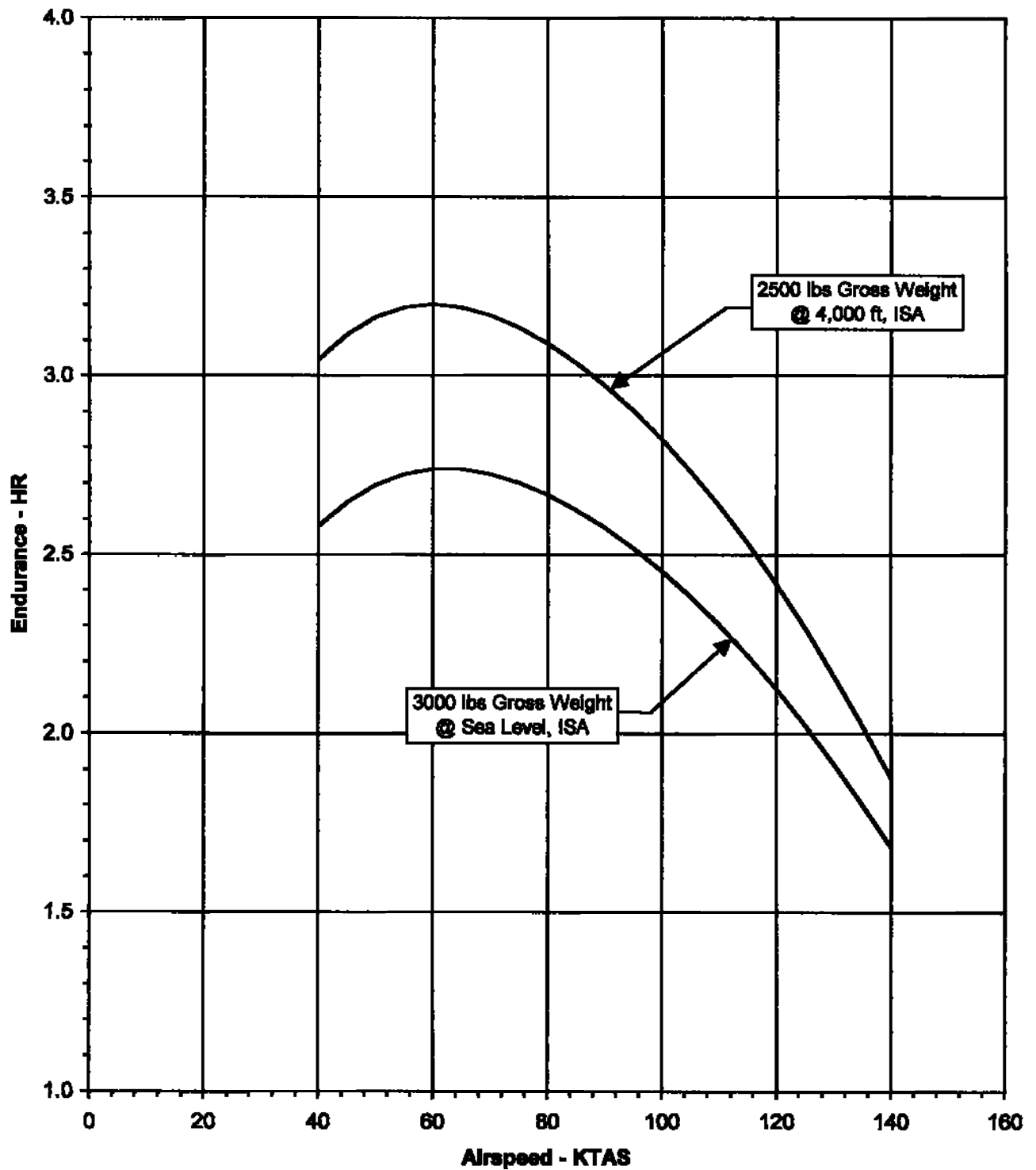
3.17 Speed for Best Range (C20R Engine)



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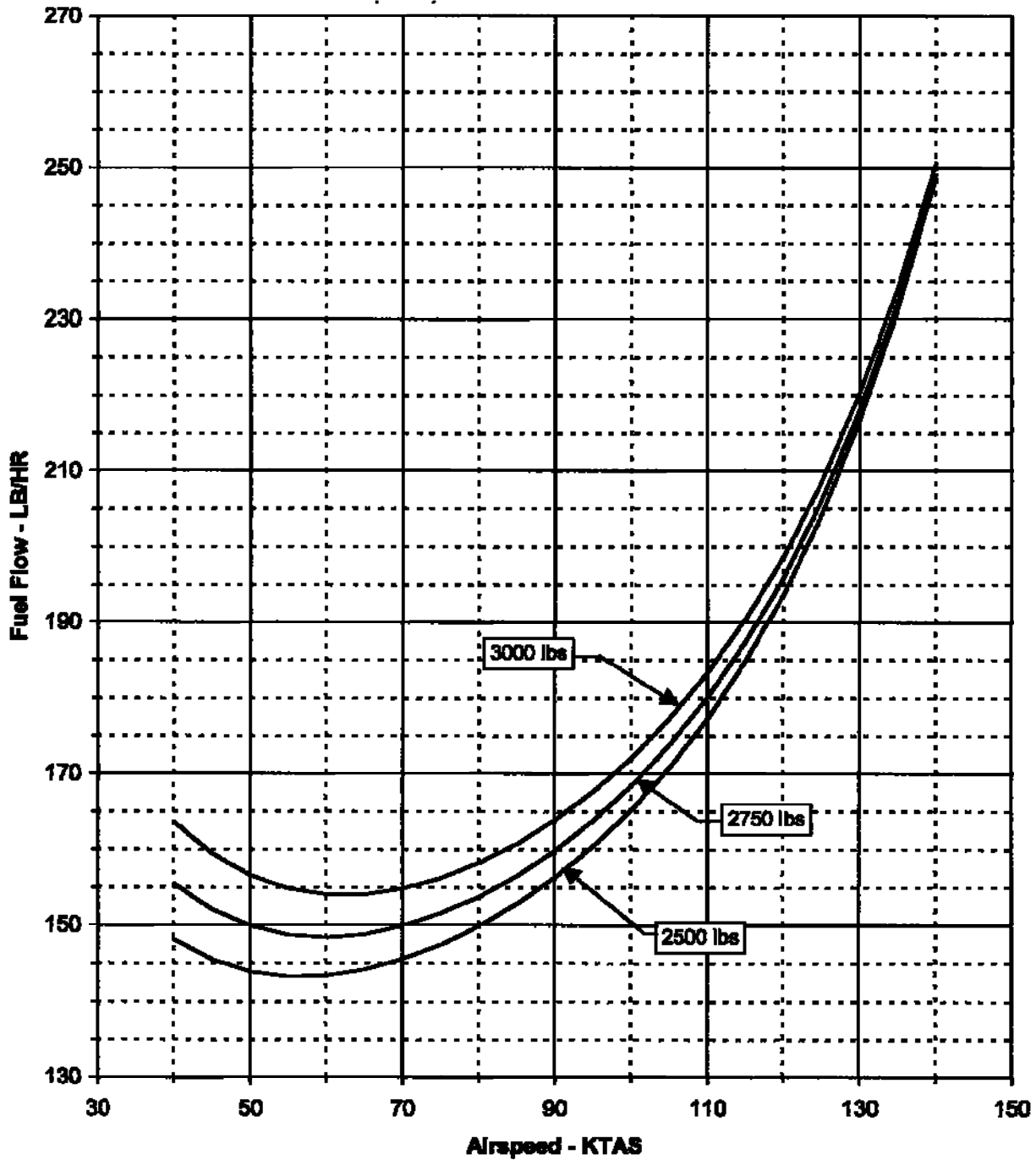
3.18 Speed for Best Endurance (C20R Engine)



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3.19 Fuel Flow, Sea Level, ISA (15°C) (C20R Engine)

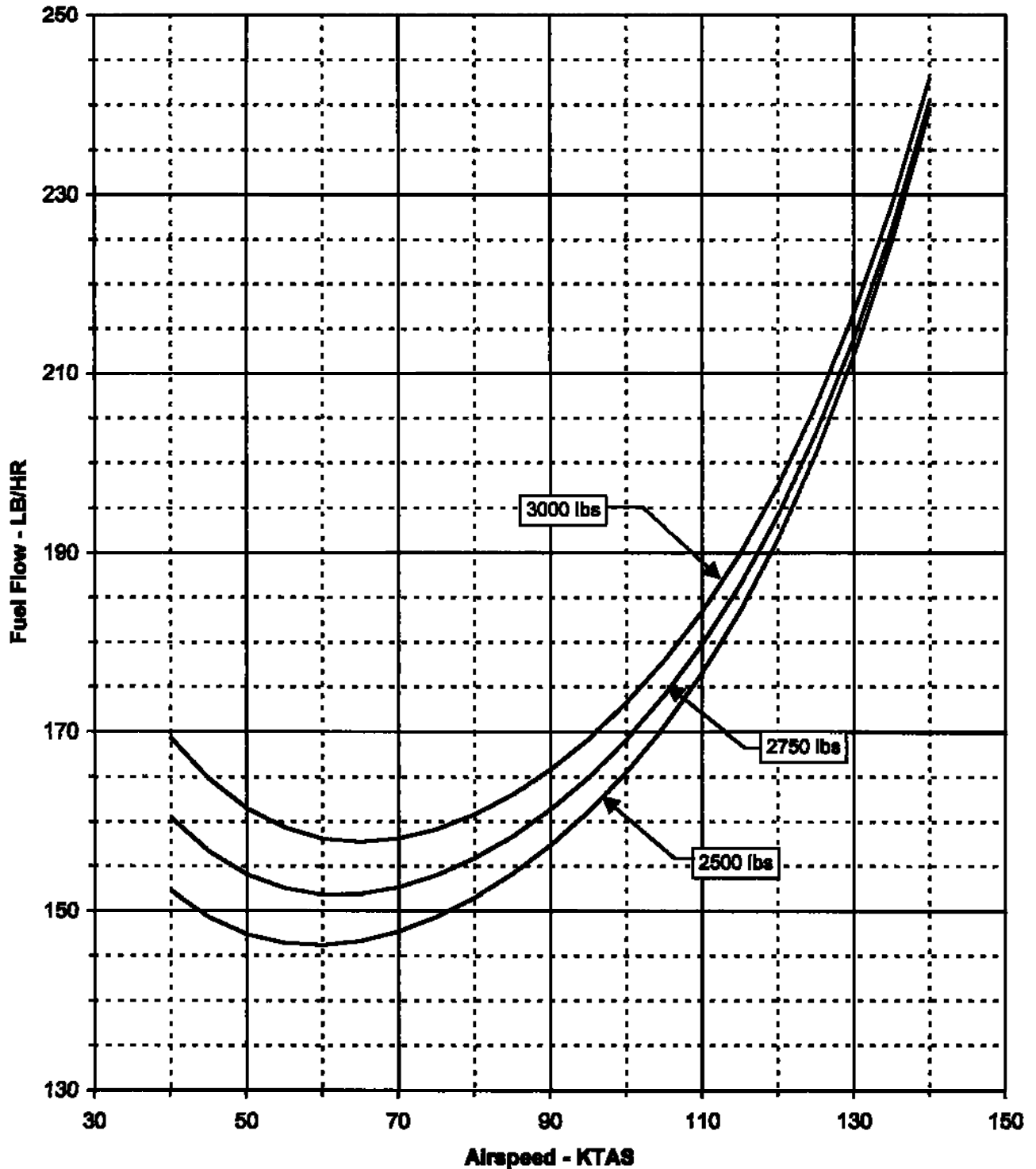


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3.20 Fuel Flow, Sea Level, ISA +20°C (35°C) (C20R Engine)

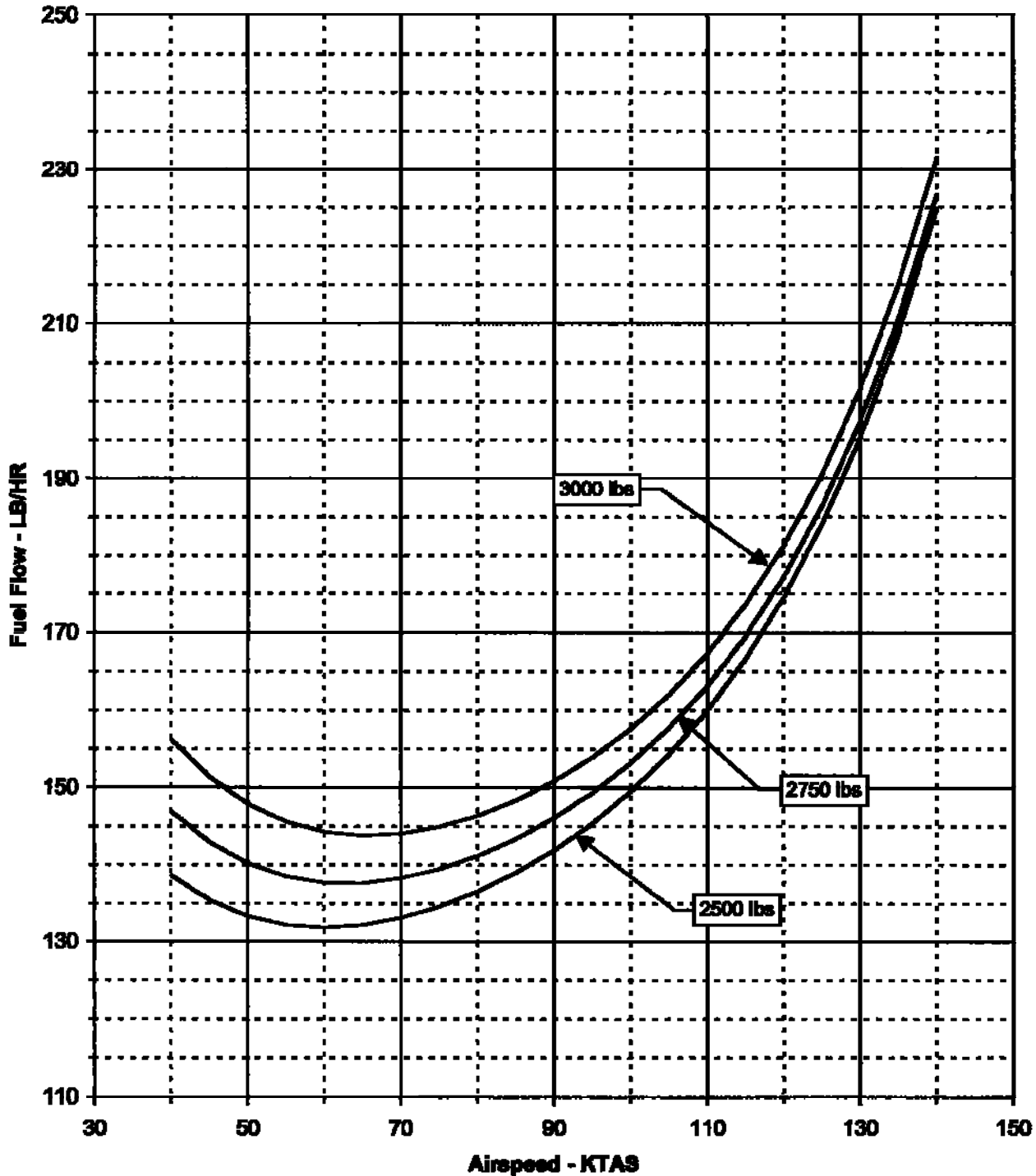


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3.21 Fuel Flow, 4,000 feet, ISA (7°C) (C20R Engine)

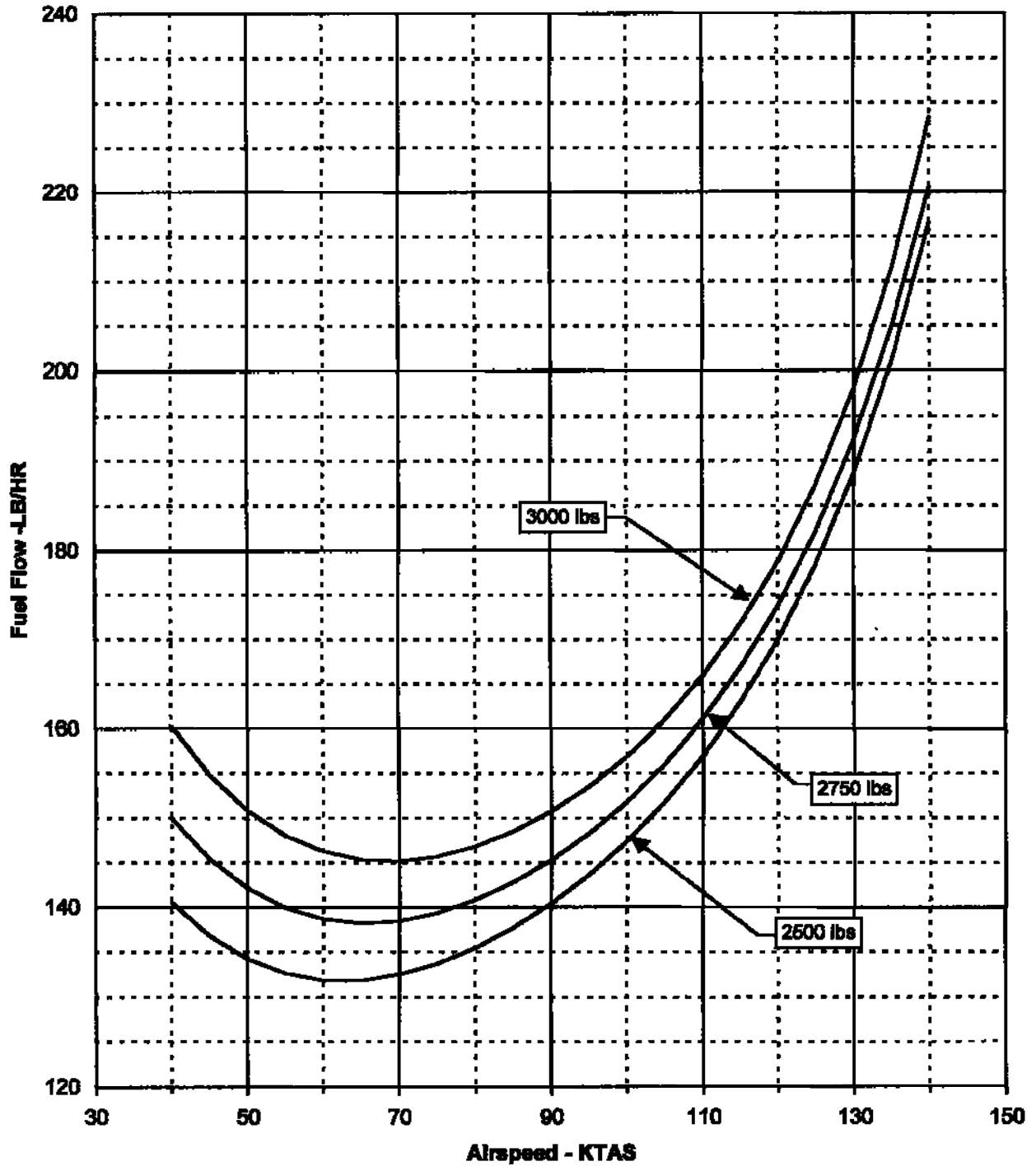


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3.22 Fuel Flow, 4,000 feet, ISA +20°C (27°C) (C20R Engine)



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