



The King Air 350

Extended Range

## Super King Air 350iER (Extended Range)





## Briefing Agenda

- EXTENDED RANGE “ER” Improvements to King Air 350i
- Benefits to Range & Endurance
- Weight & Payload Impact



**350iER Combines Range of \$15M Jets  
Payload & Field Performance of King Air**

## Super King Air 350iER Extended Range Nacelle Fuel Tanks



**FAA Certified  
10/26/2007**

- 4 Del 2007
- 9 Del 2008
- 34 Del 2009
- 24 Del 2010
- 19 Del 2011

**Delivered 90 FAA Certified 350ER/350CERs**

# 350iER - Range Profiles

## RANGE PROFILE - FULL MAIN, AUX, AND ER TANKS

**ASSOCIATED CONDITIONS:**

WEIGHT..... 16,600 LB BEFORE ENGINE START  
 FUEL..... AVIATION KEROSENE  
 FUEL DENSITY..... 6.7 LB/GAL  
 ENGINE ANTI-ICE..... OFF

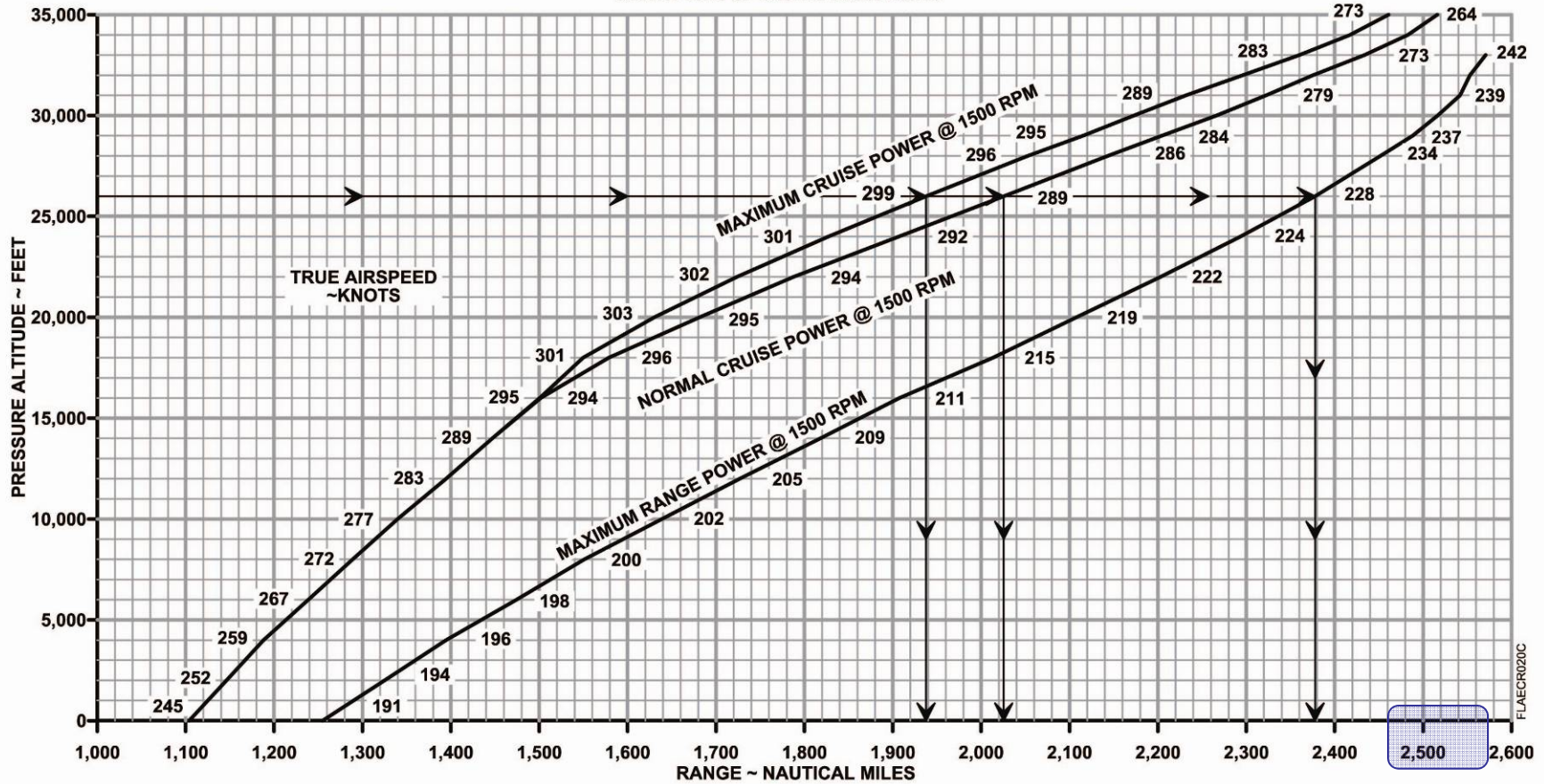
**5192 LBS FUEL**

STANDARD DAY (ISA)  
 ZERO WIND

**EXAMPLE:**

PRESSURE ALTITUDE..... 26,000 FT  
 RANGE @:  
 MAXIMUM CRUISE POWER..... 1,938 NM  
 NORMAL CRUISE POWER..... 2,025 NM  
 MAXIMUM RANGE POWER..... 2,378 NM

NOTE: RANGE SHOWN ALLOWS FOR START, TAXI, AND RUN-UP; INCLUDES CRUISE CLIMB AND DESCENT; AND ALLOWS FOR 45 MINUTES RESERVE FUEL AT MAXIMUM RANGE POWER.



Depending On Power, Altitude and Reserves: Max Range Can Exceed 2,500 nm



# 350iER - Endurance Profiles

## ENDURANCE PROFILE- FULL MAIN, AUX, AND ER TANKS

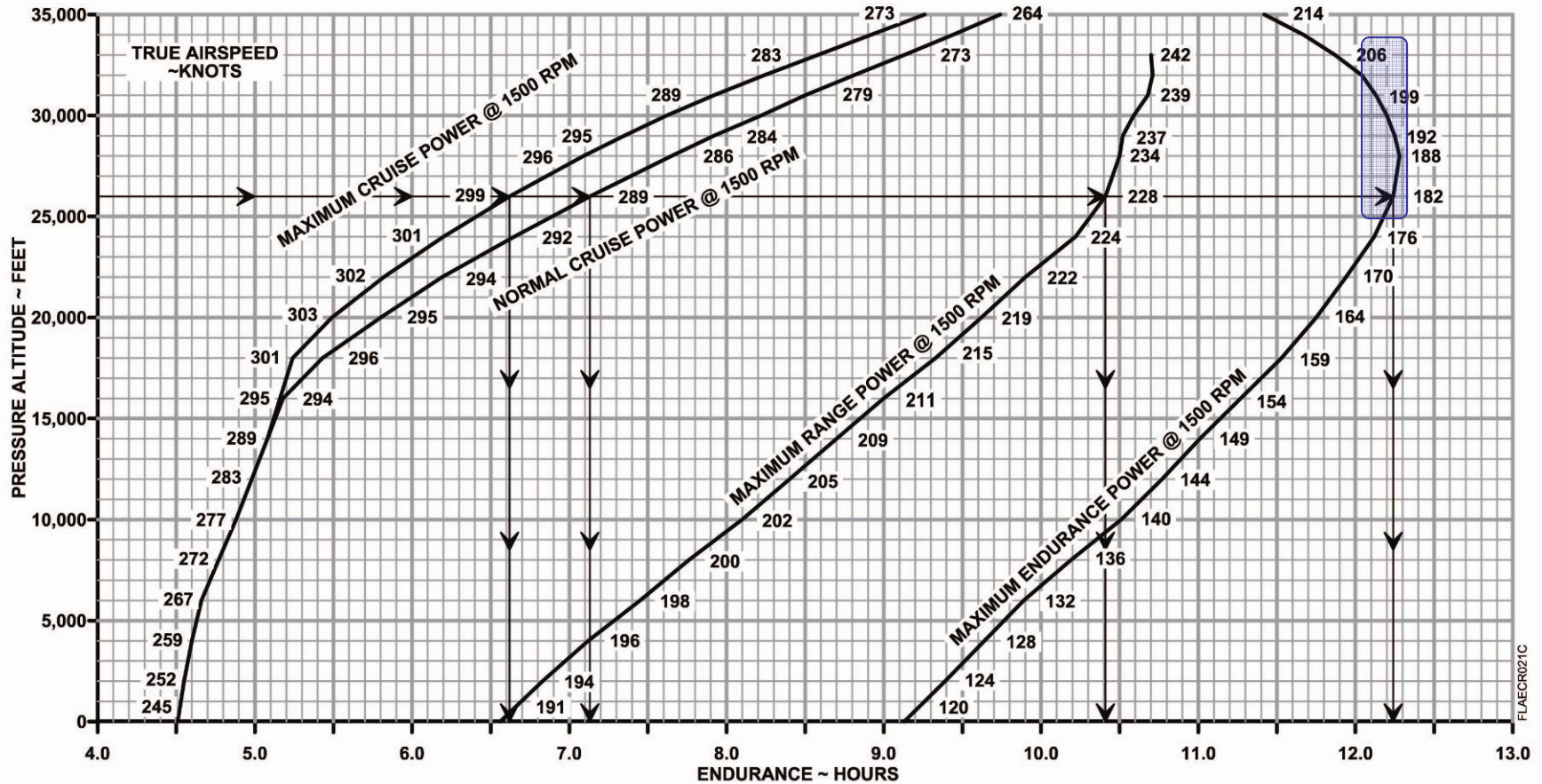
ASSOCIATED CONDITIONS:  
 WEIGHT..... 16,600 LB BEFORE ENGINE START  
 FUEL..... AVIATION KEROSENE  
 FUEL DENSITY..... 6.7 LB/GAL  
 ENGINE ANTI-ICE..... OFF

**5192 LBS FUEL**

STANDARD DAY (ISA)  
 ZERO WIND

EXAMPLE:  
 PRESSURE ALTITUDE..... 26,000 FT  
 ENDURANCE @:  
 MAXIMUM CRUISE POWER..... 6.62 HRS  
 NORMAL CRUISE POWER..... 7.13 HRS  
 MAXIMUM RANGE POWER..... 10.41 HRS  
 MAXIMUM ENDURANCE POWER.. 12.24 HRS

NOTE: RANGE SHOWN ALLOWS FOR START, TAXI, AND RUN-UP; INCLUDES CRUISE CLIMB AND DESCENT; AND ALLOWS FOR 45 MINUTES RESERVE FUEL AT MAXIMUM RANGE POWER.



Depending On Power, Altitude and Reserves: Max Endurance Can Exceed 12 Hours

## 350iER Weight Changes

### Remove:

- Wing Lockers -109

### Add:

- Extended Range Fuel Tanks 282
- Unusable Fuel - Drainable 6
- Unusable Fuel - Undrainable 2
- HW350 Main Landing Gear (delta weight) 90
- High Flotation Gear Doors (delta weight) 2
- Special Mission Rudder 4

Total Removed / Added Equipment 277



## Overall Weight Comparison

	<u>King Air 350i</u>	<u>King Air 350iER</u>	<u>Change</u>
<b><u>Design Weights</u></b>			
Max. Ramp Weight	15,100 lb.	16,600 lb.	1,500
Max. Takeoff Weight	15,000 lb.	16,500 lb.	1,500
Max. Landing Weight	15,000 lb.	15,675 lb.	675
Max. Zero Fuel Weight	12,500 lb.	13,000 lb.	500
Fuel Capacity	3,611 lb.	5,192 lb.	1,581
<b><u>Weight Breakdown</u></b>			
Basic Empty Weight *	9,720 lb.	9,997 lb.	277
1 pilot	200 lb.	200 lb.	
Basic Operating Weight	9,920 lb.	10,197 lb.	277
<b><u>Payloads</u></b>			
Max. Payload	2,580 lb.	2,803 lb.	223
Useful Load	5,180 lb.	6,403 lb.	1,223
Payload with 3,611 lbs. of Fuel	1,569 lb.	2,792 lb.	1,223
Payload with 5,192 lbs. of Fuel	n/a	1,211 lb.	

\* Basic Empty Weight includes 350i interior, nacelle wing lockers (350i) nacelle fuel tanks (350iER), Collins ProLine 21 Avionics

## Overall Weight VIP Interior vs. Slick Interior

	<u>VIP "I" Interior</u>	<u>Slick Interior</u>	<u>Change</u>
<b><u>Design Weights</u></b>			
Max. Ramp Weight	16,600 lbs.	16,600 lbs.	
Max. Takeoff Weight	16,500 lbs.	16,500 lbs.	
Max. Landing Weight	15,675 lbs.	15,675 lbs.	
Max. Zero Fuel Weight	13,000 lbs.	13,000 lbs.	
Fuel Capacity	5,192 lbs.	5,192 lbs.	
<b><u>Weight Breakdown</u></b>			
Basic Empty Weight *	9,997 lbs.	9,260 lbs.	-737 lbs.
1 pilot	200 lbs.	200 lbs.	
Basic Operating Weight	10,197 lbs.	9,460 lbs.	-737 lbs.
<b><u>Payloads</u></b>			
Max. Payload	2,803 lbs.	3,540 lbs.	+737 lbs.
Useful Load	6,403 lbs.	7,140 lbs.	+737 lbs.
Payload with 3,611 lbs. of Fuel	2,792 lbs.	3,529 lbs.	+737 lbs.
Payload with 5,192 lbs. of Fuel	1,211 lbs.	1,948 lbs.	+737 lbs.

\* Basic Empty Weight includes interior, nacelle fuel tanks, Collins ProLine 21 Avionics

# Airport Performance

	<u>King Air 350i</u>	<u>King Air 350iER</u>
<b><u>Takeoff Field Length</u></b>		
Max. TO Wt., SL, ISA.	(15,000 lb.) 3,300 ft.	(16,500 lb.) 4,473 ft.
Max. Wt., 5,000 ft. elevation, 25°C	(15,000 lb.) 5,376 ft.	(15,830 lb.) 7,588 ft.
<b><u>Landing Distance</u></b>		
Max	109 kts	107 kts
<b><u>Climb Performance (MGTOW)</u></b>		
	(15,000 lb.)	(16,500 lb.)
Time to Climb / 15,000 ft Altitude	15 min	18 min
All-engine Climb Rate, flaps up	2,731 fpm	2,400 fpm
All-engine Climb Gradient, flaps up	917 ft./nm	729 ft./nm
Engine-out Rate, T/O flaps	552 fpm	337 fpm
Engine-out Gradient, T/O flaps	304 ft/nm	182 ft/nm



# Cruise Performance & Ceilings

<b>Cruise Performance</b>	<b><u>King Air 350i</u></b>	<b><u>King Air 350iER</u></b>
<b><u>High Speed Cruise</u></b>		
Speed	312 kt/359 mph	303 kt/349 mph
Fuel Flow	773 lb./hr.	764 lb./hr.
Altitude	FL 240	FL 240
<b><u>Long Range Cruise</u></b>		
Speed	237 kt/273 mph	238 kt/274 mph
Fuel Flow	362 lb./hr.	402 lb./hr.
Altitude	FL 330	FL 330
<b><u>Ceilings</u></b>		
Certified	35,000 ft.	35,000 ft.
All Engine Service	35,000 ft.	33,000 ft.
Engine-out Service	21,500 ft.	17,100 ft.

## Speed Limitations, KIAS

	<b><u>350</u></b>	<b><u>350ER</u></b>
• <b><math>V_A</math>, Maneuvering Speed</b>	184	182
• <b><math>V_{LO}</math>, Maximum Landing Gear Operating Speed</b>		
➤ Extension	184	182
➤ Retraction	166	164
• <b><math>V_{LE}</math>, Maximum Landing Gear Extension Speed</b>	184	182
• <b><math>V_{MCA}</math>, Air Minimum Control Speed, Propeller Feathered</b>		
➤ Flaps Up	94	101
➤ Flaps Approach	93	98
• <b><math>V_{MO}</math>, Maximum Operating Speed</b>		
➤ Sea Level to 24,000 Feet	263	245
➤ 24,000 Feet to 35,000 Feet	263-194*	245-192*

\* 0.58 Mach

## Summary

- Deploy World-Wide without Ferry Tanks
- 350iER goes distance of mid-size Jet
  - Half the acquisition cost of a turbofan
  - 1/3 Less fuel than turbofan
- Increased Payload

