

# A320

# AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

# **AC**

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# **HIGHLIGHTS**

# Revision No. 26 - May 01/11

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
CHAPTER 2		
Section 2-1		
Subject 2-1-1		
General Airplane Characteristics Data	R	
Section 2-2		
Subject 2-2-0		
FIGURE General Airplane Dimensions - General Airplane Dimensions	R	ILLUSTRATION REVISED
FIGURE General Airplane Dimensions - General Airplane Dimensions	R	ILLUSTRATION REVISED ILLUSTRATION REVISED
Section 2-3		
Subject 2-3-0		
Ground Clearances	R	NOTE AMENDED
FIGURE Ground Clearances - Ground Clearances	R	ILLUSTRATION REVISED AND COMPLETED
FIGURE Ground Clearances - Ground Clearances	R	ILLUSTRATION REVISED AND COMPLETED
CHAPTER 4	R	
Section 4-5	R	
Subject 04-05-03	D	
Subject 04-05-04	D	
Subject 04-05-06	D	
Section 04-07	D	
CHAPTER 7		
Section 7-1		
Subject 7-1-0		
General Information	R	PART EFFECTIVITY ADDED/REVISED/DELETED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Aircraft Codes - Aircraft Codes Section 7-2	N	NEW ILLUSTRATION ADDED ILLUSTRATION ADDED
Subject 7-2-0		
Landing Gear Footprint	R	NOTE AMENDED CROSS REFERENCED DOCUMENTARY UNIT ADDED/REVISED/DELETED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	N	NEW ILLUSTRATION ADDED ILLUSTRATION ADDED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
FIGURE Landing Gear Footprint - Landing Gear Footprint	R	ILLUSTRATION REVISED
Section 7-3		
Subject 7-3-0		

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
Maximum Pavement Loads	R	NOTE AMENDED CROSS REFERENCED DOCUMENTARY UNIT ADDED/REVISED/DELETED
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	ILLUSTRATION REVISED
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	ILLUSTRATION REVISED
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	N	NEW ILLUSTRATION ADDED ILLUSTRATION ADDED
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	ILLUSTRATION REVISED
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	ILLUSTRATION REVISED
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	ILLUSTRATION REVISED
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	ILLUSTRATION REVISED
Section 7-4		
Subject 7-4-0		
Landing Gear Loading on Pavement	R	PART EFFECTIVITY ADDED/REVISED/DELETED
Subject 7-4-1		
Landing Gear Loading on Pavement	R	NOTE AMENDED CROSS REFERENCED DOCUMENTARY UNIT ADDED/REVISED/DELETED
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	
Section 7-5		
Subject 7-5-0		
Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method	R	
Subject 7-5-1		
Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method	R	NOTE AMENDED CROSS REFERENCED DOCUMENTARY UNIT ADDED/REVISED/DELETED
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
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FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
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FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
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FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	ILLUSTRATION ADDED
Section 7-6		
Subject 7-6-0		
Flexible Pavement Requirements - LCN Conversion	R	
Subject 7-6-1		
Flexible Pavement Requirements - LCN Conversion	R	NOTE AMENDED CROSS REFERENCED DOCUMENTARY UNIT ADDED/REVISED/DELETED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
Section 7-7		
Subject 7-7-0		
Rigid Pavement Requirements - Portland Cement Association Design Method	R	
Subject 7-7-1		
Rigid Pavement Requirements - Portland Cement Association Design Method	R	NOTE AMENDED CROSS REFERENCED DOCUMENTARY UNIT ADDED/REVISED/DELETED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	ILLUSTRATION ADDED
Section 7-8		
Subject 7-8-0		
Rigid Pavement Requirements - LCN Conversion	R	
Subject 7-8-2	_	
Rigid Pavement Requirements - LCN Conversion	R	NOTE AMENDED CROSS REFERENCED DOCUMENTARY UNIT ADDED/REVISED/DELETED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED

LOCATIONS	CHG CODE	DESCRIPTIONS OF CHANGE
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
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FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	ILLUSTRATION ADDED

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FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	May 01/11
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	May 01/11
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	N	May 01/11
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	May 01/11
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	May 01/11
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	May 01/11
FIGURE Maximum Pavement Loads - Maximum Pavement Loads	R	May 01/11
Subject 7-4-0		
Landing Gear Loading on Pavement	R	May 01/11
Subject 7-4-1		
Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11

CONTENT	CHG CODE	LAST REVISION DATE
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
FIGURE Landing Gear Loading on Pavement - Landing Gear Loading on Pavement	R	May 01/11
Subject 7-5-0		
Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method	R	May 01/11
Subject 7-5-1		
Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method	R	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11

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FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirement - Flexible Pavement Requirements	N	May 01/11
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FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11

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FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
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FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11

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FIGURE Flexible Pavement Requirements - Flexible Pavement Requirements	N	May 01/11
Subject 7-6-0		
Flexible Pavement Requirements - LCN Conversion	R	May 01/11
Subject 7-6-1		
Flexible Pavement Requirements - LCN Conversion	R	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11

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FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11

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FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Flexible Pavement Requirements - LCN Conversion - Flexible Pavement Requirements - LCN Conversion	N	May 01/11
Subject 7-7-0		
Rigid Pavement Requirements - Portland Cement Association Design Method	R	May 01/11
Subject 7-7-1		
Rigid Pavement Requirements - Portland Cement Association Design Method	R	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11

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FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11

CONTENT	CHG CODE	LAST REVISION DATE
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11

CONTENT	CHG CODE	LAST REVISION DATE
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
FIGURE Rigid Pavement Requirements (PCA) - Rigid Pavement Requirements (PCA)	N	May 01/11
Subject 7-8-0		
Rigid Pavement Requirements - LCN Conversion	R	May 01/11
Subject 7-8-1		
Radius of Relative Stiffness		Dec 01/07
FIGURE Radius of Relative Stiffness - (Reference: Portland Cement Association)		Dec 01/07
Subject 7-8-2		
Rigid Pavement Requirements - LCN Conversion	R	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11

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FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11

# **GA320**

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FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11

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FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
FIGURE Rigid Pavement Requirements - LCN Conversion - Rigid Pavement Requirements - LCN Conversion	N	May 01/11
Subject 7-8-3		
Radius of Relative Stiffness (Other values of "E" and "L")		May 01/11
Subject 7-8-4		
Radius of Relative Stiffness		Dec 01/07
FIGURE Radius of Relative Stiffness - (Effect E and $\mu$ on "L" values)		May 01/11
Subject 7-9-0		
ACN/PCN Reporting System		May 01/11
Subject 7-9-1		
Aircraft Classification Number - Flexible Pavement	R	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement		May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11

CONTENT	CHG CODE	LAST REVISION DATE
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11

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FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11

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FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement	N	May 01/11
FIGURE Aircraft Classification Number – Flexible Pavement - Aircraft Classification Number – Flexible Pavement Subject 7-9-2	N	May 01/11
Aircraft Classification Number - Rigid Pavement	R	May 01/11
FIGURE Aircraft Classification Number – Rigid Pavement - Aircraft Classification Number – Rigid Pavement	N	May 01/11
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### **SCOPE**

### 1-1-0 Purpose

\*\*ON A/C A320-100 A320-200

### <u>Purpose</u>

## 1. General

The A320 AIRPLANE CHARACTERISTICS (AC) manual is issued for the A320-100 and A320-200 basic versions to provide the necessary data needed by airport operators and airlines for the planning of airport facilities.

This document conforms to NAS 3601.

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#### 1-2-0 Introduction

### \*\*ON A/C A320-100 A320-200

#### Introduction

#### 1. General

This manual comprises 9 chapters with a List of Effective Pages (LEP) at the beginning of the manual and a Table Of Content (TOC) at the beginning of each chapter.

Chapter 1: SCOPE

Chapter 2: AIRPLANE DESCRIPTION

This chapter contains general dimensional and other basic aircraft data.

#### It covers:

- aircraft dimensions and ground clearances,
- passenger and cargo compartment arrangement.

#### Chapter 3: AIRPLANE PERFORMANCE

This chapter indicates the aircraft performance.

#### It covers:

- payload range,
- takeoff and landing runway requirements,
- landing approach speed.

#### Chapter 4: GROUND MANEUVERING

This chapter provides the aircraft turning capability and maneuvering characteristics on the ground.

#### It includes:

- turning radii and visibility from the cockpit,
- runway and taxiway turn path.

#### Chapter 5: TERMINAL SERVICING

This chapter provides information for the arrangement of ground handling and servicing equipments.

#### It covers:

- location and connections of ground servicing equipments,

- engine starting pneumatic and preconditioned airflow requirements.

### Chapter 6: OPERATING CONDITIONS

This chapter contains data and safety/environmental precautions related to engine and APU operation on the ground.

#### It covers:

- contour size and shape of the jet engine exhaust velocities and temperature,
- noise data.

## Chapter 7: PAVEMENT DATA

This chapter contains the pavement data helpful for airport planning.

#### It gives:

- landing gear foot print and static load,
- charts for flexible pavements with Load Classification Number (LCN),
- charts for rigid pavements with LCN,
- Aircraft Classification Number (ACN), Pavement Classification Number (PCN), reporting system for flexible and rigid pavements.

### Chapter 8: DERIVATIVE AIRPLANES

This chapter gives relevant data of possible A320 new version with the associated size change.

#### Chapter 9: SCALED DRAWING

This chapter contains different A320 scaled drawings.

#### **AIRPLANE DESCRIPTION**

### 2-1-0 General Airplane Characteristics

## \*\*ON A/C A320-100 A320-200

### General Airplane Characteristics

1. General Airplane Characteristics

The weight terms used throughout this manual are given below together with their respective definitions

Maximum Taxi Weight (MTW):

Maximum weight for ground maneuver as limited by aircraft strength and airworthiness requirements. (It includes weight of run-up and taxi fuel). It is also called Maximum Ramp Weight (MRW).

Maximum Landing Weight (MLW):

Maximum weight for landing as limited by aircraft strength and airworthiness requirements.

Maximum Takeoff Weight (MTOW):

Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the takeoff run).

Maximum Zero Fuel Weight (MZFW):

Maximum operational weight of the aircraft without usable fuel.

Operational Empty Weight (OEW):

Weight of structure, powerplant, furnishings, systems, and other items of equipment that are an integral part of a particular aircraft configuration plus the operator's items. The operator's items are the flight and cabin crew and their baggage, unusable fuel, engine oil, emergency equipment, toilet chemical and fluids, galley structure, catering equipment, passenger seats and life vests, documents, etc.

Maximum Payload:

Maximum Zero Fuel Weight (MZFW) minus Operational Empty Weight (OEW).

Maximum Seating Capacity:

Maximum number of passengers specifically certified or anticipated for certification.

Maximum Cargo Volume:

Maximum usable volume available for cargo.

Usable Fuel:

Fuel available for aircraft propulsion.

## 2-1-1 General Airplane Characteristics Data

## \*\*ON A/C A320-100 A320-200

General Airplane Characteristics Data

### \*\*ON A/C A320-100

1. The following table provides characteristics of A320-100 Models, these data are specific to each Weight Variant:

	Aircraft Charac	cteristics		
		WV000	WV001	WV002
Maximum Ramp Weight (MRW)	Kilograms	68 400	66 400	68 400
Maximum Taxi Weight (MTW)	Pounds	150 796	146 387	150 796
Maximum Takeoff Weight	Kilograms	68 000	66 000	68 000
(MTOW)	Pounds	149 914	145 505	149 914
Maximum Landing Weight	Kilograms	63 000	63 000	63 000
(MLW)	Pounds	138 891	138 891	138 891
Maximum Zero Fuel Weight	Kilograms	59 000	59 000	59 800
(MZFW)	Pounds	130 073	130 073	131 836
Estimated Operational Empty Weight (OEW)	CFM Engines	41 244 kg (90 927 lb)		b)
Estimated Maximum Payload	Kilograms	17	756	18 556
CFM 56	Pounds	39	145	40 909

## \*\*ON A/C A320-200

2. The following table provides characteristics of A320-200 Models, these data are specific to each Weight Variant:

	Aircraft Characteristics					
		WV000	WV001	WV002	WV003	WV004
Maximum Ramp Weight	Kilograms	73 900	68 400	70 400	75 900	71 900
(MRW) Maximum Taxi Weight (MTW)	Pounds	162 922	150 796	155 205	167 331	158 512
Maximum Takeoff	Kilograms	73 500	68 000	70 000	75 500	71 500
Weight (MTOW)	Pounds	162 040	149 914	154 324	166 449	157 630
Maximum Landing Weight (MLW)	Kilograms	64 500	64 500	64 500	64 500	64 500
	Pounds	142 198	142 198	142 198	142 198	142 198
Maximum Zero Fuel	Kilograms	60 500	60 500	60 500	60 500	60 500
Weight (MZFW)	Pounds	133 380	133 380	133 380	133 380	133 380

Aircraft Characteristics							
	WV000	WV001	WV002	WV003	WV004		
Estimated Operational Empty Weight (OEW)	CFM Engines	41 244 kg (90 927 lb)					
	IAE Engines	41 345 kg (91 150 lb)					
Estimated Maximum	Kilograms	19 256					
Payload CFM 56	Pounds	42 453					
Estimated Maximum	Kilograms	19 155					
Payload IAE V2500	Pounds	42 230					

	P	Aircraft Chara	cteristics			
		WV005	WV006	WV007	WV008	WV009
Maximum Ramp Weight (MRW) Maximum Taxi Weight (MTW)	Kilograms	67 400	66 400	77 400	73 900	75 900
	Pounds	148 592	146 387	170 638	162 922	167 331
Maximum Takeoff	Kilograms	67 000	66 000	77 000	73 500	75 500
Weight (MTOW)	Pounds	147 710	145 505	169 756	162 040	166 449
Maximum Landing	Kilograms	64 500	64 500	64 500	64 500	64 500
Weight (MLW)	Pounds	142 198	142 198	142 198	142 198	142 198
Maximum Zero Fuel	Kilograms	60 500	60 500	60 500	61 000	61 000
Weight (MZFW)	Pounds	133 380	133 380	133 380	134 482	134 482
Estimated Operational	CFM Engines		41 24	14 kg (90 92	7 lb)	
Empty Weight (OEW)	IAE Engines	41 345 kg (91 150 lb)				
Estimated Maximum	Kilograms		19 256		19	756
Payload CFM 56	Pounds	42 453		43	555	
Estimated Maximum	Kilograms		19 155		19 655	
Payload IAE V2500	Pounds		42 230		43	332

Aircraft Characteristics						
		WV010	WV011	WV012	WV013	WV014
Maximum Ramp Weight	Kilograms	77 400	75 900	77 400	71 900	73 900
(MRW) Maximum Taxi Weight (MTW)	Pounds	170 638	167 331	170 638	158 512	162 922
Maximum Takeoff	Kilograms	77 000	75 500	77 000	71 500	73 500
Weight (MTOW)	Pounds	169 756	166 449	169 756	157 630	162 040
<u> </u>	Kilograms	64 500	66 000	66 000	64 500	64 500
Weight (MLW)	Pounds	142 198	145 505	145 505	142 198	142 198

Aircraft Characteristics							
	WV010	WV011	WV012	WV013	WV014		
Maximum Zero Fuel	Kilograms	61 000	62 500	62 500	61 000	61 500	
Weight (MZFW)	Pounds	134 482	137 789	137 789	134 482	135 584	
Estimated Operational Empty Weight (OEW)	CFM Engines	41 244 kg (90 927 lb)					
	IAE Engines	41 345 kg (91 150 lb)					
Estimated Maximum Payload CFM 56	Kilograms	19 756	21 2	256	19 756	20 256	
	Pounds	43 555	46 8	361	43 555	44 657	
Estimated Maximum	Kilograms	19 655	21	155	19 655	20 155	
Payload IAE V2500	Pounds	43 332	46 (	539	43 332	44 434	

	Aircraft Characteristics		
		WV015	WV016
Maximum Ramp Weight (MRW)	Kilograms	78 400	73 900
Maximum Taxi Weight (MTW)	Pounds	172 842	162 922
Maximum Takeoff Weight (MTOW)	Kilograms	78 000	73 500
	Pounds	171 961	162 040
Maximum Landing Weight (MLW)	Kilograms	64 500	66 000
	Pounds	142 198	145 505
Maximum Zero Fuel Weight (MZFW)	Kilograms	61 000	62 500
	Pounds	134 482	137 789
Estimated Operational Empty Weight	CFM Engines	41 244 kg (90 927 lb)	
(OEW)	IAE Engines	41 345 kg	(91 150 lb)
Estimated Maximum Payload CFM 56	Kilograms	19 756	21 256
	Pounds	43 555	46 861
Estimated Maximum Payload IAE	Kilograms	19 655	21 155
V2500	Pounds	43 332	46 639

# \*\*ON A/C A320-100

3. The following table provides characteristics of A320-100 Models, these data are common to each Weight Variant:

Aircraft Characteristics					
Standard Seating Capacity	Single-class	180			
Usable Fuel Capacity	Liters	23 667			
	US gallons	6 252			
	Kilograms (density $= 0.785 \text{ kg/I}$ )	18 578			
	Pounds	40 957			

	Aircraft Characteristics				
Pressurized Fuselage Volume	Cubic meters	330			
(A/C non equipped)	Cubic feet	11 654			
Passenger Compartment Volume	Cubic meters	139			
	Cubic feet	4 909			
Cockpit Volume	Cubic meters	9			
	Cubic feet	318			
Usable Bulk, FWD CC	Cubic meters	13.28			
	Cubic feet	469			
Usable Bulk, AFT CC	Cubic meters	18.26			
	Cubic feet	645			
Usable Bulk, Bulk CC	Cubic meters	5.88			
	Cubic feet	208			
Water Volume, FWD CC	Cubic meters	15.56			
	Cubic feet	549.5			
Water Volume, AFT CC	Cubic meters	20.77			
	Cubic feet	733.5			
Water Volume, Bulk CC	Cubic meters	7.76			
	Cubic feet	274			

# \*\*ON A/C A320-200

4. The following table provides characteristics of A320-200 Models, these data are common to each Weight Variant:

	Aircraft Characteristics					
Standard Seating Capacity	Single-class	180				
Usable Fuel Capacity	Liters	23 859 - 26 759* - 29 659**				
	US gallons	6 303 - 7 069* - 7 835**				
	Kilograms (density = 0.785 kg/l)	18 729 - 21 005* - 23 282**				
	Pounds	41 290 - 46 308* - 51 328**				
Pressurized Fuselage Volume	Cubic meters	330				
(A/C non equipped)	Cubic feet	11 654				
Passenger Compartment Volume	Cubic meters	139				
	Cubic feet	4 909				
Cockpit Volume	Cubic meters	9				
	Cubic feet	318				
Usable Volume, FWD CC	Cubic meters	13.28				
	Cubic feet	469				



	Aircraft Characterist	ics	
Usable Volume, AFT CC	Cubic meters	18.26	
	Cubic feet	645	
Usable Volume, Bulk CC	Cubic meters	5.88	
	Cubic meters	208	
Water Volume, FWD CC	Cubic meters	15.56	
	Cubic feet	549.5	
Water Volume, AFT CC	Cubic meters	20.77	
	Cubic feet	733.5	
Water Volume, Bulk CC	Cubic meters	7.76	
	Cubic feet	274	

\* OPTION: 1 ACT \*\* OPTION: 2 ACT

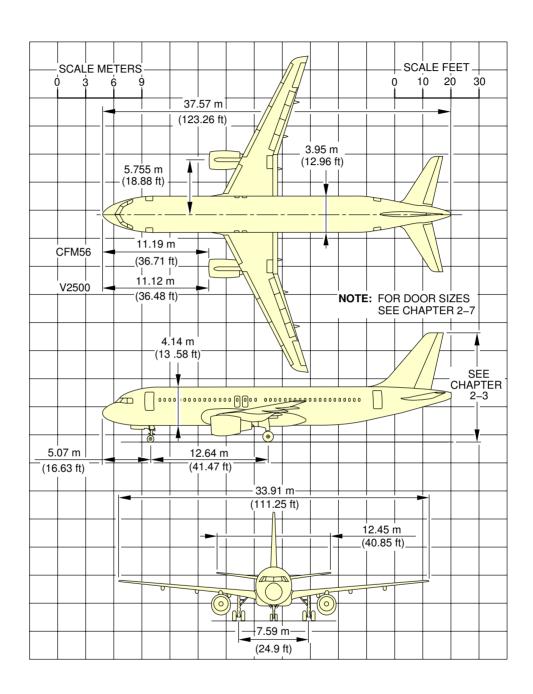
## 2-2-0 General Airplane Dimensions

\*\*ON A/C A320-100 A320-200

## **General Airplane Dimensions**

1. This section provides General Airplane Dimensions.

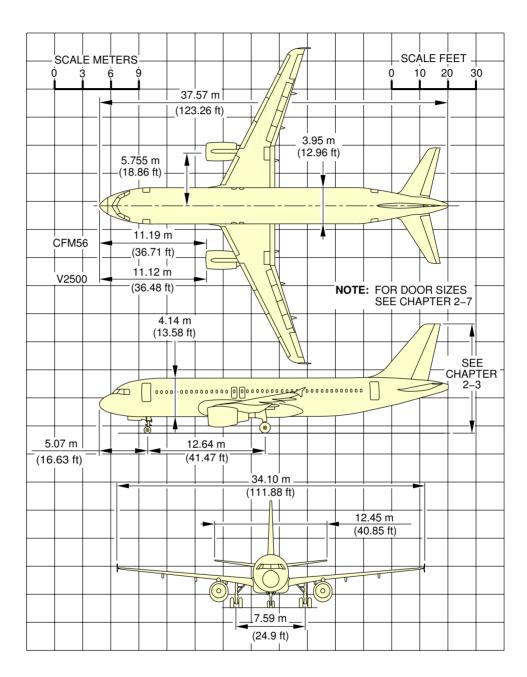
## \*\*ON A/C A320-100



N\_AC\_020200\_1\_0030101\_01\_02

General Airplane Dimensions FIGURE 1

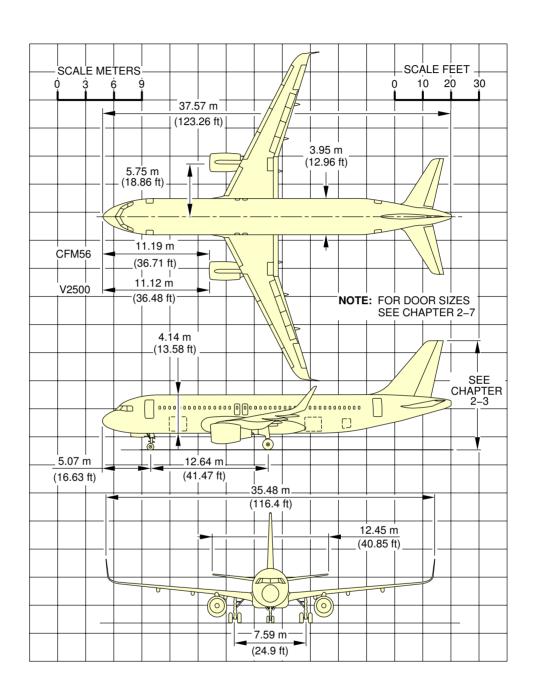
## \*\*ON A/C A320-200



N\_AC\_020200\_1\_0040101\_01\_02

General Airplane Dimensions (Sheet 1 of 2) FIGURE 2

### \*\*ON A/C A320-200



N\_AC\_020200\_1\_0040103\_01\_00

General Airplane Dimensions Sharklet Option (Sheet 2 of 2) FIGURE 3

#### 2-3-0 Ground Clearances

### \*\*ON A/C A320-100 A320-200

### **Ground Clearances**

1. This section gives the height of various points of the aircraft, above the ground, for different aircraft configurations.

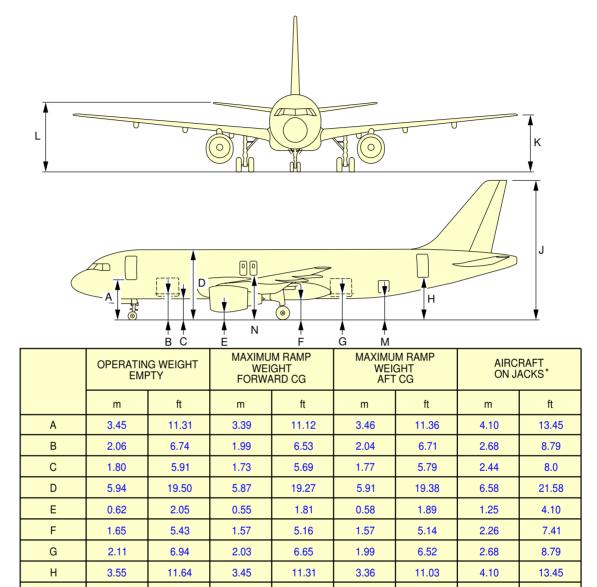
Dimensions in the tables are approximate and will vary with tire type, W&B and others special conditions.

The dimensions are given for:

- The basic aircraft OWE with a mid CG,
- the MRW for the lightest weight variant with a FWD CG and a AFT CG,
- the MRW for the heaviest weight variant with a FWD CG and a AFT CG,
- aircraft on jacks, FDL at 4.6m (15.09ft).

<u>NOTE</u>: Passenger and cargo door clearances are measured from the center of the door sill and from floor level.

### \*\*ON A/C A320-100



11.68 \* NOTE: PASSENGER AND CARGO DOOR GROUND CLEARANCES ARE MEASURED FROM THE CENTER OF THE DOOR SILL AND FROM FLOOR LEVEL N\_AC\_020300\_1\_0030101\_01\_02

38.72

13.49

17.18

7.23

11.68

4.08

5.11

2.14

3.55

38.31

13.39

16.76

7.02

11.64

12.45

4.80

5.93

2.90

40.84

15.74

19.45

9.50

14.69

**Ground Clearances** FIGURE 1

11.80

4.11

5.24

2.20

3.56

11.91

4.20

5.35

2.30

3.64

Κ

39.08

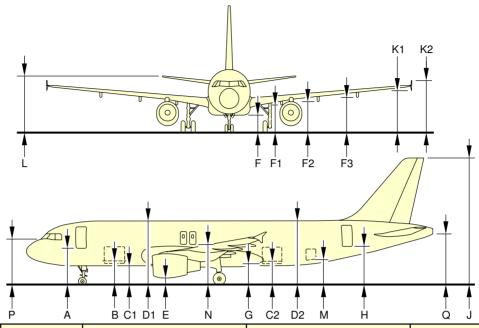
13.77

17.54

7.54

11.94

\*\*ON A/C A320-200



		VE 44 kg	MRW (WV0) 73 900 kg				MRW (WV8) 78 400 kg				AC JACKED FDL	
	CG 26.5%		FWD CG 17%		AFT CG 40%		FWD CG 17%		AFT CG 36.8%		= 4.60 m	
	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
Α	3.48	11.42	3.38	11.09	3.48	11.42	3.38	11.09	3.45	11.32	4.13	13.55
В	2.09	6.86	1.99	6.53	2.06	6.76	1.98	6.50	2.04	6.69	2.71	8.89
C1	1.82	5.97	1.73	5.68	1.79	5.87	1.72	5.64	1.76	5.77	2.43	7.97
C2	1.95	6.40	1.86	6.10	1.79	5.87	1.84	6.04	1.79	5.87	2.43	7.97
D1	5.97	19.59	5.87	19.26	5.93	19.46	5.86	19.23	5.90	19.36	6.58	21.59
D2	6.09	19.98	6.00	19.68	5.93	19.46	5.99	19.65	5.93	19.46	6.58	21.59
E (CFM)	0.67	2.20	0.58	1.90	0.59	1.94	0.57	1.87	0.58	1.90	1.24	4.07
E (IAE)	0.85	2.79	0.76	2.49	0.77	2.53	0.75	2.46	0.76	2.49	1.42	4.66
F	1.72	5.64	1.63	5.35	1.61	5.28	1.62	5.31	1.60	5.25	2.26	7.41
F1	2.72	8.92	2.63	8.63	2.60	8.53	2.61	8.56	2.60	8.53	3.25	10.66
F2	3.15	10.33	3.06	10.04	3.03	9.95	3.05	10.01	3.03	9.94	3.68	12.07
F3	3.49	11.45	3.40	11.15	3.36	11.02	3.39	11.12	3.36	11.02	4.01	13.16
G	2.22	7.28	2.13	6.99	2.07	6.79	2.12	6.96	2.07	6.79	2.71	8.89
Н	3.70	12.14	3.61	11.84	3.49	11.45	3.60	11.81	3.50	11.48	4.13	13.55
J	12.08	39.63	12.00	39.37	11.81	38.75	11.98	39.30	11.83	38.81	12.45	40.85
K1	3.89	12.76	3.80	12.47	3.74	12.27	3.78	12.40	3.74	12.27	4.38	14.37
K2	4.86	15.94	4.77	15.65	4.71	15.45	4.76	15.62	4.71	15.45	5.35	17.55
L	5.56	18.24	5.47	17.95	5.29	17.36	5.46	17.91	5.32	17.45	5.93	19.46
М	2.29	7.51	2.20	7.22	2.11	6.92	2.19	7.19	2.11	6.92	2.75	9.02
N	3.98	13.06	3.88	12.73	3.89	12.76	3.87	12.70	3.88	12.73	4.54	14.89
N1	3.97	13.02	3.87	12.70	3.89	12.76	3.86	12.66	3.87	12.70	4.54	14.89
Р	4.28	14.04	4.17	13.68	4.31	14.14	4.17	13.68	4.27	14.01	4.96	16.27
Q	4.84	15.88	4.76	15.62	4.56	14.96	4.74	15.55	4.59	15.06	5.20	17.06

NOTE: PASSENGER AND CARGO DOOR GROUND CLEARANCES ARE MEASURED FROM THE CENTER OF THE DOOR SILL AND FROM FLOOR LEVEL N\_AC\_020300\_1\_0040101\_01\_04

Ground Clearances FIGURE 2

## 2-4-0 Interior Arrangements

\*\*ON A/C A320-100 A320-200

## **Interior Arrangements**

1. This section gives the standard interior arrangements configuration.

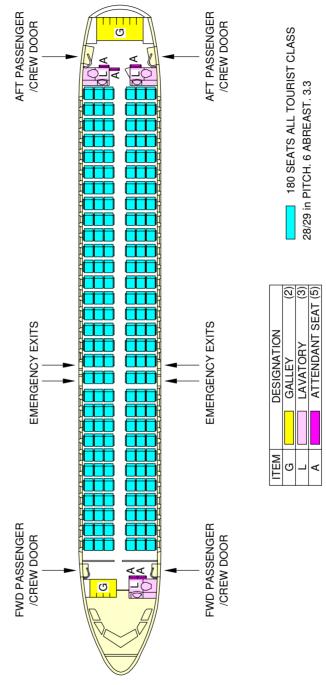
## 2-4-1 Passenger Compartment Layout

\*\*ON A/C A320-100 A320-200

# Typical Configuration

1. This section gives the typical interior configuration.

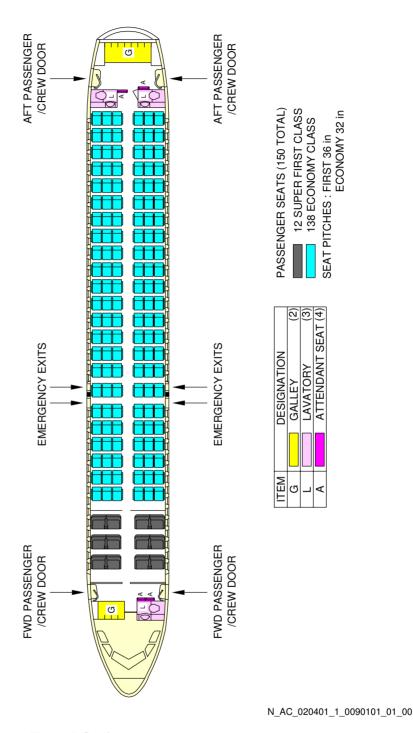
### \*\*ON A/C A320-100 A320-200



N\_AC\_020401\_1\_0030101\_01\_02

Typical Configuration
Typical Configuration Single-Class, High Density
FIGURE 1

### \*\*ON A/C A320-100 A320-200



Typical Configuration
Typical Configuration Two-Class
FIGURE 2

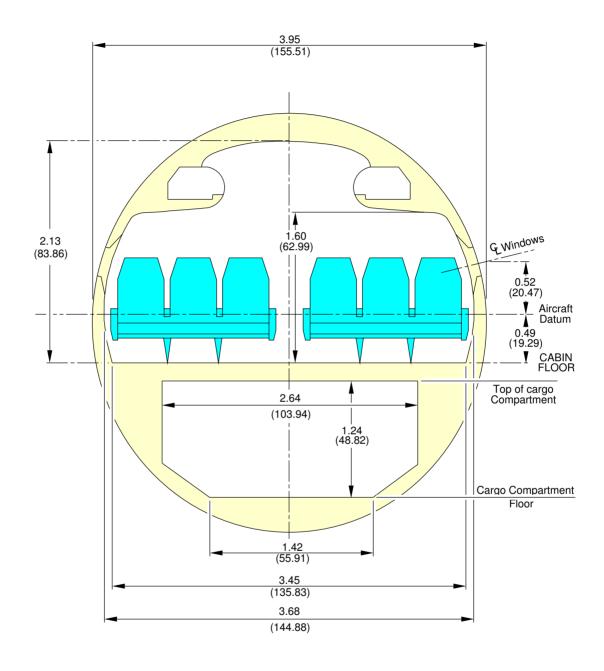
## 2-5-0 Passenger Compartment Cross Section

\*\*ON A/C A320-100 A320-200

## Passenger Compartment Cross-section

1. This section gives the typical passenger compartment cross-section configuration.

### \*\*ON A/C A320-100 A320-200

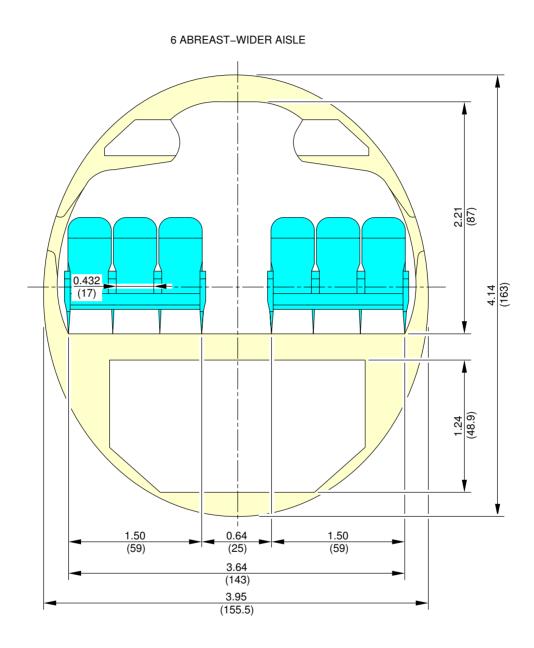


NOTE: DIMENSIONS m (in)

N\_AC\_020500\_1\_0010101\_01\_01

Passenger Compartment Cross-section FIGURE 1

### \*\*ON A/C A320-100 A320-200

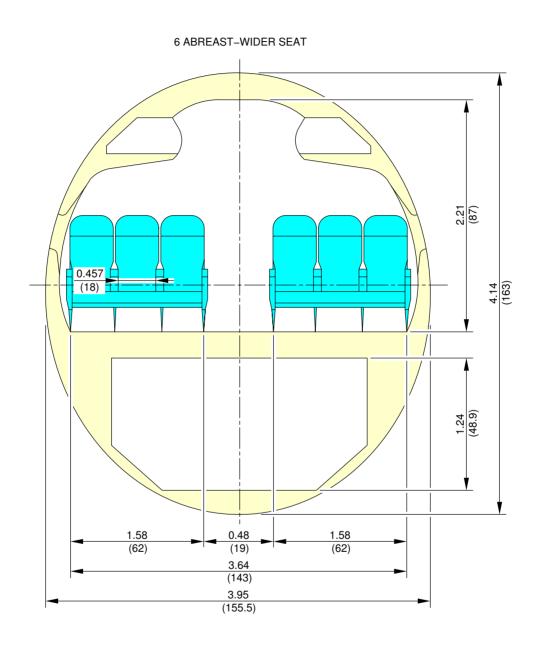


NOTE: DIMENSIONS m (in)

N\_AC\_020500\_1\_0050101\_01\_00

Passenger Compartment Cross-section Economy Class, 6 Abreast - Wider Aisle (Sheet 1 of 2) FIGURE 2

### \*\*ON A/C A320-100 A320-200

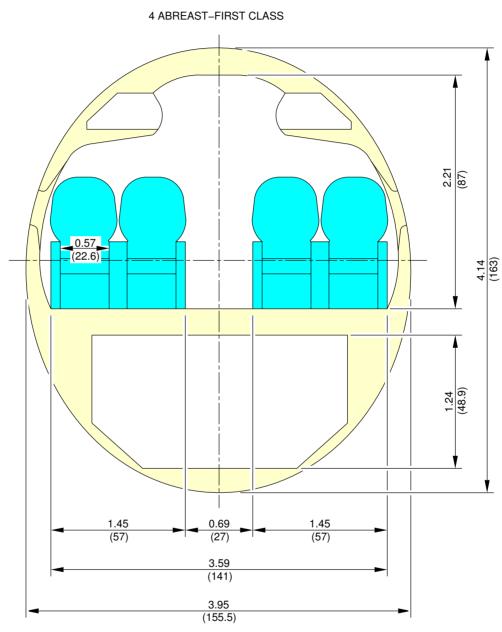


NOTE: DIMENSIONS m (in)

N\_AC\_020500\_1\_0050102\_01\_02

Passenger Compartment Cross-section Economy Class, 6 Abreast - Wider Seat (Sheet 2 of 2) FIGURE 3

### \*\*ON A/C A320-100 A320-200



NOTE: DIMENSIONS m (in)

N\_AC\_020500\_1\_0060101\_01\_00

Passenger Compartment Cross-section
Passenger Compartment Cross-section, First-class
FIGURE 4

## 2-6-0 Cargo Compartments

\*\*ON A/C A320-100 A320-200

# Cargo Compartments

1. This section gives the cargo compartments location and dimensions.

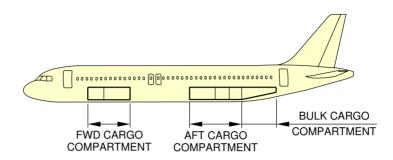
## 2-6-1 Lower Deck Cargo Compartments

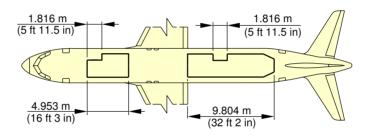
\*\*ON A/C A320-100 A320-200

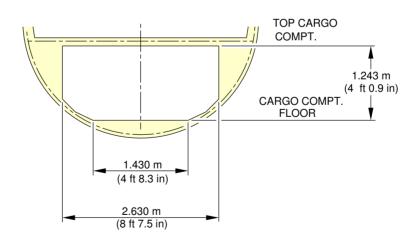
# Lower Deck Cargo Compartments

1. This section gives the lower deck cargo compartments.

### \*\*ON A/C A320-100 A320-200

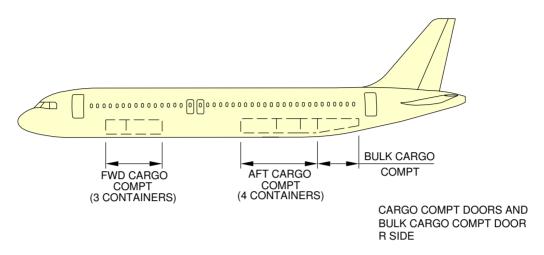


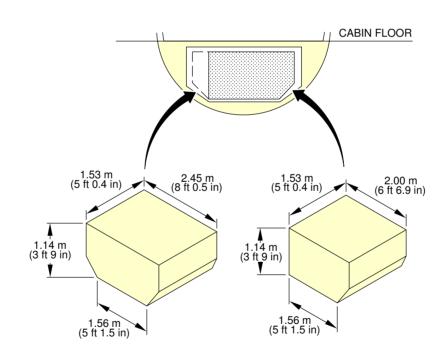




N\_AC\_020601\_1\_0040101\_01\_01

### \*\*ON A/C A320-100 A320-200





N\_AC\_020601\_1\_0050101\_01\_00

Lower Deck Cargo Compartments Lower Deck Cargo Compartments Containers FIGURE 2

2-7-0 Door Clearances

\*\*ON A/C A320-100 A320-200

Doors Clearances

1. This section gives doors clearances.

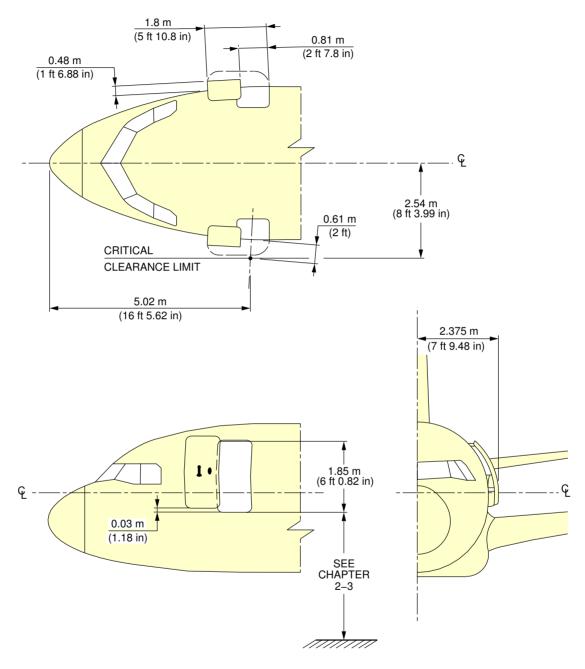
## 2-7-1 Forward Passenger / Crew Doors

\*\*ON A/C A320-100 A320-200

Forward Passenger / Crew Doors

1. This section gives forward passenger / crew doors clearances.

### \*\*ON A/C A320-100 A320-200



N\_AC\_020701\_1\_0030101\_01\_00

Doors Clearances Forward Passenger / Crew Doors FIGURE 1

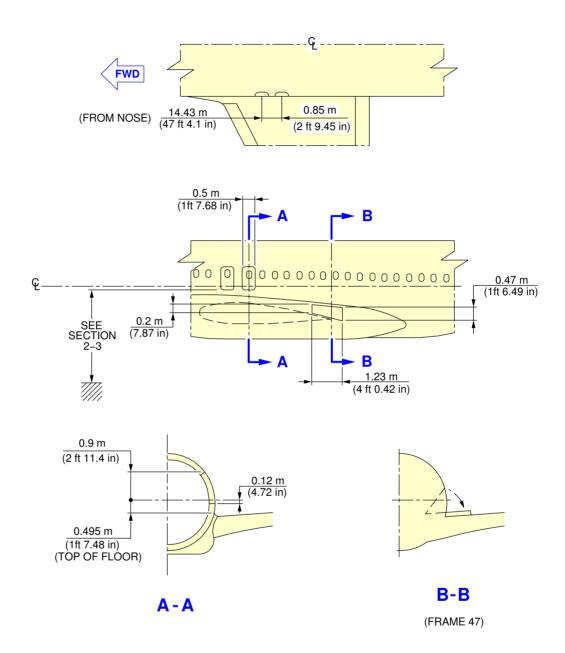
## 2-7-2 Emergency Exits

\*\*ON A/C A320-100 A320-200

# **Emergency Exits**

1. This section gives emergency exits doors clearances.

### \*\*ON A/C A320-100 A320-200



**NOTE:** ESCAPE SLIDE COMPARTMENT DOOR OPENS ON WING UPPER SURFACE.

N\_AC\_020702\_1\_0040101\_01\_00

Doors Clearances Emergency Exits FIGURE 1

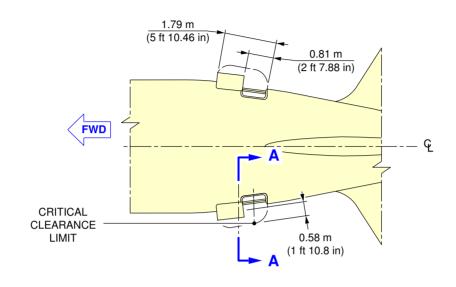
## 2-7-3 Aft Passenger / Crew Doors

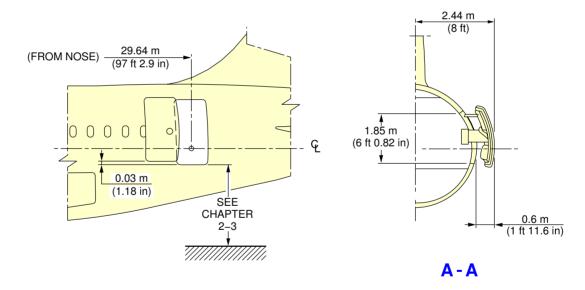
\*\*ON A/C A320-100 A320-200

## Aft Passenger / Crew Doors

1. This section gives Aft passenger / crew doors clearances.

### \*\*ON A/C A320-100 A320-200





N\_AC\_020703\_1\_0030101\_01\_00

 $\begin{array}{c} {\sf Doors\ Clearances} \\ {\sf Aft\ Passenger\ /\ Crew\ Doors} \\ {\sf FIGURE\ 1} \end{array}$ 

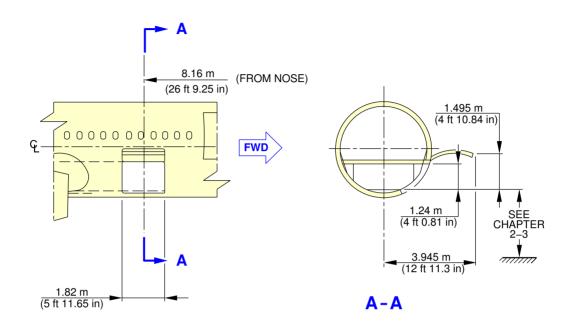
## 2-7-4 Forward Cargo Compartment Doors

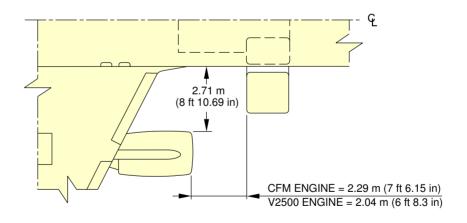
\*\*ON A/C A320-100 A320-200

# Forward Cargo Compartment Door

1. This section gives forward cargo compartment door clearances.

### \*\*ON A/C A320-100 A320-200





N\_AC\_020704\_1\_0030101\_01\_00

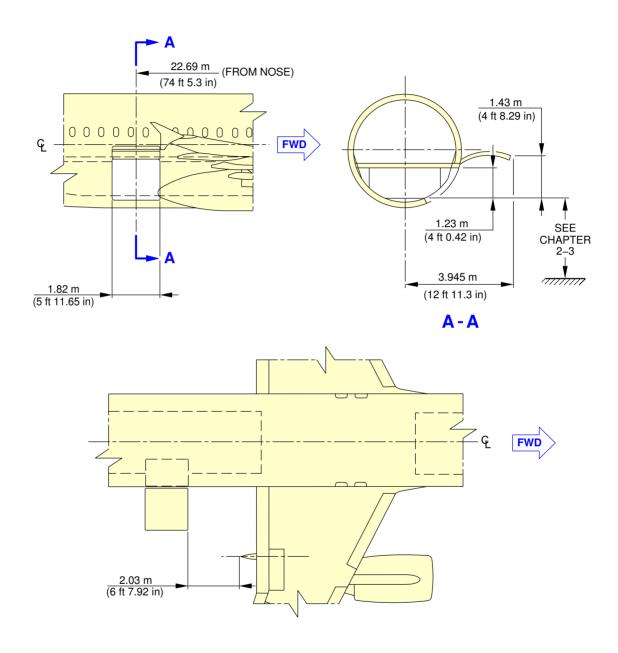
## 2-7-5 Aft Cargo Compartment Doors

\*\*ON A/C A320-100 A320-200

# Aft Cargo Compartment Door

1. This section gives Aft cargo compartment door clearances.

## \*\*ON A/C A320-100 A320-200



N\_AC\_020705\_1\_0030101\_01\_00

 $\begin{array}{c} {\sf Doors\ Clearances} \\ {\sf Aft\ Cargo\ Compartment\ Door} \\ {\sf FIGURE\ 1} \end{array}$ 

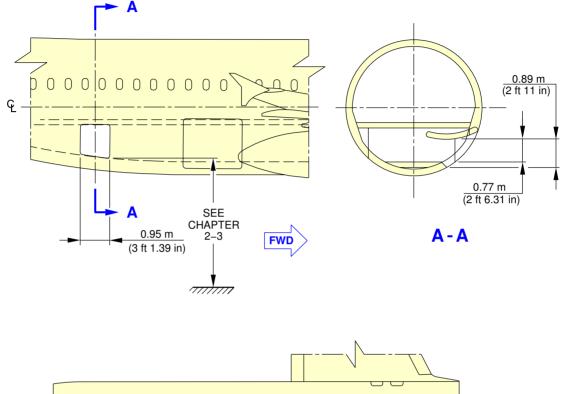
## 2-7-6 Bulk Cargo Compartment Doors

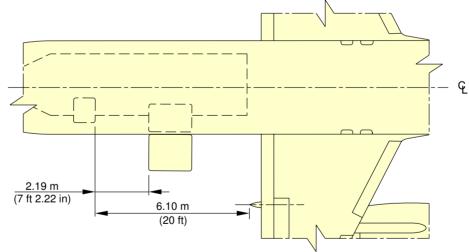
\*\*ON A/C A320-100 A320-200

# Bulk Cargo Compartment Door

1. This section gives the bulk cargo compartment door clearances.

## \*\*ON A/C A320-100 A320-200





N\_AC\_020706\_1\_0010101\_01\_01

 $\begin{array}{c} {\sf Doors\ Clearances} \\ {\sf Bulk\ Cargo\ Compartment\ Door} \\ {\sf FIGURE\ 1} \end{array}$ 

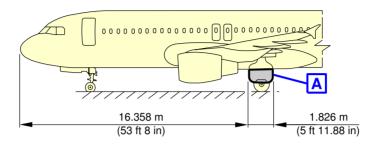
## 2-7-7 Main Landing Gear Doors

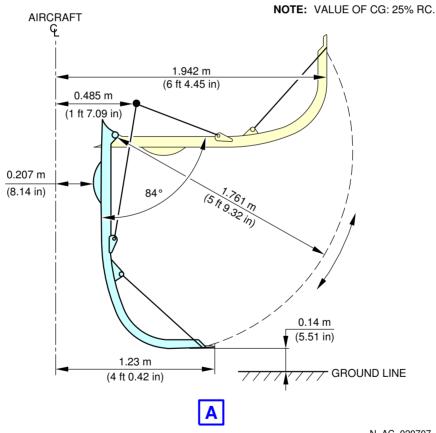
\*\*ON A/C A320-100 A320-200

# Main Landing Gear Doors

1. This section gives the main landing gear doors clearances.

### \*\*ON A/C A320-100 A320-200

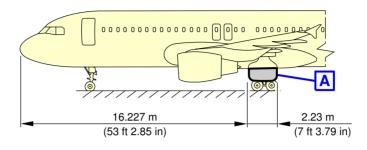




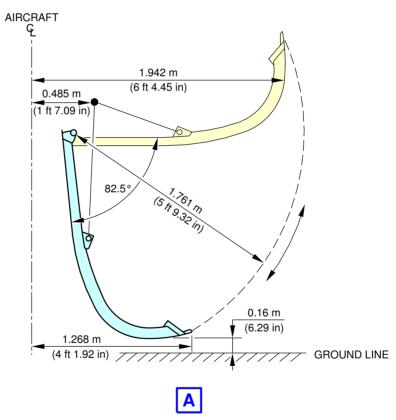
N\_AC\_020707\_1\_0030101\_01\_02

Doors Clearances Main Landing Gear Doors FIGURE 1

### \*\*ON A/C A320-100 A320-200



NOTE: VALUE OF CG: 25% RC.



N\_AC\_020707\_1\_0040101\_01\_02

Doors Clearances Main Landing Gear Doors (Bogie) FIGURE 2

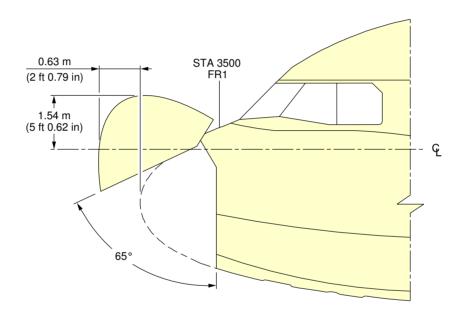
2-7-8 Radome

\*\*ON A/C A320-100 A320-200

# Radome

1. This section gives the radome clearances.

\*\*ON A/C A320-100 A320-200



N\_AC\_020708\_1\_0030101\_01\_00

Doors Clearances Radome FIGURE 1

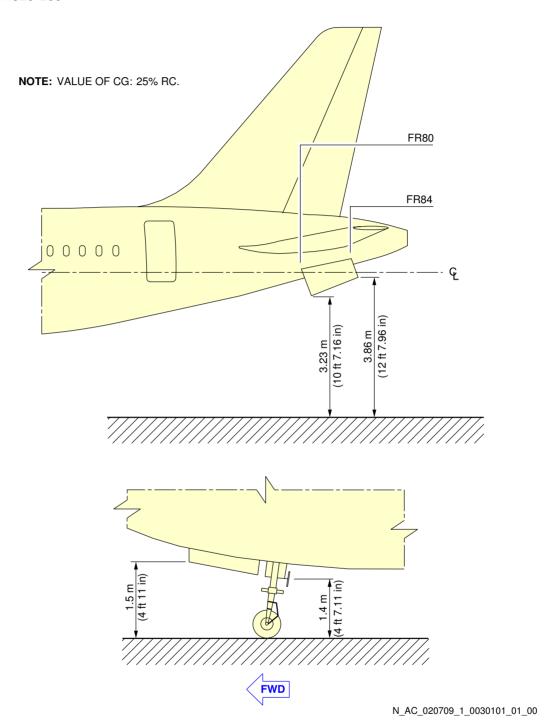
## 2-7-9 APU and Nose Landing Gear Doors

\*\*ON A/C A320-100 A320-200

## APU and Nose Landing Gear Doors

1. This section gives APU and Nose Landing Gear doors clearances.

# \*\*ON A/C A320-100 A320-200



Doors Clearances
APU and Nose Landing Gear Doors
FIGURE 1

### AIRPLANE PERFORMANCE

### 3-1-0 General Information

### \*\*ON A/C A320-100 A320-200

### **General Information**

1. This section gives standard day temperatures.

Section 3-2 indicates payload range information at specific altitudes recommended for long range cruise with a given fuel reserve condition.

Section 3-3 represents FAR take-off runway length requirements at ISA and ISA  $+15\,^{\circ}$ C ( $+59\,^{\circ}$ F) for CFM56-5A, CFM56-5B and IAE V2500 series engine conditions for FAA certification.

Section 3-4 represents FAR landing runway length requirements for FAA certification.

Section 3-5 indicates final approach speeds.

Standard day temperatures for the altitudes shown are tabulated below:

Standard day temperatures for the altitude									
Alt	tude	Standard Day Temperature							
FEET	METERS	°F	°C						
0	0	59.0	15.0						
2000	610	51.9	11.1						
4000	1219	44.7	7.1						
6000	1829	37.6	3.1						
8000	2438	30.5	-0.8						

3-2-0 Payload / Range

\*\*ON A/C A320-100 A320-200

Payload / Range

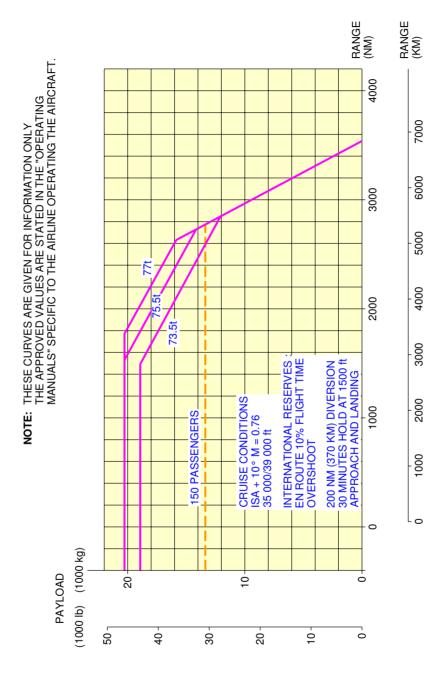
1. Payload / Range

# 3-2-1 ISA Conditions

\*\*ON A/C A320-100 A320-200

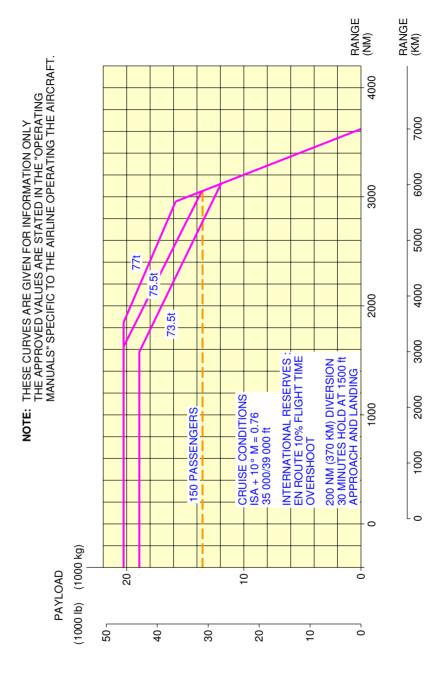
# ISA Conditions

1. This section gives the payload / range at ISA conditions.



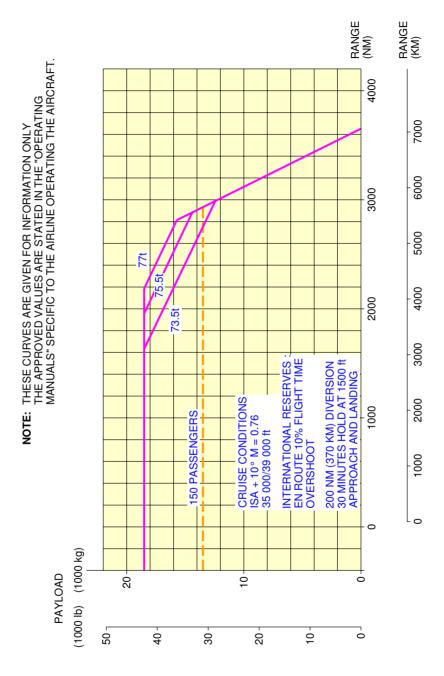
N\_AC\_030201\_1\_0060101\_01\_00

Payload / Range CFM56-5A series engine FIGURE 1



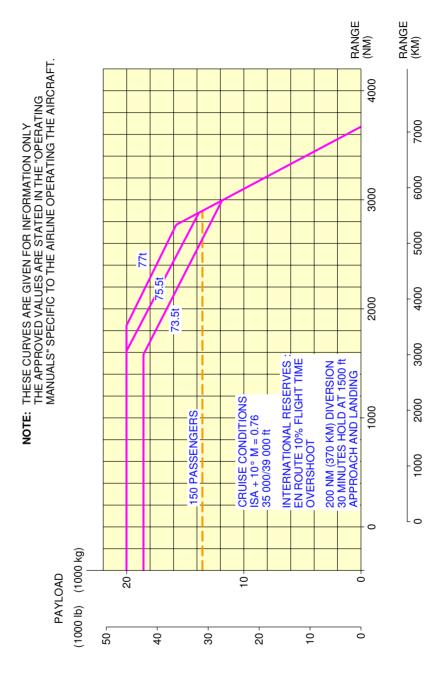
N\_AC\_030201\_1\_0070101\_01\_00

Payload / Range CFM56-5B series engine FIGURE 2



N\_AC\_030201\_1\_0080101\_01\_00

Payload / Range IAE V2500-A1 series engine FIGURE 3



N\_AC\_030201\_1\_0090101\_01\_00

Payload / Range IAE V2500-A5 series engine FIGURE 4

3-3-0 FAR / JAR Takeoff Weight Limitation

\*\*ON A/C A320-100 A320-200

FAR / JAR Take-off Weight Limitation

1. FAR / JAR Take-off Weight Limitation

# 3-3-1 ISA Conditions

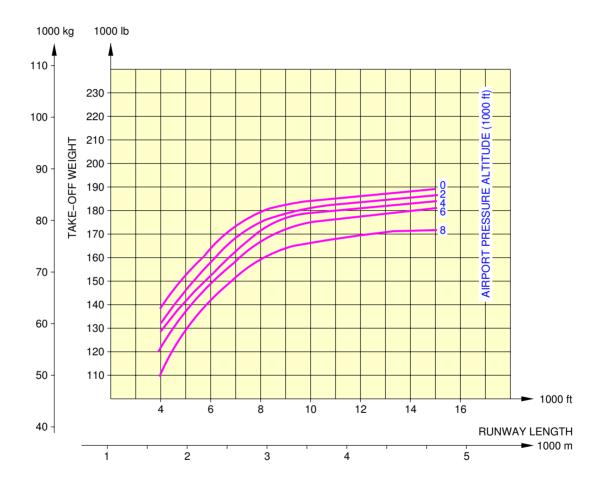
\*\*ON A/C A320-100 A320-200

# ISA Conditions

1. This section gives the take-off weight limitation at ISA conditions.

\*\*ON A/C A320-100 A320-200

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

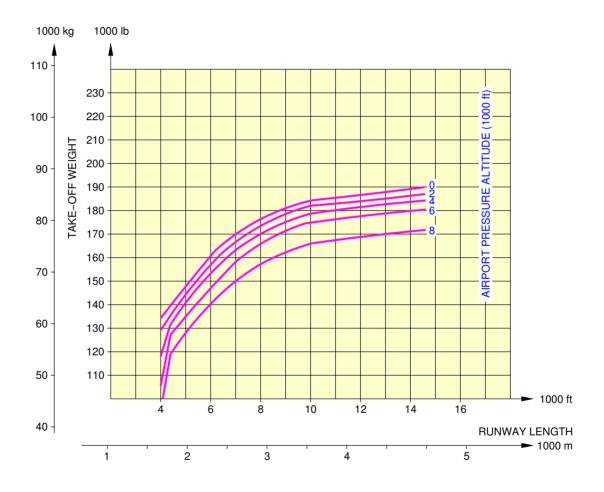


N\_AC\_030301\_1\_0050101\_01\_00

FAR / JAR Take-off Weight Limitation ISA Conditions – CFM56 series engine FIGURE 1

\*\*ON A/C A320-100 A320-200

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



N\_AC\_030301\_1\_0060101\_01\_00

FAR / JAR Take-off Weight Limitation ISA Conditions – IAE V2500 series engine FIGURE 2

3-3-2 ISA +15°C (+59°F) Conditions

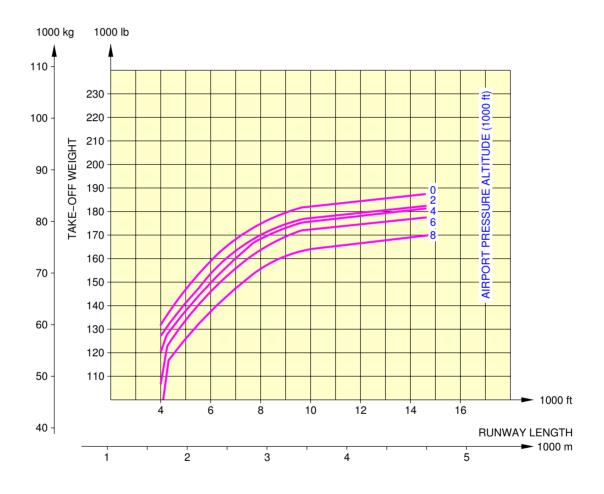
\*\*ON A/C A320-100 A320-200

ISA +15 °C (+59 °F) Conditions

1. This section gives the take-off weight limitation at ISA  $+15\,^{\circ}\,\text{C}$  ( $+59\,^{\circ}\,\text{F}$ ) conditions.

\*\*ON A/C A320-100 A320-200

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

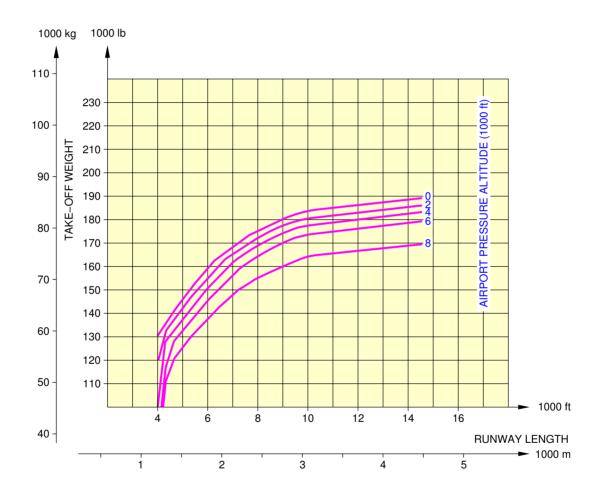


N\_AC\_030302\_1\_0050101\_01\_00

FAR / JAR Take-off Weight Limitation ISA  $+15\,^{\circ}$ C ( $+59\,^{\circ}$ F) Conditions – CFM56 series engine FIGURE 1

\*\*ON A/C A320-100 A320-200

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING
MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



N\_AC\_030302\_1\_0060101\_01\_00

FAR / JAR Take-off Weight Limitation ISA +15  $^{\circ}$  C (+59  $^{\circ}$  F) Conditions – IAE V2500 series engine FIGURE 2

3-4-0 FAR / JAR Landing Field Length

\*\*ON A/C A320-100 A320-200

 $\underline{\mathsf{FAR}\ /\ \mathsf{JAR}\ \mathsf{Landing}\ \mathsf{Field}\ \mathsf{Length}}$ 

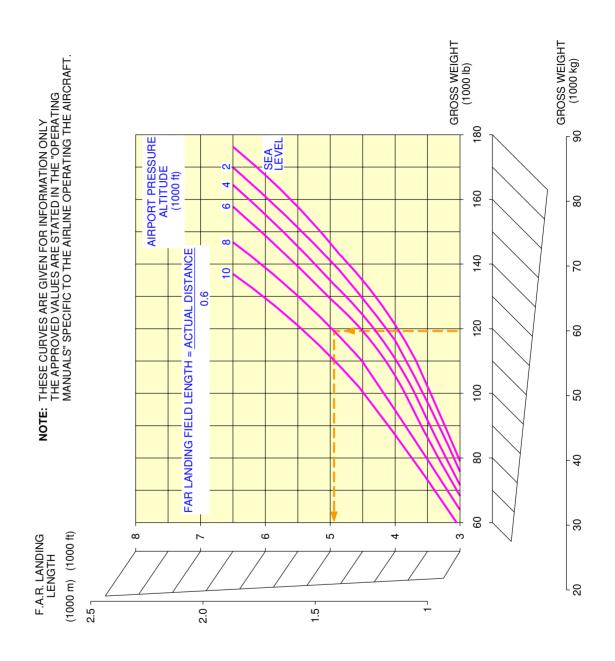
1. FAR / JAR Landing Field Length

# 3-4-1 ISA Conditions

\*\*ON A/C A320-100 A320-200

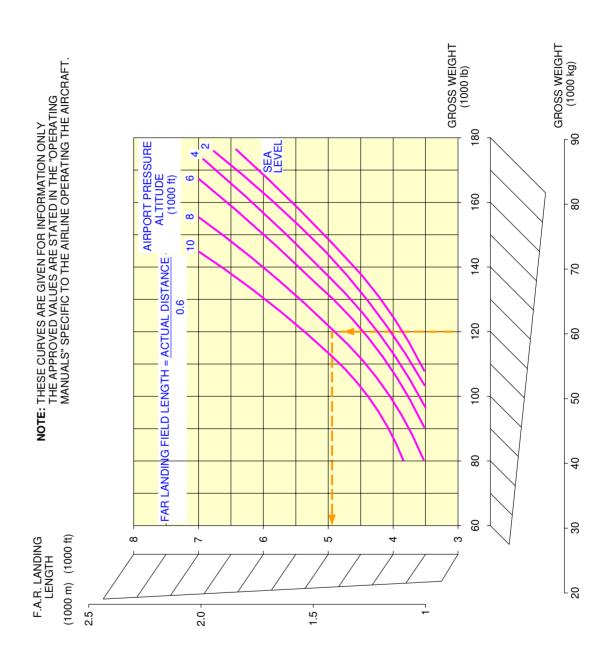
# ISA Conditions

1. This section gives the landing field length.



N\_AC\_030401\_1\_0050101\_01\_00

FAR / JAR Landing Field Length CFM56 series engine FIGURE 1



N\_AC\_030401\_1\_0060101\_01\_00

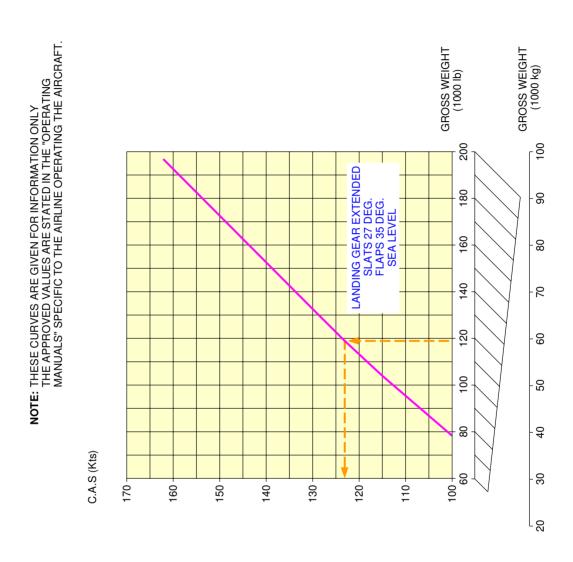
FAR / JAR Landing Field Length IAE V2500 series engine FIGURE 2

3-5-0 Final Approach Speed

\*\*ON A/C A320-100 A320-200

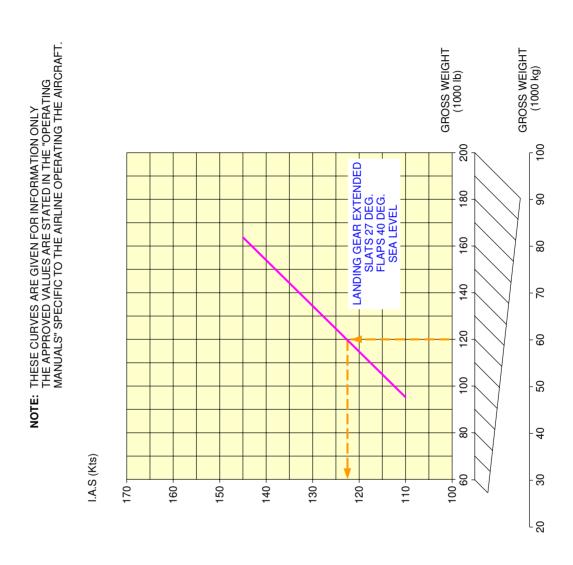
Final Approach Speed

1. This section gives the final approach speed.



N\_AC\_030500\_1\_0050101\_01\_00

Final Approach Speed CFM56 series engine FIGURE 1



N\_AC\_030500\_1\_0060101\_01\_00

Final Approach Speed IAE V2500 series engine FIGURE 2

### **GROUND MANEUVERING**

#### 4-1-0 General Information

\*\*ON A/C A320-100 A320-200

#### General Information

1. This section provides airplane turning capability and maneuvering characteristics.

For ease of presentation, this data has been determined from the theoretical limits imposed by the geometry of the aircraft, and where noted, provides for a normal allowance for tire slippage. As such, it reflects the turning capability of the aircraft in favorable operating circumstances. This data should only be used as guidelines for the method of determination of such parameters and for the maneuvering characteristics of this aircraft type.

In the ground operating mode, varying airline practices may demand that more conservative turning procedures be adopted to avoid excessive tire wear and reduce possible maintenance problems. Airline operating techniques will vary in the level of performance, over a wide range of operating circumstances throughout the world. Variations from standard aircraft operating patterns may be necessary to satisfy physical constraints within the maneuvering area, such as adverse grades, limited area or high risk of jet blast damage. For these reasons, ground maneuvering requirements should be coordinated with the using airlines prior to layout planning.

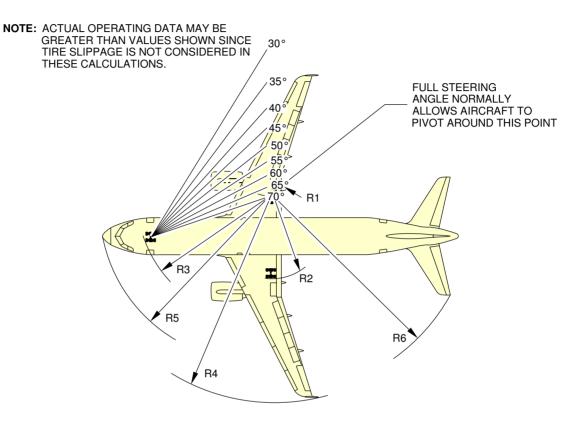
4-2-0 Turning Radii

\*\*ON A/C A320-100 A320-200

Turning Radii

1. This section gives the turning radii.

# \*\*ON A/C A320-100 A320-200

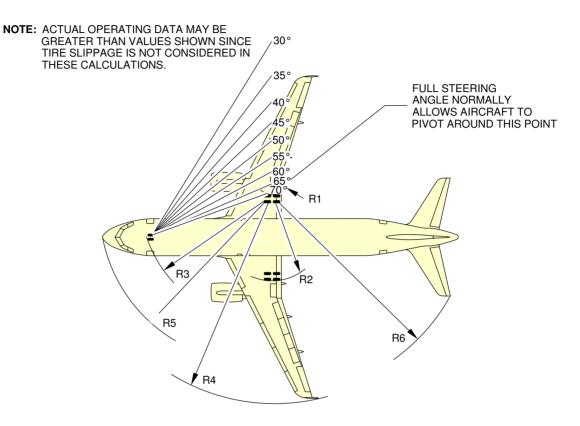


STEERING ANGLE (°)	R	11	R2		R3		R4		R5		R6	
	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
30	57.2	17.43	85.5	26.36	84.1	25.64	128.3	39.1	92.4	28.16	111.4	33.96
35	44.6	13.59	73.9	22.51	73.5	22.40	115.7	35.28	83.0	25.29	101.2	30.86
40	34.8	10.60	64.1	19.53	65.7	20.02	106.0	32.32	76.3	23.25	93.7	28.56
45	26.8	8.18	56.1	17.10	58.9	18.24	98.1	29.92	71.4	21.76	87.9	26.81
50	20.1	6.14	49.4	15.07	55.3	16.86	96.1	27.90	67.7	20.65	83.4	25.42
55	14.4	4.39	43.7	13.31	51.8	15.79	85.9	26.17	65.0	19.80	79.7	24.29
60	9.3	2.83	38.6	11.76	49.1	14.95	80.8	24.64	62.9	19.16	76.6	23.36
65	4.7	1.43	34.0	10.36	47.0	14.31	76.3	23.26	61.2	18.67	74.1	22.58
70	0.5	0.14	29.7	9.06	45.3	13.81	72.2	21.99	60.0	18.3	71.9	21.91

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Turning Radii, no Slip Angle
Turning Radii, no Slip Angle – Dual Landing Gear
FIGURE 1

# \*\*ON A/C A320-100 A320-200



STEERING ANGLE (°) ft	F	R1 F		R2 F		R3		R4		R5		R6	
	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	
30	57.6	17.55	86.1	26.23	84.1	25.64	128.3	39.1	92.4	28.16	111.4	33.96	
35	45.0	13.71	73.5	22.39	73.5	22.40	115.7	35.28	83.0	25.29	101.2	30.86	
40	35.2	10.72	63.7	19.40	65.7	20.02	106.0	32.32	76.3	23.25	93.7	28.56	
45	27.2	8.3	55.7	16.98	58.9	18.24	98.1	29.92	71.4	21.76	87.9	26.81	
50	20.6	6.27	49.0	14.95	55.3	16.86	96.1	27.90	67.7	20.65	83.4	25.42	
55	14.8	4.51	43.3	13.19	51.8	15.79	85.9	26.17	65.0	19.80	79.7	24.29	
60	9.7	2.96	38.2	11.64	49.1	14.95	80.8	24.64	62.9	19.16	76.6	23.36	
65	5.1	1.55	33.6	10.23	47.0	14.31	76.3	23.26	61.2	18.67	74.1	22.58	
70	0.9	0.26	29.3	8.94	45.3	13.81	72.2	21.99	60.0	18.3	71.9	21.91	

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Turning Radii, no Slip Angle
Turning Radii, no Slip Angle – Bogie Landing Gear
FIGURE 2

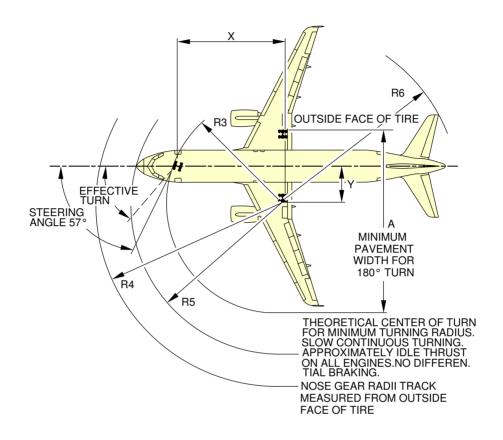
# 4-3-0 Minimum Turning Radii

\*\*ON A/C A320-100 A320-200

# Minimum Turning Radii

1. This section gives the minimum turning radii.

# \*\*ON A/C A320-100 A320-200



EFFECTIVE TURN ANGLE		Х	Y	A*	R3	R4	R5	R6
70°	m	12.64	4.60	22.9	13.81	21.99	18.30	21.91
	(ft)	41.5	15.1	75.1	45.3	72.2	60.0	71.9

\* FOR DUAL L/G. FOR BOGIE L/G. A = 22.75 m (74.64 ft)

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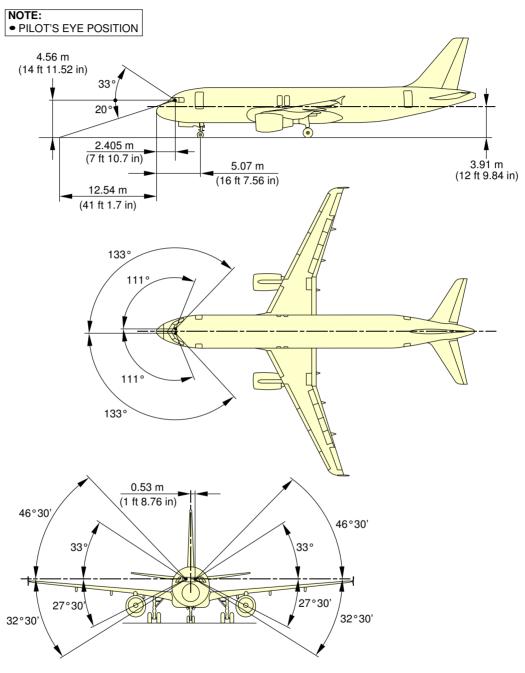
Minimum Turning Radii FIGURE 1

4-4-0 Visibility from Cockpit in Static Position

\*\*ON A/C A320-100 A320-200

Visibility from Cockpit in Static Position

1. This section gives the visibility from cockpit in static position.



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Visibility from Cockpit in Static Position FIGURE 1

4-5-0 Runway and Taxiway Turn Paths

\*\*ON A/C A320-100 A320-200

Runway and Taxiway Turn Paths

1. Runway and Taxiway Turn Paths.

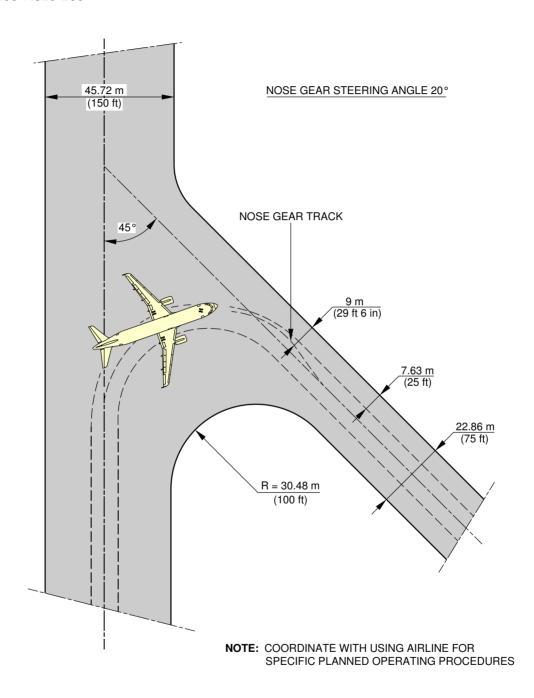
4-5-1 135° Turn - Runway to Taxiway

\*\*ON A/C A320-100 A320-200

135° Turn - Runway to Taxiway

1. This section gives the 135° turn - runway to taxiway.

# \*\*ON A/C A320-100 A320-200



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135° Turn - Runway to Taxiway FIGURE 1

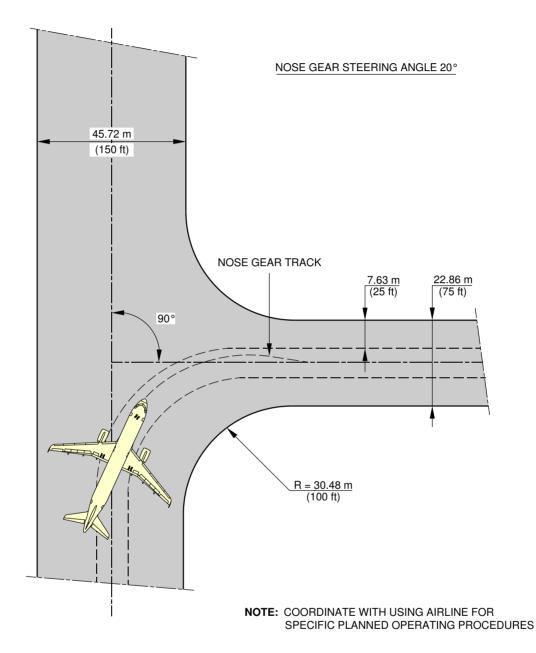
4-5-2 90° Turn - Runway to Taxiway

\*\*ON A/C A320-100 A320-200

90° Turn - Runway to Taxiway

1. This section gives the  $90^{\circ}$  turn - runway to taxiway.

# \*\*ON A/C A320-100 A320-200



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90° Turn - Runway to Taxiway FIGURE 1

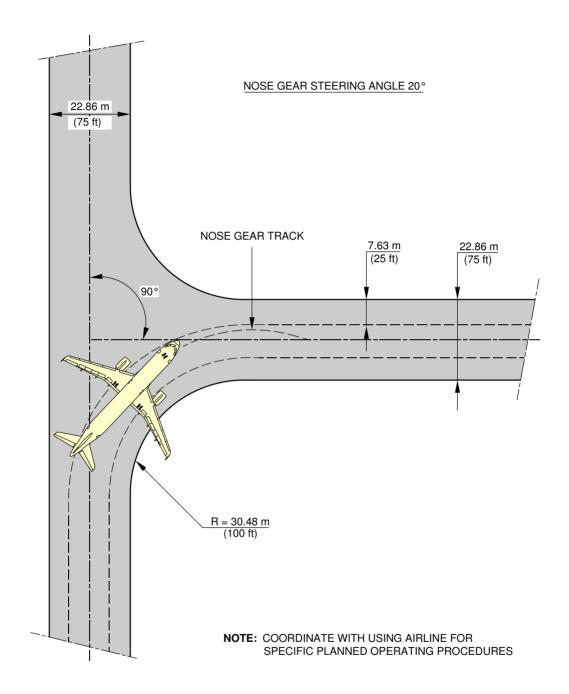
4-5-5  $90\degree$  Turn - Taxiway to Taxiway

\*\*ON A/C A320-100 A320-200

90° Turn - Taxiway to Taxiway

1. This section gives the  $90^{\circ}$  turn - taxiway to taxiway.

# \*\*ON A/C A320-100 A320-200



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90° Turn - Taxiway to Taxiway FIGURE 1

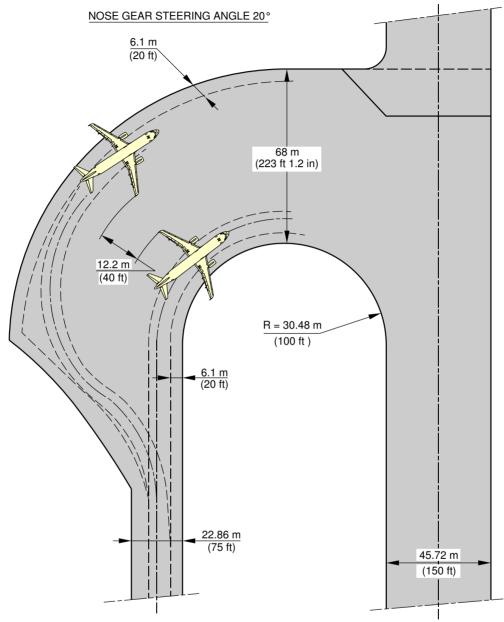
4-6-0 Runway Holding Bay (Apron)

\*\*ON A/C A320-100 A320-200

Runway Holding Bay (Apron)

1. This section gives the runway holding bay (Apron).

# \*\*ON A/C A320-100 A320-200



NOTE: COORDINATE WITH USING AIRLINE FOR SPECIFIC PLANNED OPERATING PROCEDURES

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Runway Holding Bay (Apron) FIGURE 1

#### **TERMINAL SERVICING**

#### 5-0-0 TERMINAL SERVICING

\*\*ON A/C A320-100 A320-200

#### Terminal Servicing

#### 1. General

This chapter provides typical ramp layouts, corresponding minimum turnaround time estimations, locations of ground service points and service requirements.

The information given in this chapter reflects ideal conditions. Actual ramp layouts and service requirements may vary according to local regulations, airline procedures and the airplane condition.

- Section 5.1 shows typical ramp layouts for passenger aircraft at the gate or on an open apron.
- Section 5.2 shows the minimum turnaround schedules for full servicing arrangements.
- Section 5.3 shows the minimum turnaround schedule for reduced servicing arrangements.
- Section 5.4 gives the locations of ground service connections, the standard of connections used and typical capacities and requirements.
- Section 5.5 provides the engine starting pneumatic requirements for different engine types and different ambient temperatures.
- Section 5.6 provides the air conditioning requirements for heating and cooling (pull-down and pull-up) using ground conditioned air for different ambient temperatures.
- Section 5.7 provides the air conditioning requirements for heating and cooling to maintain a constant cabin air temperature using low pressure conditioned air.
- Section 5.8 shows the ground towing requirements taking into account different ground surface and aircraft conditions.

#### 5-1-0 Airplane Servicing Arrangements

# \*\*ON A/C A320-100 A320-200

#### Airplane Servicing Arrangements

#### 1. General

This chapter provides typical ramp layouts, showing the various GSE items in position during typical turnaround scenarios for the passenger aircraft.

These ramp layouts show typical arrangements only. Each operator will have its own specific requirements/regulations for the positioning and operation on the ramp.

The associated turnaround chart for full servicing is given in section 5.2.

The associated turnaround chart for minimum servicing arrangement is given in section 5.3.

# 5-1-1 Symbols Used on Servicing Diagrams

\*\*ON A/C A320-100 A320-200

# Symbols Used on Servicing Diagrams

1. This table gives the symbols used on servicing diagrams.

	Ground Support Equipment				
AC	AIR CONDITIONING UNIT				
AS	AIR STARTING UNIT				
BULK	BULK TRAIN				
CAT	CATERING TRUCK				
СВ	CONVEYOR BELT				
CLEAN	CLEANING TRUCK				
FUEL	FUEL HYDRANT DISPENSER or TANKER				
GPU	GROUND POWER UNIT				
LD CL	LOWER DECK CARGO LOADER				
LV	LAVATORY VEHICLE				
PBB	PASSENGER BOARDING BRIDGE				
PS	PASSENGER STAIRS				
TOW	TOW TRACTOR				
ULD	ULD TRAIN				
WV	POTABLE WATER VEHICLE				

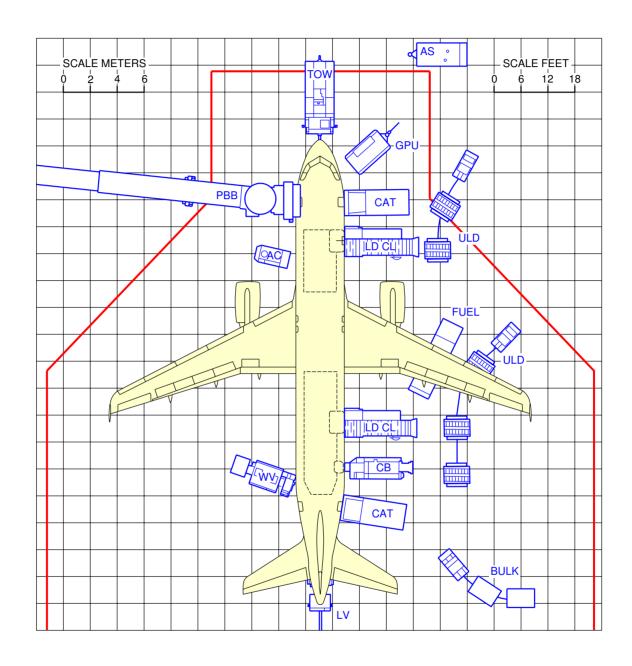
5-1-2 Typical Ramp Layout - Aircraft at the Gate

\*\*ON A/C A320-100 A320-200

# Aircraft at the Gate

1. This section gives the typical servicing arrangement for pax version (Passenger Bridge).

# \*\*ON A/C A320-100 A320-200



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Aircraft at the Gate FIGURE 1

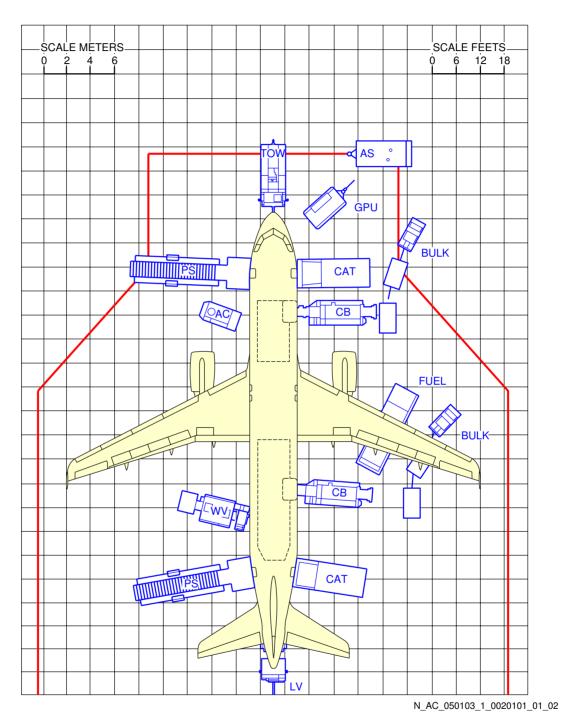
5-1-3 Typical Ramp Layout - Aircraft at an Open Apron

\*\*ON A/C A320-100 A320-200

# Aircraft at an Open Apron

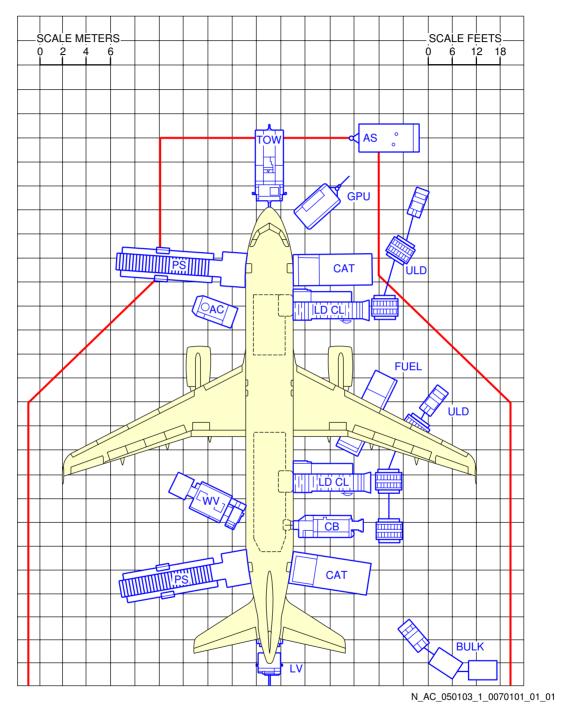
1. This section gives the typical servicing arrangement for pax version (Open Apron).

# \*\*ON A/C A320-100 A320-200



Aircraft at an Open Apron Aircraft at an Open Apron (Bulk Loading) FIGURE 1

# \*\*ON A/C A320-100 A320-200



Aircraft at an Open Apron Aircraft at an Open Apron (ULD Loading) FIGURE 2

#### 5-2-0 Terminal Operations - Full Servicing Turnaround

# \*\*ON A/C A320-100 A320-200

#### Terminal Operations - Full Servicing Turnaround

1. This section provides a chart showing typical activities for full servicing turnaround.

These data are provided to show the general scope and type of activities involved in ramp operations during the turnaround of an aircraft.

Varying airline practices and operating circumstances may result in different sequences and different time intervals to do the activities shown.

#### 5-2-1 Full Servicing Turnaround Charts

#### \*\*ON A/C A320-100 A320-200

#### Full Servicing Turnaround Charts

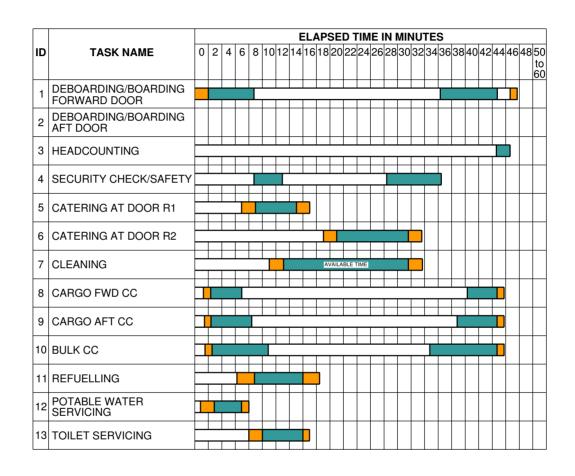
1. Assumptions for 48 minutes turnaround chart - Full Servicing.

Please note this turnaround time is an assumption regarding a given example.

- A. Passenger handling: 150 pax / 1 bridge
  - (1) Deboarding
    - 1L:150
    - 2L:0
    - Deboarding rate: 22 pax / min per door.
    - No PRM
  - (2) Boarding
    - 1L:150
    - 2L:0
    - Boarding rate: 18 pax / min per door.
    - No PRM
- B. Catering: R1 R 2 / sequential
  - Galley M1: 4 FSTE
  - Galley M2: 7 FSTE
- C. Cleaning: Time available
- D. Security/Safety checks: Yes (4 min each)
  - Cabin crew change: Yes (4 min)
- E. Cargo
  - 2 Cargo loaders
  - 1 Belt loader
  - 1 operator / BL
  - No sliding carpet
  - FWD compartment: 3 LD3
  - AFT compartment : 4 LD3
  - Bulk in bulk CC: 1000 kg
- F. Refuel: 5.6 tons, 7134 (I), 2 hoses (1 side)
- G. Water servicing: 100%
- H. Toilet servicing: 100%

\*\*ON A/C A320-100 A320-200

TRT: 48 min



GSE POSITIONING

ACTIVITY

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Turnaround Stations Full Servicing (48 Min.) FIGURE 1

#### 5-3-0 Terminal Operation - Minimum Servicing Turnaround

# \*\*ON A/C A320-100 A320-200

# **Terminal Operation**

1. This section provides a chart showing typical activities for minimum servicing turnaround.

These data are provided to show the general scope and type of activities involved in ramp operations during the turnaround of an aircraft.

Varying airline practices and operating circumstances may result in different sequences and different time intervals to do the activities shown.

#### 5-3-1 Minimum Servicing Turnaround Chart

#### \*\*ON A/C A320-100 A320-200

#### Minimum Servicing Turnaround Chart

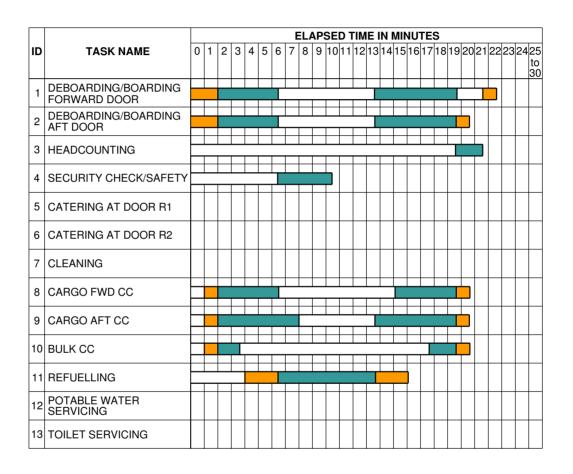
1. Assumptions for 23 minutes turnaround chart - Minimum Servicing.

Please note this turnaround time is an assumption regarding a given example.

- A. Passenger handling: 180 pax / 2 stairways
  - (1) Deboarding
    - 1L:90
    - 2L:90
    - Deboarding rate: 20 pax / min per door.
    - No PRM
  - (2) Boarding
    - 1L:90
    - 2L:90
    - Boarding rate: 15 pax / min per door.
    - No PRM
- B. Catering: No
  - Galley M1:
  - Galley M2:
- C. Cleaning: No
- D. Security/Safety checks: Yes (4 min each)
  - Cabin crew change: No
- E. Cargo
  - 2 Cargo loaders
  - 1 Belt loader
  - 1 operator / BL
  - No sliding carpet
  - FWD compartment bulk: 3 LD3
  - AFT compartment bulk: 4 LD3
  - Bulk in bulk CC: 1000 kg
- F. Refuel: 5.6 tons, 7134 (I), 2 hoses (1 side)
- G. Water servicing: 0%:
- H. Toilet servicing: 0%

\*\*ON A/C A320-100 A320-200

TRT: 23 min



GSE POSITIONING

ACTIVITY

N\_AC\_050301\_1\_0030101\_01\_02

Turnaround Stations Minimum Servicing (23 Min.) FIGURE 1

5-4-0 Ground Service Connections

\*\*ON A/C A320-100 A320-200

**Ground Service Connections** 

1. Ground Service Connections.

# 5-4-1 Ground Service Connections Layout

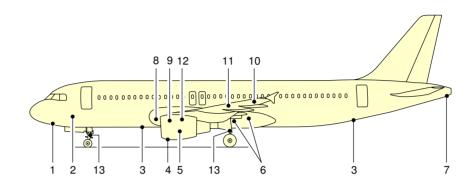
# \*\*ON A/C A320-100 A320-200

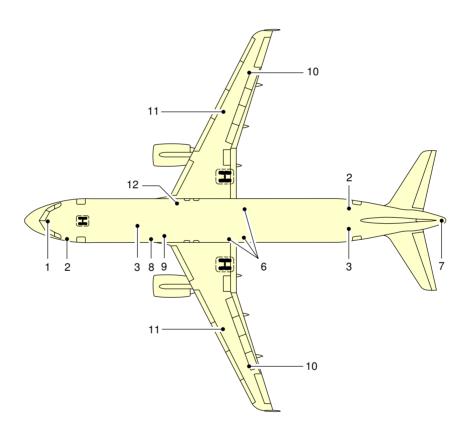
# Ground Service Connections Layout

1. This section gives the ground service connections layout.

	Ground Service Connections Layout
1	- GROUND ELECTRICAL POWER RECEPTABLE
2	– TOILET SERVICING
3	– WATER FILLING AND DRAINAGE
4	– IDG OIL FILLING CONNECTOR
5	– ENGINE OIL FILLING CONNECTOR
6	- HYDRAULIC
7	– APU OIL FILLING CONNECTOR
8	- GROUND SERVICE CONDITIONED AIR CONNECTOR
9	- GROUND AIR CONDITIONING AND AIR START CONNECTOR
10	- GRAVITY FILLING PANELS
11	- REFUEL/DEFUEL CONNECTOR
12	- REFUEL/DEFUEL PANEL
13	– AIRCRAFT GROUNDING

# \*\*ON A/C A320-100 A320-200





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 $\begin{array}{c} \hbox{Ground Service Connections} \\ \hbox{Ground Service Connections Layout} \\ \hbox{FIGURE 1} \end{array}$ 

#### 5-4-2 Grounding Points

\*\*ON A/C A320-100 A320-200

#### **Grounding Points**

1. Grounding Points.

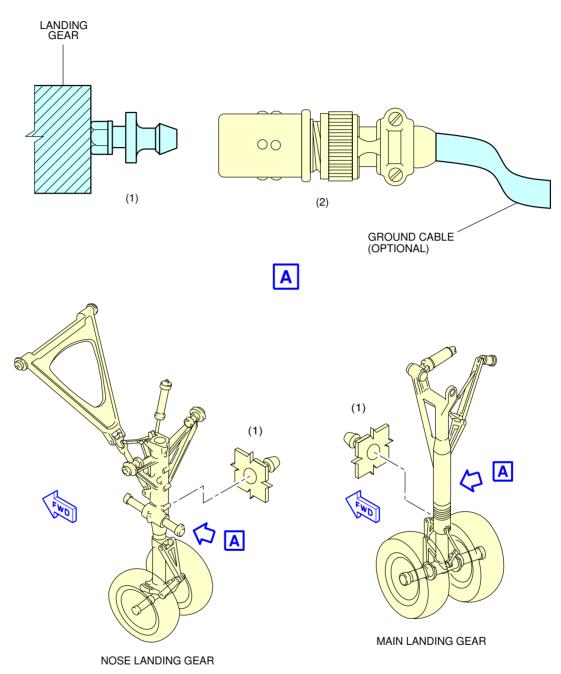
	DISTANCE: Meters (ft)			
		FROM AIRPLAN	IE CENTERLINE	MEAN HEIGHT
	AFT OF NOSE	R SIDE	L SIDE	FROM GROUND
On Nose Landing Gear leg:	5.07 m (16.63 ft)	on centerline		0.94 m (3.08 ft)
On left Main Landing Gear leg:	20.25 m (66.44 ft)		3.79 m (12.43 ft)	1.07 m (3.51 ft)
On right Main Landing Gear leg:	20.25 m (66.44 ft)	3.79 m (12.43 ft)		1.07 m (3.51 ft)

- A. The grounding stud on each landing gear leg is designed for use with a clip-on connector (such as Appleton TGR).
- B. The grounding studs are used to connect the aircraft to an approved ground connection on the ramp or in the hangar for:
  - refuel/defuel operations,
  - maintenance operations,
  - bad weather conditions.

<u>NOTE</u>: In all other conditions, the electrostatic discharge through the tyre is sufficient.



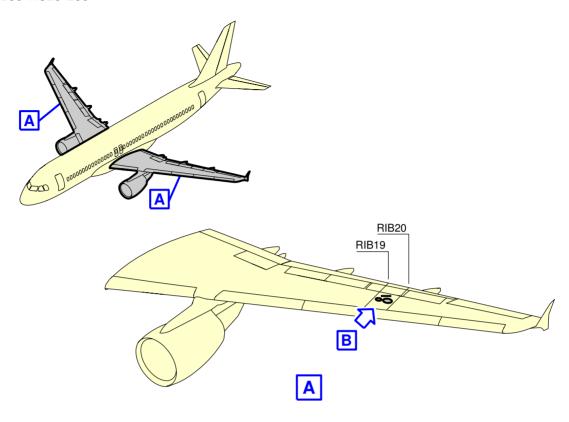
# \*\*ON A/C A320-100 A320-200



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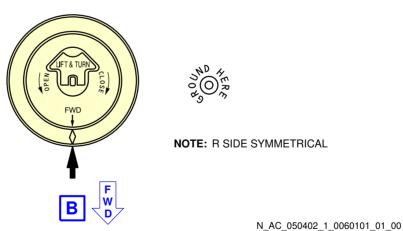
Ground Service Connections
Grounding Points
FIGURE 1

# \*\*ON A/C A320-100 A320-200



# JET FUEL

# FOR SPECIFICATIONS REFER TO FLIGHT MANUAL



Ground Service Connections
Grounding Points
FIGURE 2

## 5-4-3 Hydraulic System

# \*\*ON A/C A320-100 A320-200

# Hydraulic System

#### 1. Access.

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE LH SIDE m (ft)	MEAN HEIGHT FROM GROUND m (ft)
Green System:	19.17	1.27		1.76
Access door 197CB	(62.89)	(4.17)		(5.77)
Yellow System:	19.17		1.27	1.76
Access door 198CB	(62.89)		(4.17)	(5.77)
Blue System:	20.22	1.27		1.76
Access door 197EB	(66.34)	(4.17)		(5.77)

<u>NOTE</u>: Distances are approximate.

2. Reservoir Pressurization.

On the air pressurization manifold:

ACCESS	AFT OF NOSE	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM
	m (ft)	RH SIDE m (ft)	LH SIDE m (ft)	GROUND m (ft)
Access door 195AB	15.65 (51.35)		0.25 (0.82)	1.74 (5.71)

<u>NOTE</u>: Distances are approximate.

- One 1/4 in. AEROQUIP AE 96994E self-sealing connection common to the 3 reservoirs.

3. Accumulator Charging.

Four (MS28889-1) connections (one for each accumulator) for:

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE LH SIDE m (ft)	MEAN HEIGHT FROM GROUND m (ft)
Yellow System accumulator: Access door 196BB	16.1 (52.82)	0.25 (0.82)		1.99 (6.53)

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE LH SIDE m (ft)	MEAN HEIGHT FROM GROUND m (ft)
Green System accumulator: Left MLG door	16.77 (55.02)		0.25 (0.82)	3.2 (10.5)
Blue System accumulator: Access door 195BB	18.2 (59.71)		0.25 (0.82)	1.99 (6.53)
Yellow System braking accumulator: Access door 196BB	16.1 (52.82)	0.76 (2.49)		1.74 (5.71)

<u>NOTE</u>: Distances are approximate.

#### 4. Reservoir Filling.

On the Green system ground service panel:

ACCESS	AFT OF NOSE	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM
	m (ft)	RH SIDE m (ft)	LH SIDE m (ft)	GROUND m (ft)
Access door 197CB	19.17 (62.89)	1.27 (4.17)		1.76 (5.77)

 $\underline{\mathsf{NOTE}}: \ \mathsf{Distances} \ \mathsf{are} \ \mathsf{approximate}$ 

One 1/4 in. AEROQUIP AE96993E self-sealing connection for pressurized supply.

One handpump filling connection for unpressurized (suction) supply.

#### 5. Reservoir Drain.

On 3/8 in. self-sealing connection on reservoir for:

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE LH SIDE m (ft)	MEAN HEIGHT FROM GROUND m (ft)
Yellow System: Access door 196BB - 198CB	16.1 (52.82)	1.43 (4.69)		1.90 (6.23)
Green System: Left MLG door	16.77 (55.02)		1.27 (4.17)	2.61 (8.56)

ACCESS	AFT OF NOSE m (ft)	POSITION FRO CENTE RH SIDE	OM AIRCRAFT ERLINE LH SIDE	MEAN HEIGHT FROM GROUND
		m (ft)	m (ft)	m (ft)
Blue System Access door 197EB	20.22 (66.34)	1.27 (4.17)		1.76 (5.77)

 $\underline{\mathsf{NOTE}}$ : Distances are approximate.

On 3/8 in. self-sealing connection for the Blue system on:

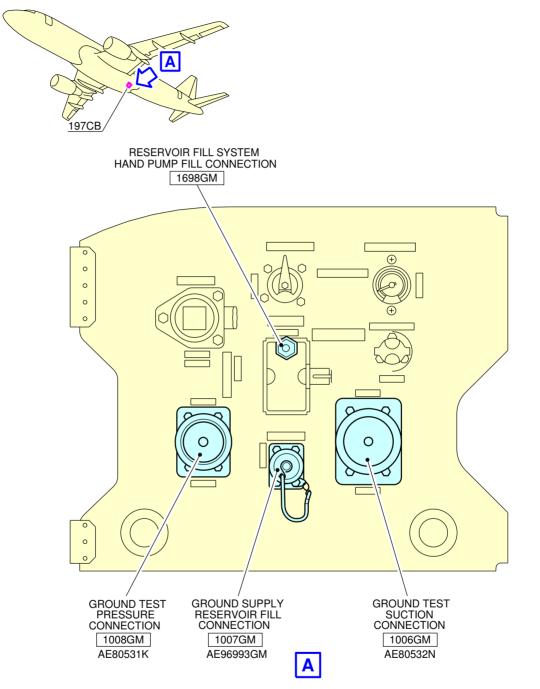
- Blue system ground service panel.

# 6. Ground Test.

On each ground service panel:

- One self-sealing connector AE80532N (suction).
- One self-sealing connector AE80531K (delivery).

# \*\*ON A/C A320-100 A320-200

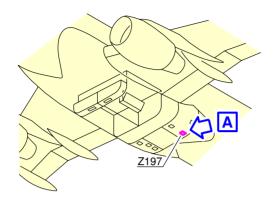


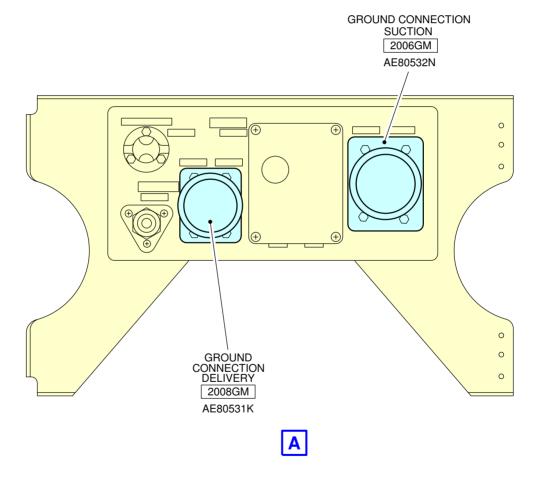
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Hydraulic System Green System Ground Service Panel FIGURE 1



# \*\*ON A/C A320-100 A320-200



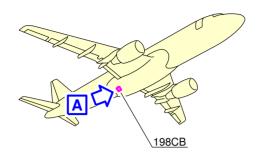


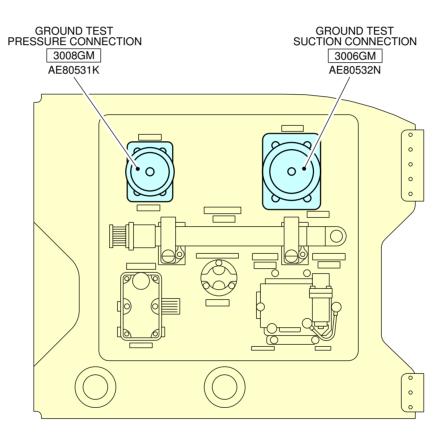
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Hydraulic System
Blue System Ground Service Panel
FIGURE 2



# \*\*ON A/C A320-100 A320-200







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Hydraulic System Yellow System Ground Service Panel FIGURE 3

#### 5-4-4 Electrical System

# \*\*ON A/C A320-100 A320-200

# **Electrical System**

1. Electrical System.

This chapter gives data related to the location of the ground service connections.

ACCESS	AFT OF NOSE	POSITION FRO	OM AIRCRAFT ERLINE	MEAN HEIGHT FROM
	m (ft)	RH SIDE m (ft)	LH SIDE m (ft)	GROUND m (ft)
A/C External Power: Access door 121AL	2.55 (8.37)	on centerline		2 (6.56)

<u>NOTE</u>: Distances are approximate.

2. Technical Specifications

This chapter gives data related to the location of the ground service connections.

A. External Power Receptacle:

- One MS90362-3 receptacle - 90 KVA.

B. Power Supply:

- Three-phase, 400 Hz, 115/200V

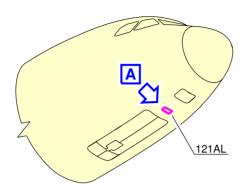
C. Electrical connectors for servicing

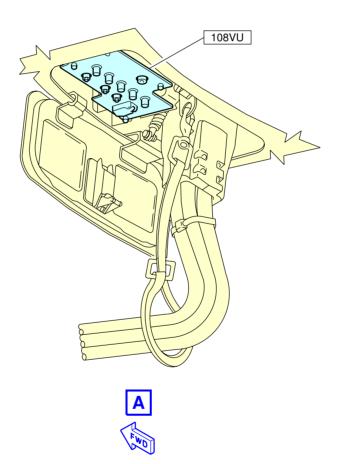
AC outlets: Hubbel 5258DC outlets: Hubbel 7472

- Vacuum cleaner outlets: Hubbel 5258



# \*\*ON A/C A320-100 A320-200





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Ground Service Connections External Power Receptacles FIGURE 1

# 5-4-5 Oxygen System

\*\*ON A/C A320-100 A320-200

# Oxygen System

1. Oxygen System.

	DISTANCE: Meters (ft)			
		FROM AIRPLANE CENTERLINE		MEAN
	AFT OF NOSE	R SIDE	L SIDE	HEIGHT FROM GROUND
One service connection (external charging in the avionics compartment) MS22066 Std.	3.45 m (11.32 ft)		1.15 m (3.77 ft)	2.60 m (8.53 ft)

3/8" UNF  $\times$  24 TPI

Nominal pressure: 1850 psi (127.55 bar)

Max fill pressure: 2035 psi (140.31 bar)

<u>NOTE</u>: Internal charging connection provided.

#### 5-4-6 Fuel System

# \*\*ON A/C A320-100 A320-200

#### Fuel System

1. Refuel/Defuel Couplings.

This chapter gives data related to the location of the ground service connections.

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE LH SIDE m (ft)	MEAN HEIGHT FROM GROUND m (ft)
Refuel/Defuel Integrated Panel: Access door 192MB	16.4 (53.81)		1.8 (5.91	1.8 (5.91)
Refuel/defuel coupling, Left Access Door 522HB (Optional)	17.2 (56.43)	10 (32.81)		3.5 (11.48)
Refuel/defuel coupling, Right Access Door 622HB	17.2 (56.43)		10 (32.81)	3.5 (11.48)
Gravity Refuel Coupling	19.1 (62.66)	12.4 (40.68)	12.4 (40.68)	3.7 (12.14)

<u>NOTE</u>: Distances are approximate.

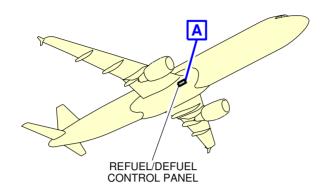
2. Technical Specifications

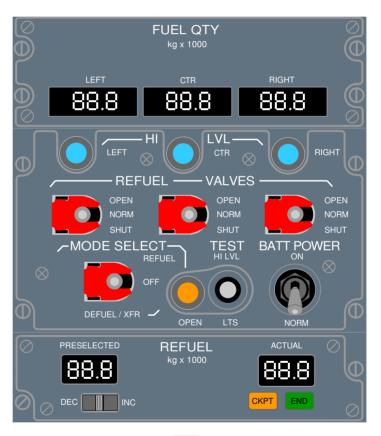
This chapter gives data related to the specifications of the ground service connections.

- A. Refuel/defuel couplings:
  - Right wing: one standard ISO R45, 2.5in.
  - Left wing: one optional standard ISO R45, 2.5 in.
- B. Refuel pressure:
  - Maximum pressure: 3.45 bar (50 psi)
- C. Refuel Flow:
  - 1400 I/minute (369.84 US gal/minute)



## \*\*ON A/C A320-100 A320-200





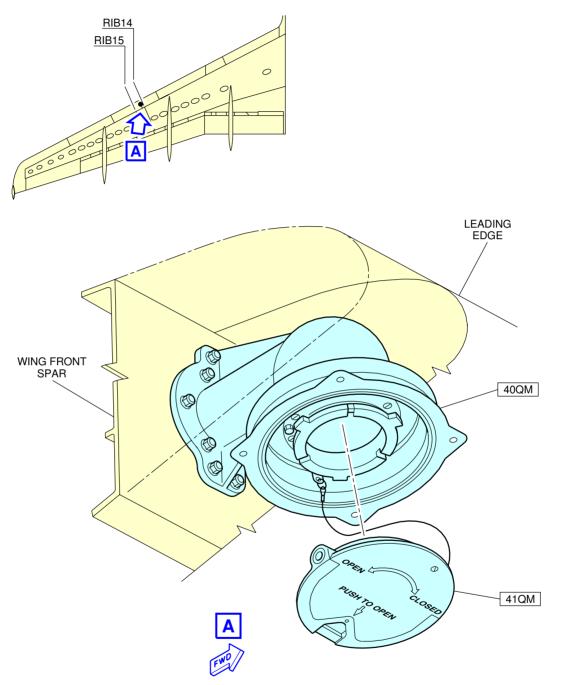


NOTE: STANDARD CONFIGURATION OF REFUEL/DEFUEL PANEL.

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Ground Service Connections Refuel/Defuel Panel FIGURE 1

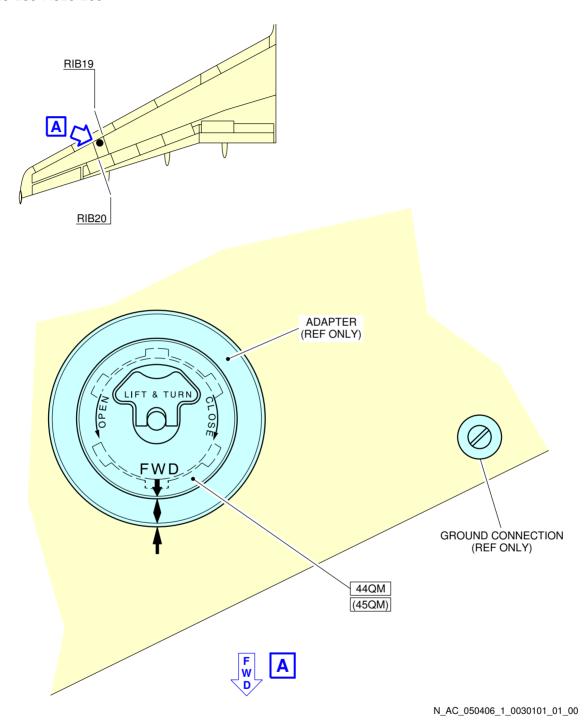
# \*\*ON A/C A320-100 A320-200



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Ground Service Connections Refuel/Defuel Couplings FIGURE 2

# \*\*ON A/C A320-100 A320-200



Ground Service Connections Gravity Refuel Couplings FIGURE 3

### 5-4-7 Pneumatic System

### \*\*ON A/C A320-100 A320-200

### Pneumatic System

1. High Pressure Air Connectors.

This chapter gives data related to the location of the ground service connections.

	AFT OF NOSE		POSITION FROM AIRCRAFT CENTERLINE	
	m (ft)	RH SIDE m (ft)	LH SIDE m (ft)	GROUND m (ft)
HP Connector Access door 191DB	12.98 (42.59)		0.84 (2.76)	1.76 (5.77)

NOTE: Distances are approximate.

#### A. Connector:

- One standard 3 in. ISO TC20 connection (MS33740) for engine starting and cabin air preconditioning (HP) installed on the left side of the belly fairing

#### 2. Low Pressure Air Connectors.

This chapter gives data related to the location of the ground service connections.

	AFT OF NOSE	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM
	m (ft)	RH SIDE m (ft)	LH SIDE m (ft)	GROUND m (ft)
LP Connector Access door 191CB	12.45 (40.85)		1.11 (3.64)	1.73 (5.68)

NOTE: Distances are approximate.

#### A. Connector:

One standard 8 in. connection (SAE AS4262 type B) for cabin air preconditioning (LP) installed on the left side of the belly fairing

### 5-4-8 Potable Water System

# \*\*ON A/C A320-100 A320-200

### Potable Water System

1. Potable Water Ground Service Panel.

ACCESS	AFT OF NOSE m (ft)	OM AIRCRAFT ERLINE LH SIDE m (ft)	MEAN HEIGHT FROM GROUND m (ft)
Potable Water Ground Service Panel: Access door 171AL:	31.3 (102.69)	0.3 (0.98)	2.6 (8.53)

**NOTE**: Distances are approximate

2. Potable Water Ground Drain Panel.

ACCESS.	ACCESS AFT OF NOSE		POSITION FROM AIRCRAFT CENTERLINE	
ACCE33	m (ft)	RH SIDE m (ft)	LH SIDE m (ft)	FROM GROUND m (ft)
Potable Water				
Ground Service	11.8		0.15	1.75
Panel:	(38.71)		(0.49)	(5.74)
Access door 133AL				
Potable Water				
Ground Service	12.5	0.51		1.75
Panel:	(41.01)	(1.67)		(5.74)
Access door 192NB				

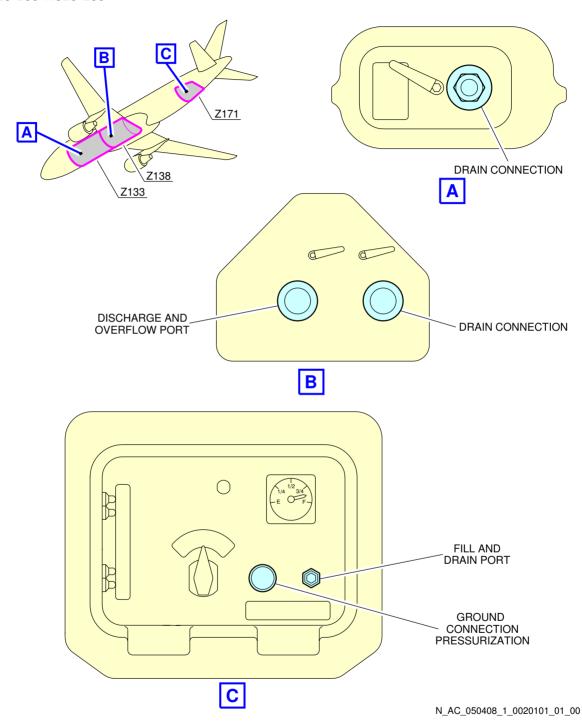
 ${\underline{\sf NOTE}}$ : Distances are approximate

- 3. Technical Specifications
  - A. Connectors:
    - (1) On the potable ground service panel (Access Door 171AL)
      - Fill/Drain Nipple 3/4 in (ISO 17775).
      - One ground pressurization connector.
    - (2) On drain panel (Access Door 133AL)
      - Drain Nipple 3/4 in (ISO 17775)



- B. Usable capacity:
  - Standard configuration one tank:200 I (52.83 US gal)
- C. Filling pressure:
  - 3.45 bar (50 psi).
- D. Typical flow rate:
  - 50 I/min (13.21 US gal/min).

# \*\*ON A/C A320-100 A320-200



 $\begin{array}{c} \hbox{Ground Service Connections} \\ \hbox{Potable Water Ground Drain Panel} \\ \hbox{FIGURE 1} \end{array}$ 

#### 5-4-9 Oil System

### \*\*ON A/C A320-100 A320-200

#### Oil System

1. Engine Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-9-991-001-A): One gravity filling cap and one pressure filling connection per engine.

ACCESS	AFT OF NOSE	CENTE	OM AIRCRAFT ERLINE	MEAN HEIGHT FROM GROUND
ACCESS	m (ft)	ENGINE 1 (LH) m (ft)	ENGINE 2 (RH) m (ft)	m (ft)
Engine Oil Gravity Filling Cap: Access door: 437BL (LH), 447BL (RH)	13.12	6.63	4.82	1.46
	(43.04)	(21.75)	(15.81)	(4.79)
Engine Oil Pressure Filling Port:	13	6.49	4.74	1.42
	(42.65)	(21.29)	(15.55)	(4.66)

NOTE: Distances are approximate

A. Tank capacity:

Full level: 19.6 I (5.18 US gal)Usable: 9.46 I (2.50 US gal)

B. Maximum delivery pressure required: 25 psi (1.72 bar)

Maximum delivery flow required: 180 l/h (47.55 US gal/h)

IDG Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-9-991-002-A):
 One pressure filling connection per engine: OMP 2506-18 plus one connection overflow: OMP 2505-18.

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE ENGINE 2 (RH) m (ft)	MEAN HEIGHT FROM GROUND m (ft)
IDG Oil Pressure Filling Connection: Access door 438DR (LH), 448DR (RH)	12.2 (40.03)	6.9 (22.64)	5.52 (18.11)	0.68 (2.23)

**NOTE**: Distances are approximate

- A. Tank capacity: 5 I (1.32 US gal)
- B. Delivery pressure required: 5 to 40 psi (0.34 to 2.76 bar) at the IDG inlet.
- 3. Starter Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-9-991-003-A: One gravity filling cap per engine.

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE ENGINE 2 (RH) m (ft)	MEAN HEIGHT FROM GROUND m (ft)
Starter Oil Filling Connection:	12.7	5.3	6.2	0.76
	(41.67)	(17.39)	(20.34)	(2.49)

**NOTE**: Distances are approximate

A. Tank capacity: 0.8 I (0.21 US gal)

4. Engine Oil Replenishment for IAE V2500 Series Engine (See FIGURE 5-4-9-991-004-B): One gravity filling cap per engine.

A C C T C C	AFT OF NOSE		OM AIRCRAFT ERLINE	MEAN HEIGHT
ACCESS	m (ft)	ENGINE 1 (LH) m (ft)	ENGINE 2 (RH) m (ft)	FROM GROUND m (ft)
Engine Oil Gravity Filling Cap: Access door 437BL (LH), 447BL (RH)	12.24 (40.16)	6.56 (21.52)	4.92 (16.14)	1.22 (4)

NOTE: Distances are approximate

A. Tank capacity:

Full level: 28 I (7.4 US gal)Usable: 23.50 I (6.21 US gal)

1. IDG Oil Replenishment for IAE V2500 Series Engine:

One pressure filling connection per engine: OMP 2506-2 plus one overflow connection: OMP 2505-2.

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE ENGINE 2 (RH) m (ft)	MEAN HEIGHT FROM GROUND m (ft)
IDG Oil Pressure	12.8	5.42	6.04	0.8
Filling Connection:	(41.99)	(17.78)	(19.82)	(2.62)

**NOTE**: Distances are approximate

A. Tank capacity: 4.1 I (1.08 US gal)

5. Starter Oil Replenishment for IAE V2500 Series Engine (See FIGURE 5-4-9-991-006-B): One gravity filling cap per engine.

ACCESS	AFT OF NOSE m (ft)		OM AIRCRAFT ERLINE ENGINE 2 (RH) m (ft)	MEAN HEIGHT FROM GROUND m (ft)
Starter Oil Filling	15.4	5.3	6.14	0.75
Connection:	(50.52)	(17.39)	(20.14)	(2.46)

**NOTE**: Distances are approximate

A. Tank capacity: 0.35 I (0.09 US gal)

6. APU Oil System (See FIGURE 5-4-9-991-007-A): APU oil gravity filling cap.

	AFT OF NOSE m (ft)	FROM AIRPLANE CENTERLINE (LEFT HAND) m (ft)	MEAN HEIGHT FROM GROUND m (ft)
GTCP 36-300	35.49	0.3	4.83
	(116.44)	(0.98)	(15.85)
APS 3200	35.49	0.3	4.78
	(116.44)	(0.98)	(15.68)
131-9	35.39	0.35	4.32
	(116.11)	(1.15)	(14.17)

NOTE: Distances are approximate

A. Tank capacity (usable):

- APU type GTCP 36-300: 6.20 I (1.64 US gal)

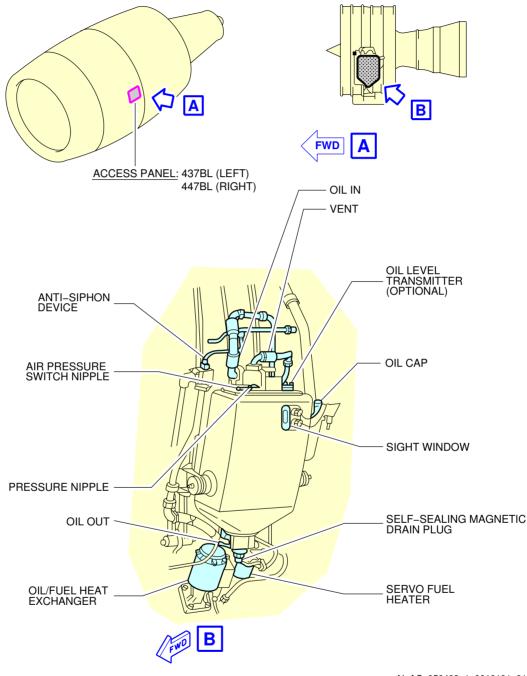
- APU type APS 3200: 5.40 I (1.43 US gal)

# **GA320**

# AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

- APU type 131-9: 6.25 I (1.65 US gal)

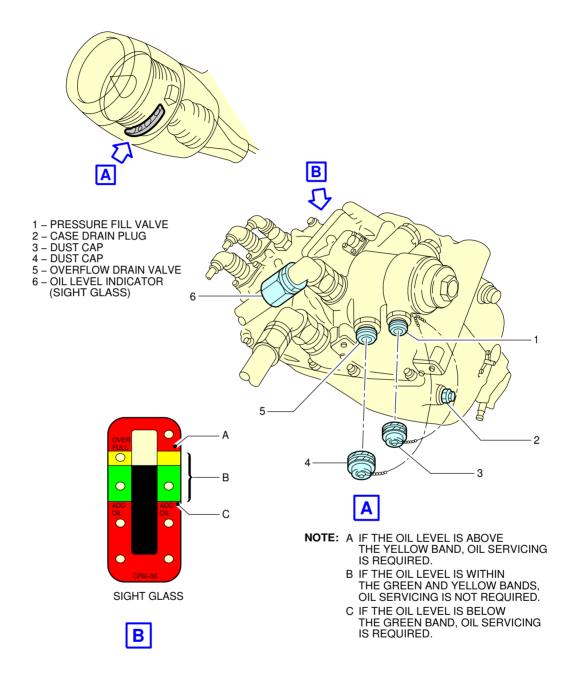
### \*\*ON A/C A320-100 A320-200



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 $\begin{array}{c} \hbox{Ground Service Connections} \\ \hbox{Engine Oil Tank - CFM56 Series Engine} \\ \hbox{FIGURE 1} \end{array}$ 

### \*\*ON A/C A320-100 A320-200

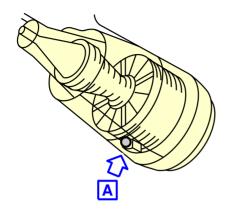


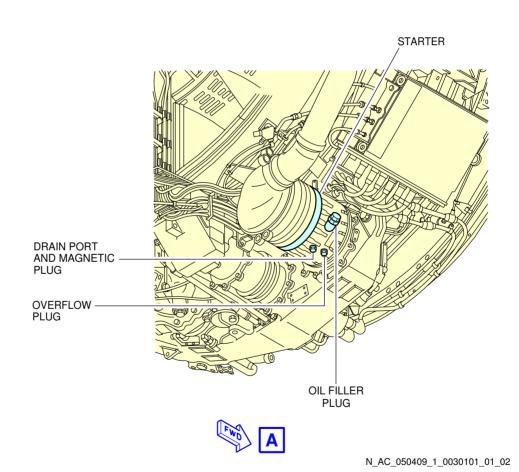
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Ground Service Connections

IDG Oil Tank – CFM56 Series Engine
FIGURE 2

### \*\*ON A/C A320-100 A320-200

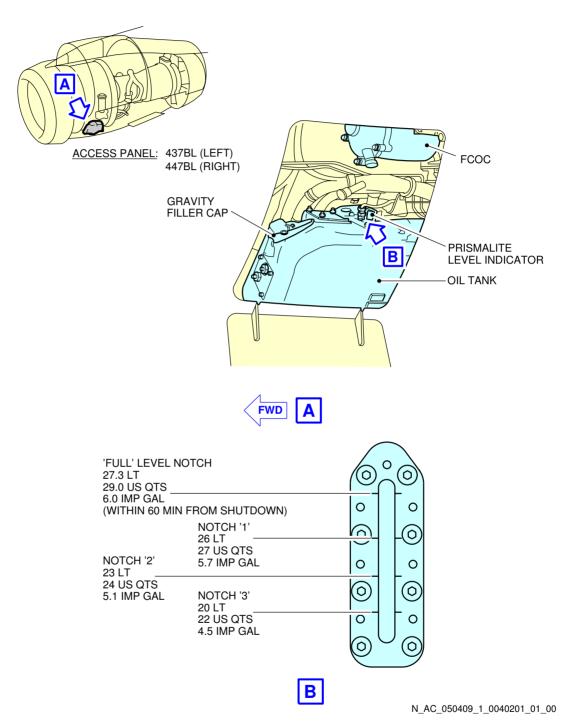




Ground Service Connections Starter Oil Tank – CFM56 Series Engine FIGURE 3



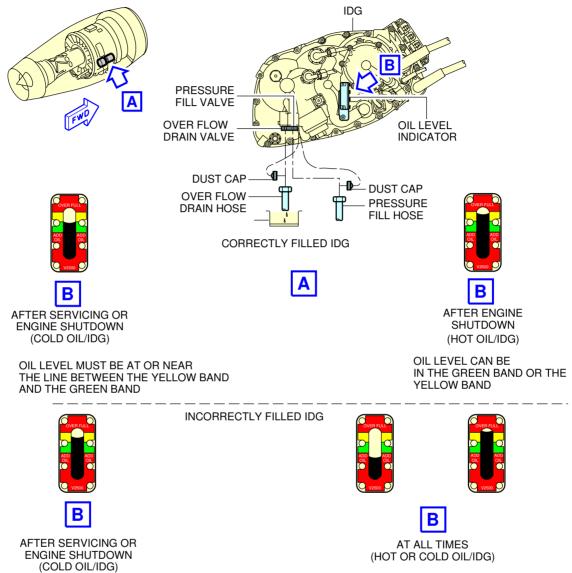
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Ground Service Connections
Engine Oil Tank – IAE V2500 Series Engine
FIGURE 4



### \*\*ON A/C A320-100 A320-200



THE OIL LEVEL MUST NOT BE IN THE YELLOW BAND BUT IT CAN BE IMMEDIATELY ABOVE THE LOWER LIMIT OF THE YELLOW BAND BECAUSE OF THE AIRCRAFT RAMP ANGLE

DO THE IDG SERVICING TO GET THE CORRECT IDG OIL LEVEL.

THE OIL LEVEL MUST NOT BE IN THE RED BAND

PERFORM IDG OIL SERVICING
TO GET THE CORRECT IDG OIL LEVEL.
DO NOT USE THE OVERFLOW DRAIN HOSE
TO GET THE CORRECT IDG OIL LEVEL.

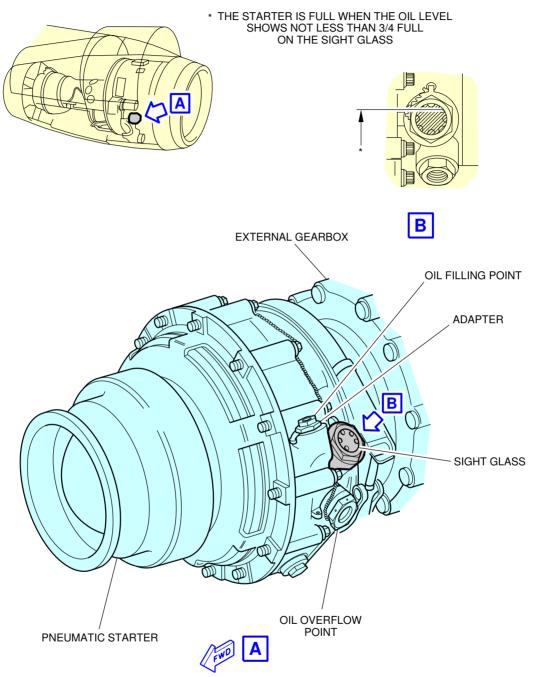
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Ground Service Connections

IDG Oil Tank – IAE V2500 Series Engine
FIGURE 5



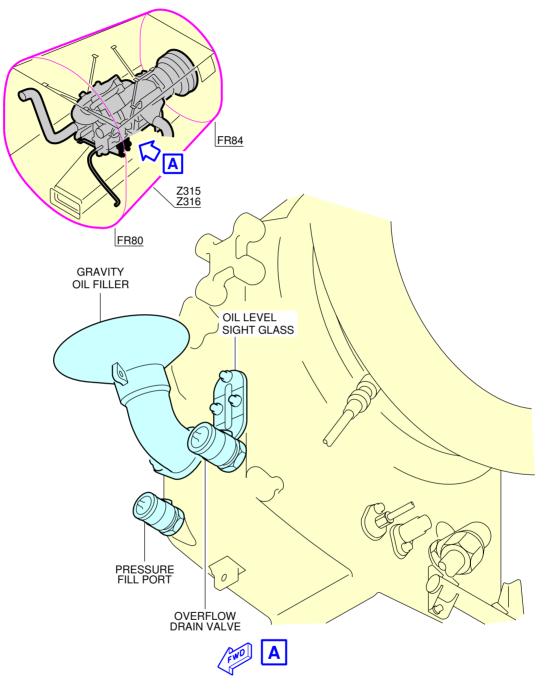
### \*\*ON A/C A320-100 A320-200



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Ground Service Connections
Starter Oil Tank – IAE V2500 Series Engine
FIGURE 6

# \*\*ON A/C A320-100 A320-200



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Ground Service Connections APU Oil Tank FIGURE 7

### 5-4-10 Vacuum Toilet System

\*\*ON A/C A320-100 A320-200

### Vacuum Toilet System

1. Vacuum Toilet System.

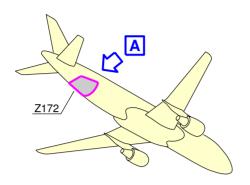
ACCESS AFT OF NO		POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND
ACCESS	m (ft)	R SIDE m (ft)	L SIDE m (ft)	m (ft)
Waste Water Ground Service Panel: Access door 172AR	31.3 (102.69)	0.8 (2.62)		2.8 (9.18)

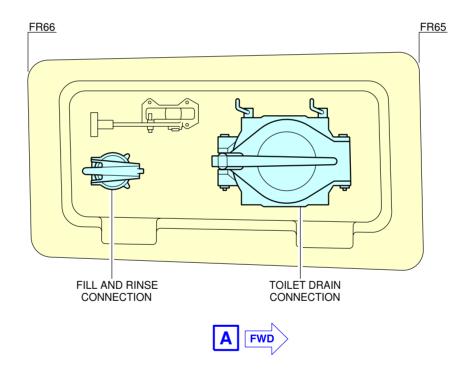
**NOTE**: Distances are approximate

- 2. Technical Specifications
  - A. Connectors:
    - Draining: 4 in (ISO 17775).
    - Flushing and filling: 1 in (ISO 17775).
  - B. Usable waste tank capacity:
    - Standard configuration on tank: 177 I (30.91 US gal).
  - C. Waste tank Rinsing:
    - Operating pressure: 3.45 bar (50 psi).
  - D. Waste tank Precharge:
    - 10 I (2.64 US gal).



# \*\*ON A/C A320-100 A320-200





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Ground Service Connections Waste Water Ground Service Panel FIGURE 1

5-5-0 Engine Starting Pneumatic Requirements

\*\*ON A/C A320-100 A320-200

Engine Starting Pneumatic Requirements

1. Engine Starting Pneumatic Requirements.

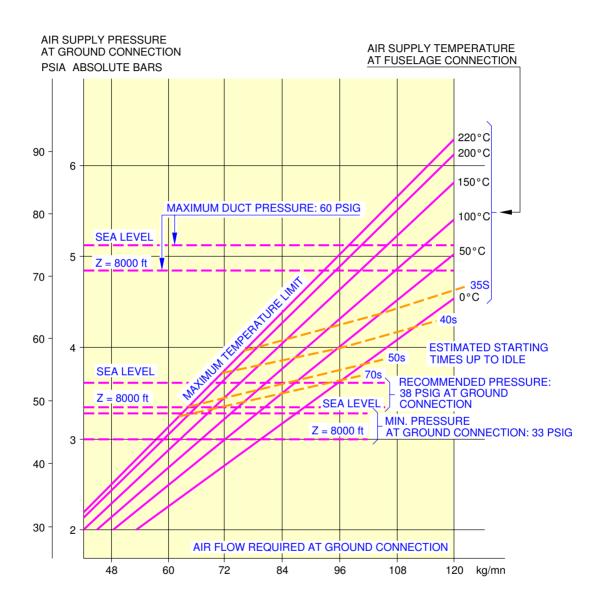
### 5-5-1 Low Temperatures

\*\*ON A/C A320-100 A320-200

Low Temperature -40 °C (-40 °F)

1. This section provides the engine starting pneumatic requirements for a temperature of -40 °C (-40 °F).

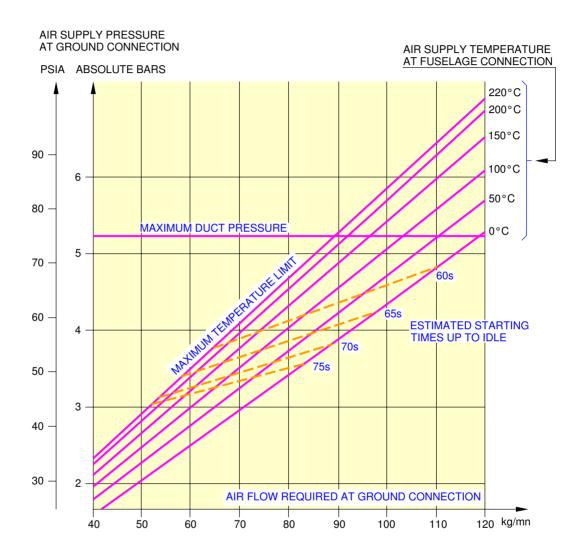
### \*\*ON A/C A320-100 A320-200



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Engine Starting Pneumatic Requirements Temperature -40  $^{\circ}$  C (-40  $^{\circ}$  F) – CFM56 series engine FIGURE 1

### \*\*ON A/C A320-100 A320-200



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Engine Starting Pneumatic Requirements
Temperature -40 ° C (-40 ° F) – IAE V2500 series engine
FIGURE 2

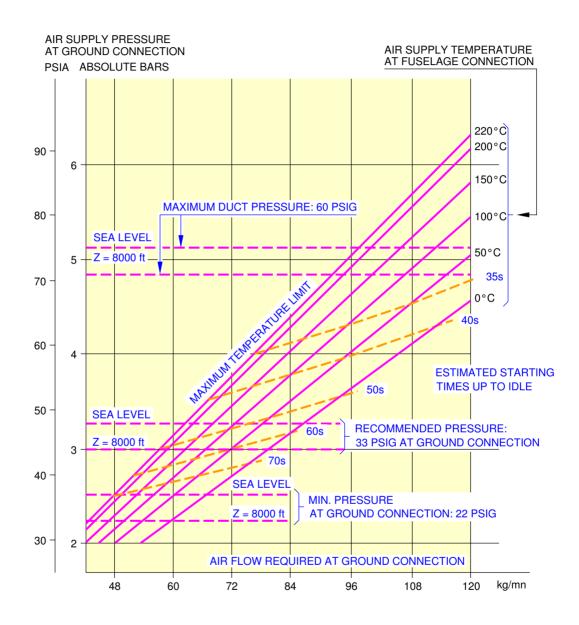
### 5-5-2 Ambient Temperatures

\*\*ON A/C A320-100 A320-200

Ambient Temperature +15 °C (+59 °F)

1. This section provides the engine starting pneumatic requirements for a temperature of  $+15\,^{\circ}$  C  $(+59\,^{\circ}$  F).

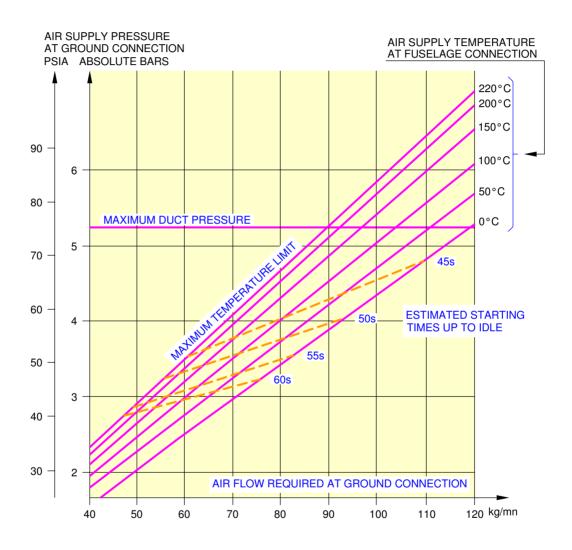
### \*\*ON A/C A320-100 A320-200



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Engine Starting Pneumatic Requirements Temperature  $+15\,^{\circ}$  C  $(+59\,^{\circ}$  F) – CFM56 series engine FIGURE 1

### \*\*ON A/C A320-100 A320-200



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Engine Starting Pneumatic Requirements Temperature  $+15\,^{\circ}$  C  $(+59\,^{\circ}$  F) – IAE V2500 series engine FIGURE 2

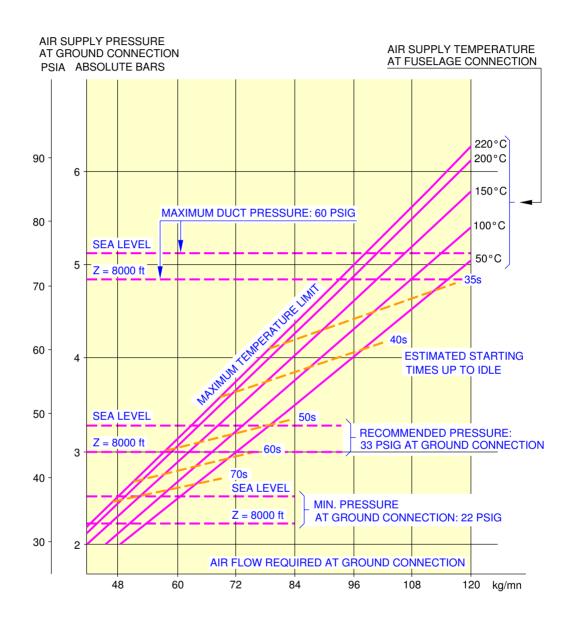
### 5-5-3 High Temperatures

\*\*ON A/C A320-100 A320-200

High Temperature +50 °C (+122 °F) and +55 °C (+131 °F)

- 1. This section provides the engine starting pneumatic requirements for a temperature upper:
  - +50°C (+122°F) IAE V2500
  - +55 ° C (+131 ° F) CFM56

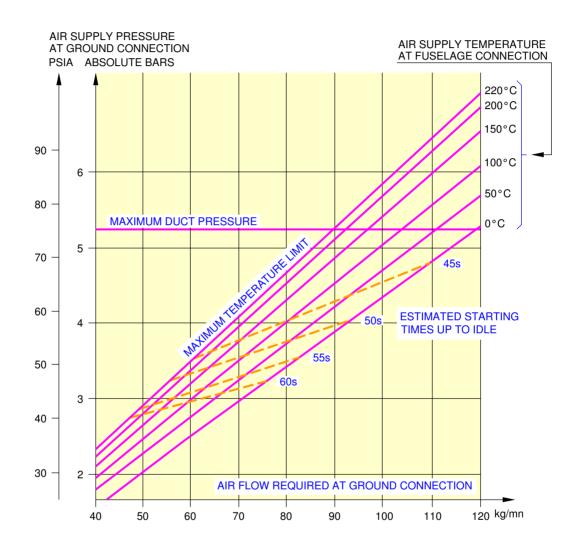
### \*\*ON A/C A320-100 A320-200



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Engine Starting Pneumatic Requirements Temperature  $+55\degree C \ (+131\degree F)$  – CFM56 series engine FIGURE 1

### \*\*ON A/C A320-100 A320-200



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Engine Starting Pneumatic Requirements Temperature  $+50\,^{\circ}$  C ( $+122\,^{\circ}$  F) – IAE V2500 series engine FIGURE 2

### 5-6-0 Ground Pneumatic Power Requirements

\*\*ON A/C A320-100 A320-200

# **Ground Pneumatic Power Requirements**

1. Ground Pneumatic Power Requirements.

	FRESH A	PULL UP	PULL DOWN		
TOTAL		CABIN		TIME T	TIME T
(kg/s)	(lb/s)	(kg/s)	(lb/s)	(min.)	(min.)
0.5	1.10	0.433	0.955	after 60 min. 14.1°C	-
0.6	1.32	0.519	1.144	after 60 min. 18.2°C	_
0.7	1.54	0.606	1.336	57.5	_
0.8	1.76	0.692	1.526	49.0	after 60 min. 29°C
0.9	1.98	0.779	1.717	42.5	after 60 min. 27.4°C
1.0	2.20	0.865	1.907	37.0	48.0
1.1	2.43	0.952	2.099	32.0	37.0
1.2	2.65	1.038	2.288	29.5	29.5
1.3	2.87	1.125	2.480	26.5	24.0
1.4	3.09	1.211	2.670	24.0	19.5
1.5	3.31	1.298	2.862	21.5	16.5

NOTE: Data for unstabilized conditions see 5-6-1 and 5-6-2.

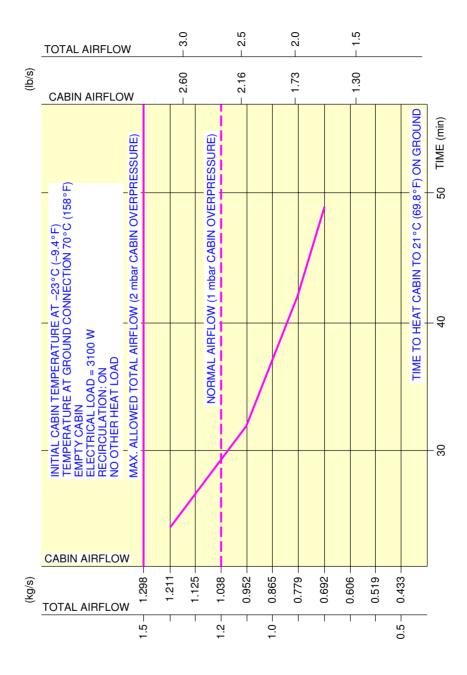
5-6-1 Heating

\*\*ON A/C A320-100 A320-200

# **Heating**

1. This section provides the ground pneumatic power requirements heating.

### \*\*ON A/C A320-100 A320-200



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Ground Pneumatic Power Requirements
Heating
FIGURE 1

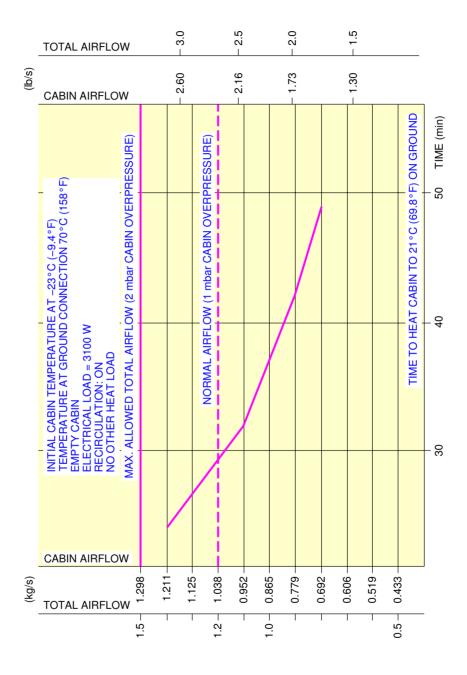
5-6-2 Cooling

\*\*ON A/C A320-100 A320-200

# Cooling

1. This section provides the ground pneumatic power requirements cooling.

### \*\*ON A/C A320-100 A320-200



N\_AC\_050602\_1\_0030101\_01\_01

Ground Pneumatic Power Requirements
Cooling
FIGURE 1

### 5-7-0 Preconditioned Airflow Requirements

# \*\*ON A/C A320-100 A320-200

# Preconditioned Airflow Requirements

- 1. This section gives the preconditioned airflow requirements for cabin air conditioning.
  - A. Preconditioned Airflow Requirements.

FRESH AIRFLOW				CURVE 1	
TOTAL		CABIN		T FL	
(kg/s)	(lb/s)	(kg/s)	(lb/s)	( ° C)	(°F)
0.5	1.10	0.433	0.955	-42.7	-44.9
0.6	1.32	0.519	1.144	-31.1	-24.0
0.7	1.54	0.606	1.336	-22.7	-8.9
0.8	1.76	0.692	1.526	-16.5	2.3
0.9	1.98	0.779	1.717	-11.6	11.1
1.0	2.20	0.865	1.907	-7.7	18.1
1.1	2.43	0.952	2.099	-4.5	23.9
1.2	2.65	1.038	2.288	-1.9	28.6
1.3	2.87	1.125	2.480	0.4	32.7
1.4	3.09	1.211	2.670	2.3	36.1
1.5	3.31	1.298	2.862	4.0	39.2

NOTE: Data for stabilized conditions see 5-7-0.

B. Preconditioned Airflow Requirements.

FRESH AIRFLOW				CURVE 2	
TOTAL		CABIN		T FL	
(kg/s)	(lb/s)	(kg/s)	(lb/s)	(°C)	(°F)
0.5	1.10	0.433	0.955	27.8	82.0
0.6	1.32	0.519	1.144	26.6	79.9
0.7	1.54	0.606	1.336	25.7	78.3
0.8	1.76	0.692	1.526	25.1	77.2
0.9	1.98	0.779	1.717	24.6	76.3
1.0	2.20	0.865	1.907	24.2	75.6
1.1	2.43	0.952	2.099	23.8	74.8
1.2	2.65	1.038	2.288	23.5	74.3
1.3	2.87	1.125	2.480	23.3	73.9
1.4	3.09	1.211	2.670	23.1	73.6

FRESH AIRFLOW				CURVE 2		
TOTAL CABIN			T FL			
		(lb/s)	(°C)	(°F)		
1.5	3.31	1.298	2.862	22.9	73.2	

 $\underline{\mathsf{NOTE}}$ : Data for stabilized conditions see 5-7-0.

C. Preconditioned Airflow Requirements.

FRESH AIRFLOW				CURVE 3	
TOTAL		CABIN		T FL	
(kg/s)	(lb/s)	(kg/s)	(lb/s)	(°C)	(°F)
0.5	1.10	0.433	0.955	32.2	90.0
0.6	1.32	0.519	1.144	30.2	86.4
0.7	1.54	0.606	1.336	28.8	83.8
0.8	1.76	0.692	1.526	27.8	82.0
0.9	1.98	0.779	1.717	26.9	80.4
1.0	2.20	0.865	1.907	26.3	79.3
1.1	2.43	0.952	2.099	25.7	78.3
1.2	2.65	1.038	2.288	25.3	77.5
1.3	2.87	1.125	2.480	24.9	76.8
1.4	3.09	1.211	2.670	24.6	76.3
1.5	3.31	1.298	2.862	24.3	75.7

 $\underline{\mathsf{NOTE}}$  : Data for stabilized conditions see 5-7-0.

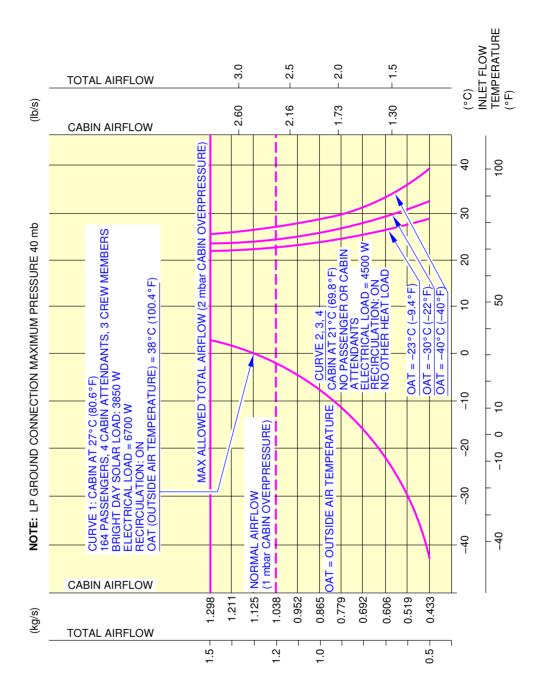
D. Preconditioned Airflow Requirements.

FRESH AIRFLOW				CURVE 4	
TOTAL		CABIN		T FL	
(kg/s)	(lb/s)	(kg/s)	(lb/s)	( ° C)	(°F)
0.5	1.10	0.433	0.955	38.9	102.0
0.6	1.32	0.519	1.144	35.8	96.4
0.7	1.54	0.606	1.336	33.6	92.5
0.8	1.76	0.692	1.526	31.9	89.4
0.9	1.98	0.779	1.717	30.6	87.1
1.0	2.20	0.865	1.907	29.6	85.3
1.1	2.43	0.952	2.099	28.7	83.7
1.2	2.65	1.038	2.288	28.0	82.4
1.3	2.87	1.125	2.480	27.4	81.3
1.4	3.09	1.211	2.670	26.9	80.4

FRESH AIRFLOW				CURVE 4		
TOTAL CABIN			T FL			
(kg/s)	(kg/s) $(lb/s)$ $(kg/s)$ $(lb/s)$		(°C)	(°F)		
1.5	3.31	1.298	2.862	26.4	79.5	

<u>NOTE</u>: Data for stabilized conditions see 5-7-0.

### \*\*ON A/C A320-100 A320-200



N\_AC\_050700\_1\_0030101\_01\_01

Preconditioned Airflow Requirements FIGURE 1

#### 5-8-0 Ground Towing Requirements

### \*\*ON A/C A320-100 A320-200

## **Ground Towing Requirements**

#### 1. General

This section provides information on aircraft towing.

This aircraft is designed with means for conventional or towbarless towing.

Information/procedures can be found for both in chapter 9 of the Aircraft Maintenance Manual.

Status on towbarless towing equipment qualification can be found in SIL 09-002.

It is possible to tow or push the aircraft, at maximum ramp weight with engines at zero or up to idle thrust, using a tow bar attached to the nose gear leg (refer to AMM chap 9 for conditions and limitations).

One tow bar fitting is installed at the front of the leg.

The main landing gears have attachment points for towing or debogging (for details, refer to chapter 07 of the Aircraft Recovery Manual).

- A. The first part of this section shows the chart to determine the draw bar pull and tow tractor mass requirements as function of the following physical characteristics:
  - Aircraft weight
  - Number of engines at idle
  - Slope.

The chart is based on the engine type with the highest idle thrust level.

B. The second part of this section supplies guidelines for the tow bar.

The aircraft tow bar shall respect the following norms:

- SAE AS 1614, "Main Line Aircraft Tow Bar Attach Fitting Interface"
- SAE ARP1915 Revision C, "Aircraft Tow Bar"
- ISO 8267-1, "Aircraft Tow bar attachment fitting Interface requirements Part 1: Main line aircraft"
- ISO 9667, "Aircraft ground support equipment Tow bars"
- IATA Airport Handling Manual AHM 958, "Functional Specification for an Aircraft Tow bar".

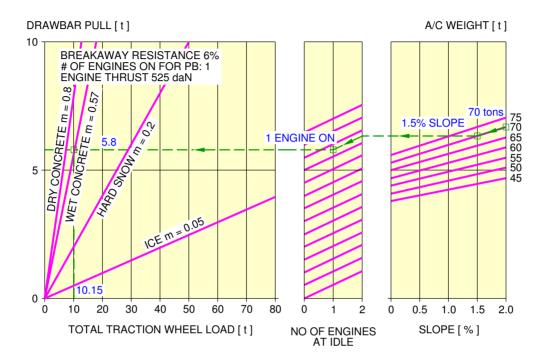
A conventional type tow bar is required which should be equipped with a damping system to protect the nose gear against jerks and with towing shear pins:

- A traction shear pin calibrated at 9425 daN (21188 lbf)
- A torsion pin calibrated at 826 m.daN (7311 lbf.in).

The towing head is designed according to SAE/AS 1614 (issue C) cat. I.

<u>NOTE</u>: Information on aircraft towing procedures and corresponding aircraft limitations are given in chapter 9 on the Aircraft Maintenance Manual.

### \*\*ON A/C A320-100 A320-200



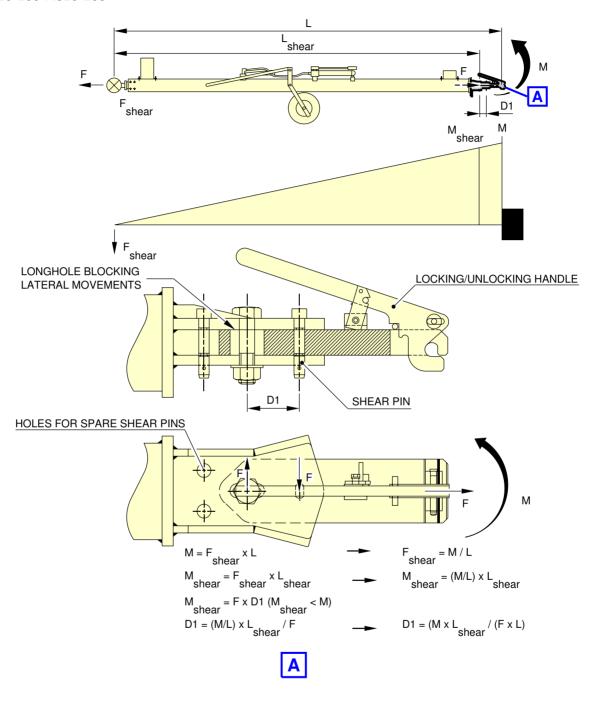
EXAMPLE HOW TO DETERMINE THE MASS REQUIREMENT TO TOW A A320 AT 70 t, AT 1.5% SLOPE, 1 ENGINE AT IDLE AND FOR WET TARMAC CONDITIONS:

- ON THE RIGHT HAND SIDE OF THE GRAPH, CHOOSE THE RELEVANT AIRCRAFT WEIGHT (70 t)
- FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUIRED SLOPE PERCENTAGE (1.5%)
- FROM THE POINT OBTAINED DRAW A STRAIGHT HORIZONTAL LINE UNTIL NO OF ENGINES AT IDLE = 2
- FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUESTED NUMBER OF ENGINES (1)
   FROM THIS POINT DRAW A STRAIGHT HORIZONTAL LINE TO THE DRAWBAR PULL AXIS
- THE Y-COORDINATE OBTAINED IS THE NECESSARY DRAWBAR PULL FOR THE TRACTOR (5.8 t)
- SEARCH THE INTERSECTION WITH THE "WET CONCRETE" LINE. THE OBTAINED X-COORDINATE IS THE RECOMMENDED MINIMUM TRACTOR WEIGHT (10.1 t)

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**Ground Towing Requirements** FIGURE 1

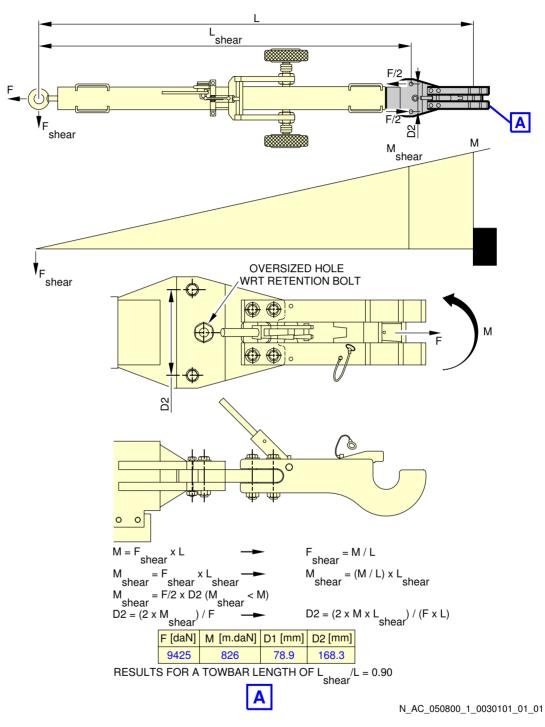
### \*\*ON A/C A320-100 A320-200



N\_AC\_050800\_1\_0020101\_01\_03

Ground Towing Requirements Typical Tow Bar Configuration 1 FIGURE 2

## \*\*ON A/C A320-100 A320-200



Ground Towing Requirements Typical Tow Bar Configuration 2 FIGURE 3

### **OPERATING CONDITIONS**

## 6-1-0 Engine Exhaust Velocities and Temperatures

\*\*ON A/C A320-100 A320-200

### Engine Exhaust Velocities and Temperatures

1. General

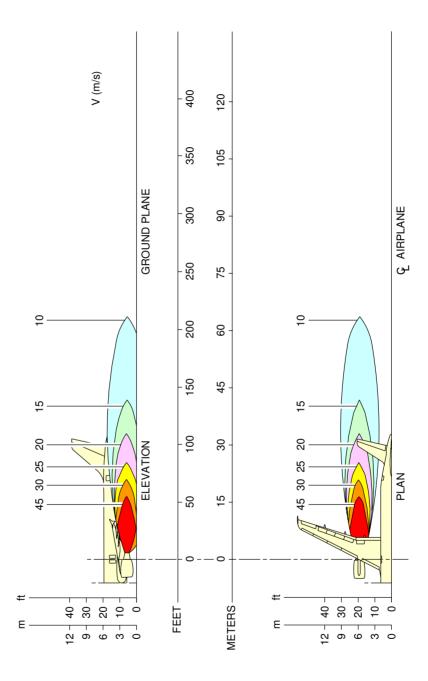
This section shows the estimated engine exhaust efflux velocities and temperatures contours for Ground Idle, Breakaway, Maximum Takeoff conditions.

6-1-1 Engine Exhaust Velocities Contours - Ground Idle Power

\*\*ON A/C A320-100 A320-200

Engine Exhaust Velocities Contours - Ground Idle Power

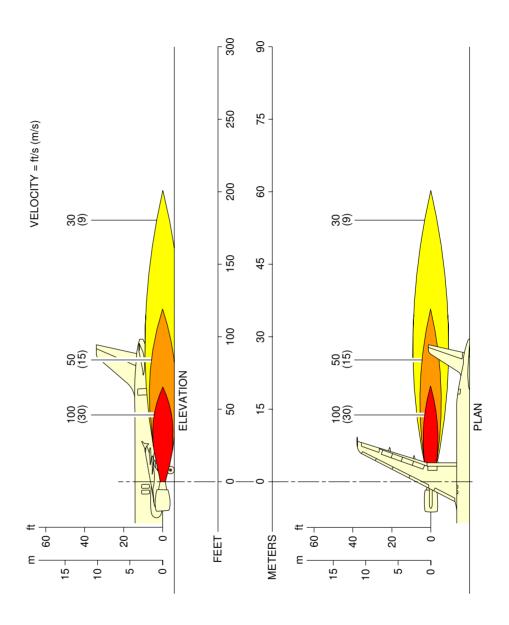
1. This section gives engine exhaust velocities contours at ground idle power.



N\_AC\_060101\_1\_0050101\_01\_00

Engine Exhaust Velocities Ground Idle Power – CFM56 series engine FIGURE 1

# \*\*ON A/C A320-100 A320-200



N\_AC\_060101\_1\_0060101\_01\_00

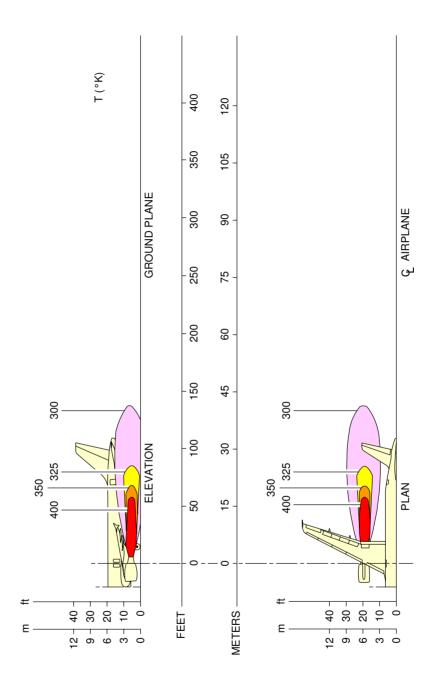
Engine Exhaust Velocities Ground Idle Power – IAE V2500 series engine FIGURE 2

6-1-2 Engine Exhaust Temperatures Contours - Ground Idle Power

\*\*ON A/C A320-100 A320-200

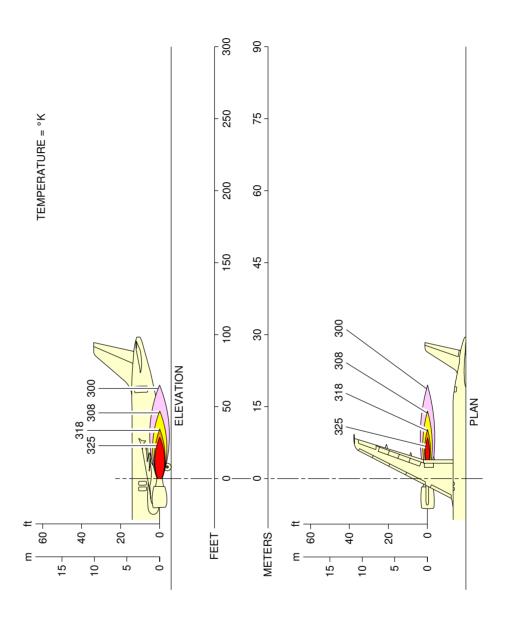
Engine Exhaust Temperatures Contours - Ground Idle Power

1. This section gives engine exhaust temperatures contours at ground idle power.



N\_AC\_060102\_1\_0050101\_01\_00

Engine Exhaust Temperatures Ground Idle Power – CFM56 series engine FIGURE 1



N\_AC\_060102\_1\_0060101\_01\_00

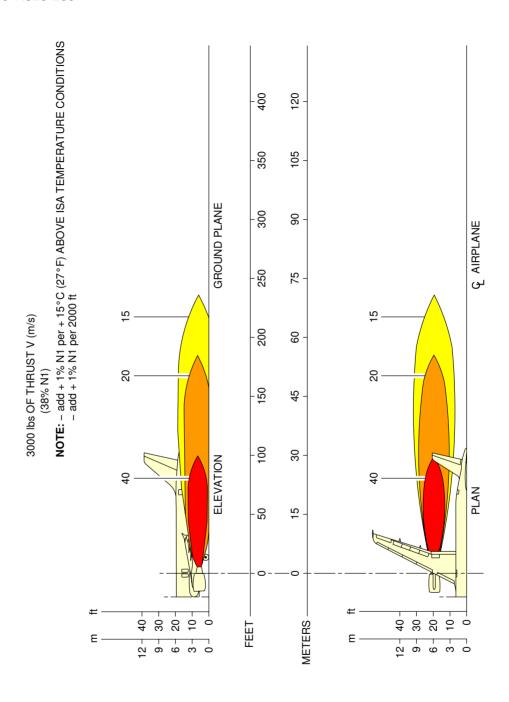
Engine Exhaust Temperatures Ground Idle Power – IAE V2500 series engine FIGURE 2

6-1-3 Engine Exhaust Velocities Contours - Breakaway Power

\*\*ON A/C A320-100 A320-200

Engine Exhaust Velocities Contours - Breakaway Power

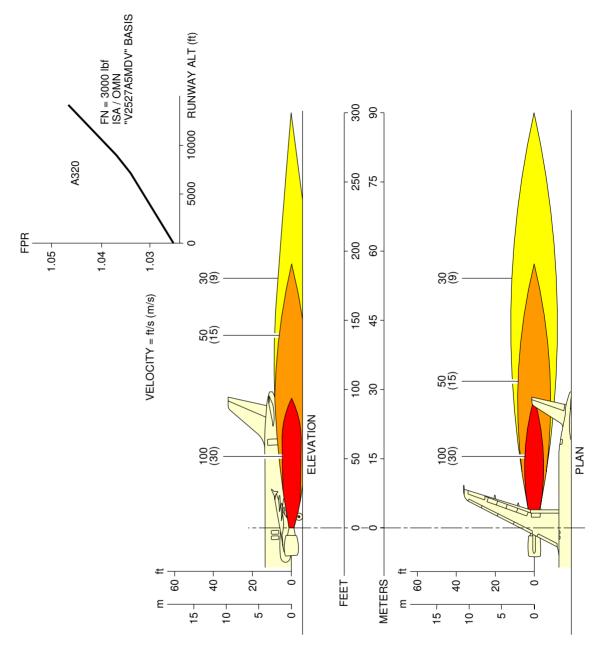
1. This section gives engine exhaust velocities contours at breakaway power.



 $N\_AC\_060103\_1\_0030101\_01\_00$ 

Engine Exhaust Velocities Breakaway Power – CFM56 series engine FIGURE 1

# \*\*ON A/C A320-100 A320-200



N\_AC\_060103\_1\_0040101\_01\_00

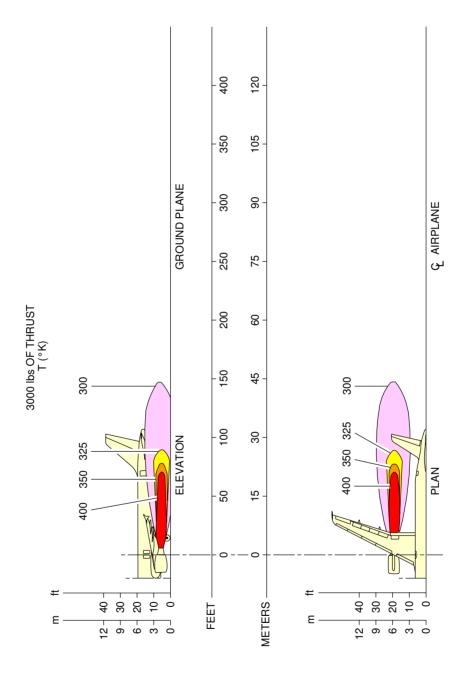
Engine Exhaust Velocities Breakaway Power – IAE V2500 series engine FIGURE 2

6-1-4 Engine Exhaust Temperatures Contours - Breakaway Power

\*\*ON A/C A320-100 A320-200

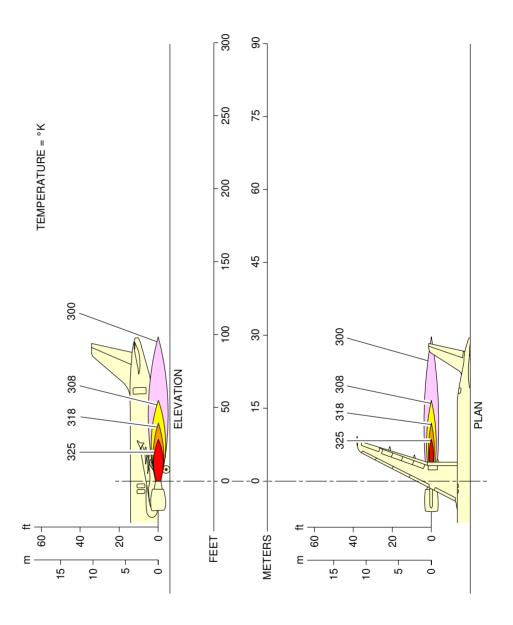
Engine Exhaust Temperatures Contours - Breakaway Power

1. This section gives engine exhaust temperatures contours at breakaway power.



N\_AC\_060104\_1\_0030101\_01\_00

Engine Exhaust Temperatures Breakaway Power – CFM56 series engine FIGURE 1



N\_AC\_060104\_1\_0040101\_01\_00

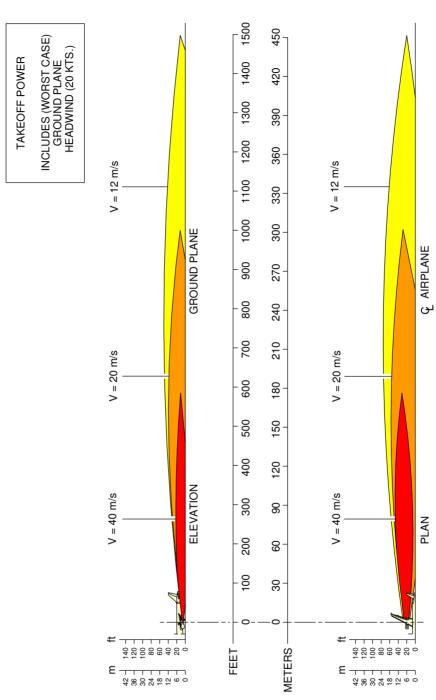
Engine Exhaust Temperatures
Breakaway Power – IAE V2500 series engine
FIGURE 2

6-1-5 Engine Exhaust Velocities Contours - Takeoff Power

\*\*ON A/C A320-100 A320-200

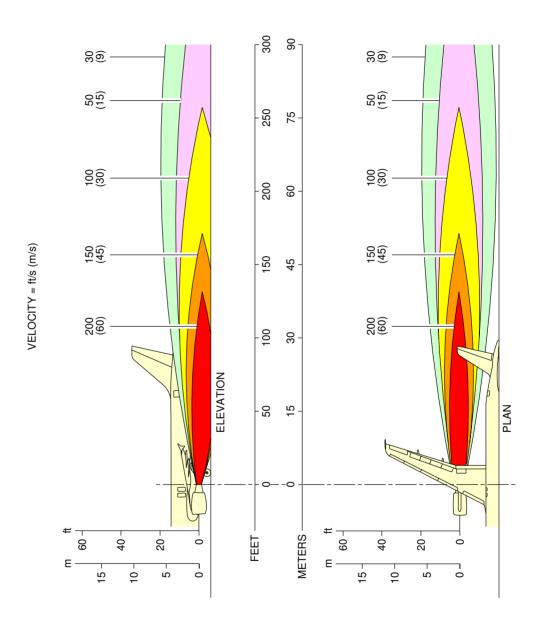
Engine Exhaust Velocities Contours - Takeoff Power

1. This section gives engine exhaust velocities contours at takeoff power.



N\_AC\_060105\_1\_0050101\_01\_00

Engine Exhaust Velocities
Takeoff Power – CFM56 series engine
FIGURE 1



N\_AC\_060105\_1\_0060101\_01\_01

Engine Exhaust Velocities
Takeoff Power – IAE V2500 series engine
FIGURE 2

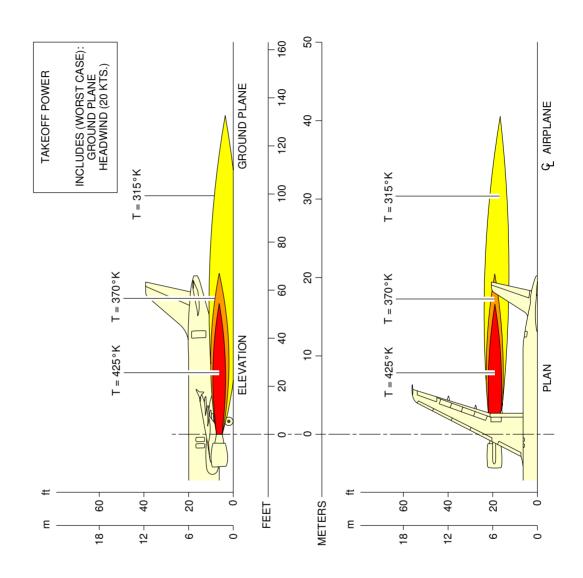
6-1-6 Engine Exhaust Temperatures Contours - Takeoff Power

\*\*ON A/C A320-100 A320-200

Engine Exhaust Temperatures Contours - Takeoff Power

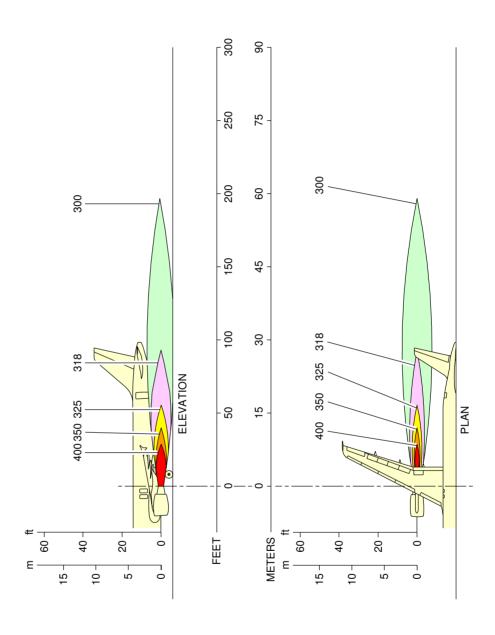
1. This section gives engine exhaust temperatures contours at takeoff power.

# \*\*ON A/C A320-100 A320-200



N\_AC\_060106\_1\_0050101\_01\_00

Engine Exhaust Temperatures
Takeoff Power – CFM56 series engine
FIGURE 1



N\_AC\_060106\_1\_0060101\_01\_00

Engine Exhaust Temperatures
Takeoff Power – IAE V2500 series engine
FIGURE 2

## 6-2-0 Airport and Community Noise

\*\*ON A/C A320-100 A320-200

# Airport and Community Noise

1. Airport and Community Noise Data

This section gives data concerning engine maintenance run-up noise to permit evaluation of possible attenuation requirements.

#### 6-2-1 Noise Data

### \*\*ON A/C A320-100 A320-200

#### Noise Data

- 1. Noise Data for CFM56-5A series engine
  - A. Description of test conditions:

The arc of circle (radius = 60 m (196.85 ft)), with microphones 1.2 m (3.94 ft) high, is centered on the position of the noise reference point.

A.P.U.: off; E.C.S.: Packs off.

- B. Engine parameters: 2 engines running
- C. Meteorological data:

The meteorological parameters measured 1.6 m (5.25 ft) from the ground on the day of test were as follows:

- Temperature: 3 °C (37 °F)

- Relative humidity: 66%

- Atmospheric pressure: 1016 hPa

Wind speed: Negligible

- No rain

- 2. Noise Data for CFM56-5B series engine
  - A. Description of test conditions:

The arc of circle (radius = 60 m (196.85 ft)), with microphones 1.2 m (3.94 ft) high, is centered on the position of the noise reference point.

A.P.U.: off; E.C.S.: Packs off.

- B. Engine parameters: 2 engines running
- C. Meteorological data:

The meteorological parameters measured 1.6 m (5.25 ft) from the ground on the day of test were as follows:

Temperature: 22°C (72°F)

- Relative humidity: 42%

- Atmospheric pressure: 1003 hPa

Wind speed: Negligible

- No rain

- 3. Noise Data for IAE V2500 series engine
  - A. Description of test conditions:



The arc of circle (radius = 60 m (196.85 ft)), with microphones 1.2 m (3.94 ft) high, is centered on the position of the noise reference point.

A.P.U.: off; E.C.S.: Packs off.

- B. Engine parameters: 2 engines running
- C. Meteorological data:

The meteorological parameters measured  $1.6\ m\ (5.25\ ft)$  from the ground on the day of test were as follows:

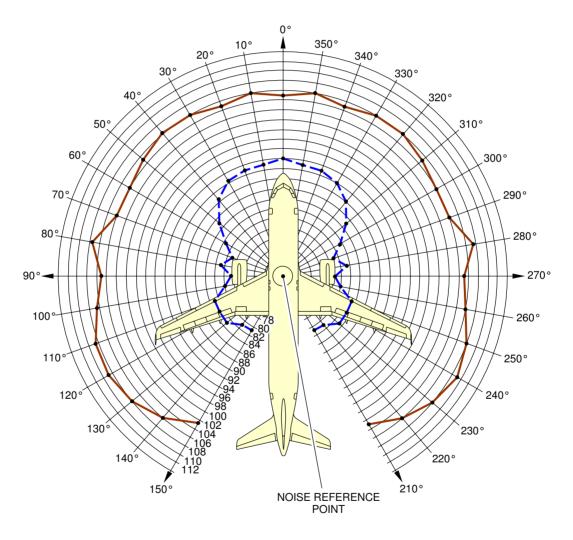
Temperature: 12 ° C (54 ° F)Relative humidity: 62.5%

- Atmospheric pressure: 1000 hPa

Wind speed: Negligible

- No rain

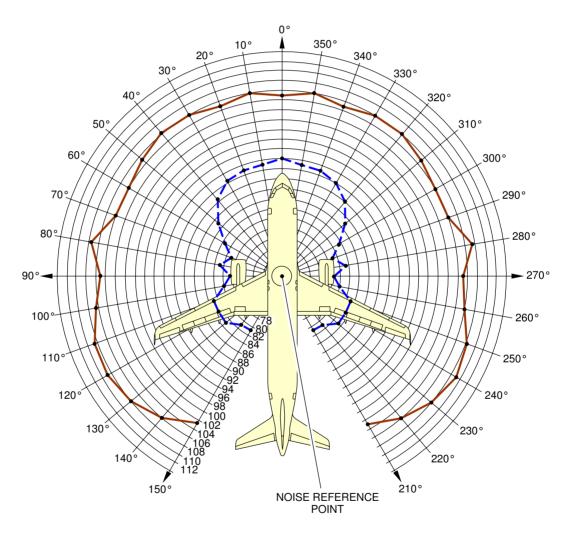
	GROUND IDLE	MAX THRUST POSSIBLE ON BRAKES
N1	20.8%	90%
CURVE	• <b>•</b>	•——



N\_AC\_060201\_1\_0070101\_01\_00

Airport and Community Noise CFM56-5A series engine FIGURE 1

	GROUND IDLE	MAX THRUST POSSIBLE ON BRAKES
N1	18.9%	87%
CURVE	•	•

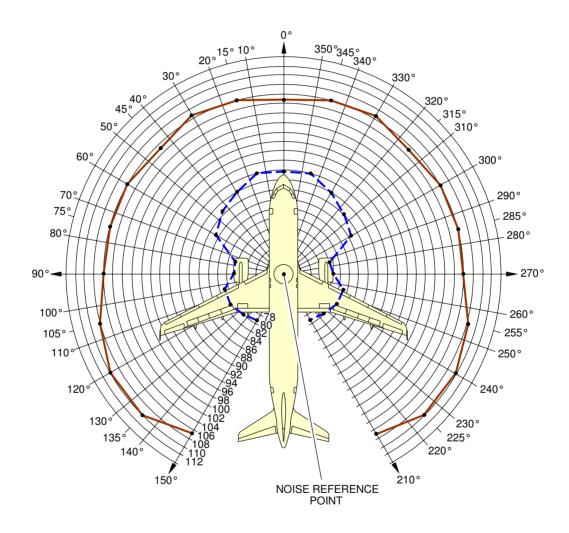


N\_AC\_060201\_1\_0080101\_01\_00

Airport and Community Noise CFM56-5B series engine FIGURE 2

\*\*ON A/C A320-100 A320-200

	GROUND IDLE	MAX THRUST POSSIBLE ON BRAKES
E.P.R	1.007	1.397
N2	57.7%	92.5%
CURVE	•	•



N\_AC\_060201\_1\_0090101\_01\_00

Airport and Community Noise IAE V2500 series engine FIGURE 3

6-3-0 Danger Areas of Engines

\*\*ON A/C A320-100 A320-200

Danger Areas of Engines

1. Danger Areas of the Engines.

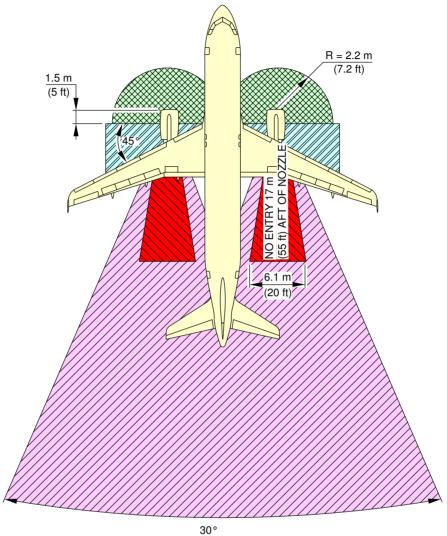
## 6-3-1 Ground Idle Power

\*\*ON A/C A320-100 A320-200

# Ground Idle Power

1. This section gives danger areas of the engines at ground idle power conditions.

## \*\*ON A/C A320-100 A320-200



TO 55 m (180 ft) INCLUDES CROSS WIND EFFECT

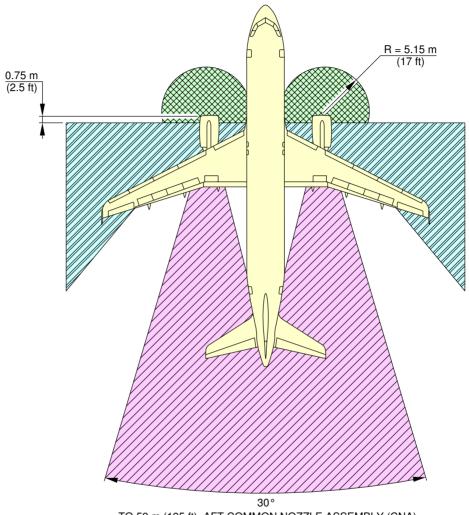




N\_AC\_060301\_1\_0050101\_01\_01

Danger Areas of Engines CFM56 series engine FIGURE 1

## \*\*ON A/C A320-100 A320-200



TO 59 m (195 ft) AFT COMMON NOZZLE ASSEMBLY (CNA)







N\_AC\_060301\_1\_0060101\_01\_00

Danger Areas of Engines IAE V2500 series engine FIGURE 2

## 6-3-2 Takeoff Power

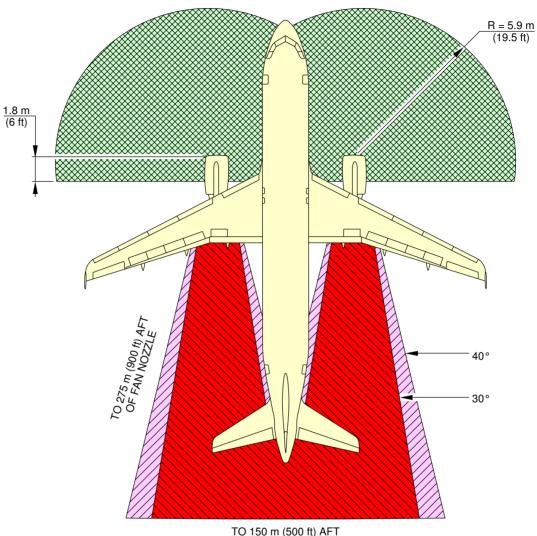
\*\*ON A/C A320-100 A320-200

# Takeoff Power

1. This section gives danger areas of the engines at max takeoff conditions.



## \*\*ON A/C A320-100 A320-200

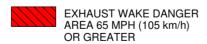


TO 150 m (500 ft) AFT OF FAN NOZZLE





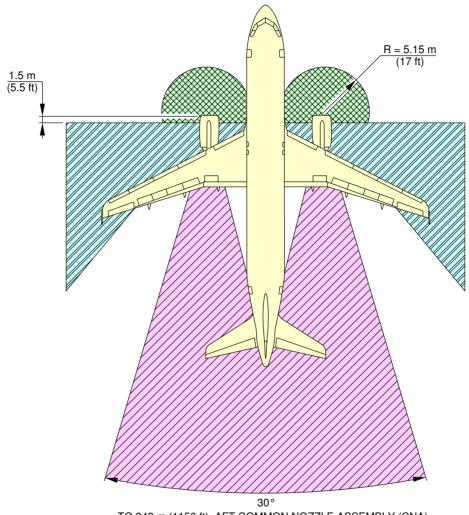
EXHAUST WAKE DANGER AREA 65 MPH (105 km/h) OR LESS



N\_AC\_060302\_1\_0050101\_01\_01

Danger Areas of Engines CFM56 series engine FIGURE 1

## \*\*ON A/C A320-100 A320-200



TO 348 m (1150 ft) AFT COMMON NOZZLE ASSEMBLY (CNA)







N\_AC\_060302\_1\_0060101\_01\_00

Danger Areas of Engines IAE V2500 series engine FIGURE 2

6-4-0 APU Exhaust Velocities and Temperatures

\*\*ON A/C A320-100 A320-200

APU Exhaust Velocities and Temperatures

1. APU Exhaust Velocities and Temperatures.

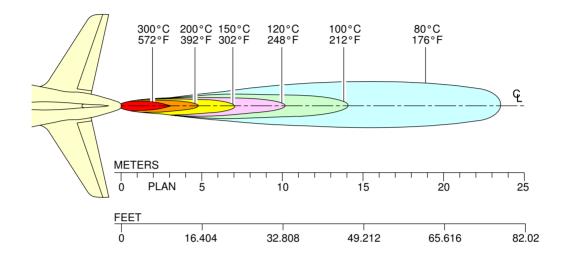
6-4-1 APU

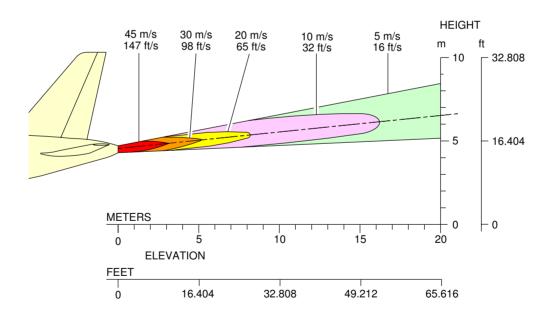
\*\*ON A/C A320-100 A320-200

APU - APIC & GARRETT

1. This section gives APU exhaust velocities and temperatures.

## \*\*ON A/C A320-100 A320-200





N\_AC\_060401\_1\_0030101\_01\_00

Exhaust Velocities and Temperatures APU – APIC & GARRETT FIGURE 1

#### **PAVEMENT DATA**

#### 7-1-0 General Information

\*\*ON A/C A320-100 A320-200

#### **General Information**

1. General Information

This brief description of the pavement charts that follow will help in their use for airport planning.

To aid in the interpolation between the discrete values shown, each airplane configuration is shown with a minimum range of five loads on the main landing gear.

All curves on the charts represent data at a constant specified tire pressure with:

- The airplane loaded to the maximum ramp weight.
- The Center of Gravity (CG) at its maximum permissible aft position.

Pavement requirements for commercial airplanes are derived from the static analysis of loads imposed on the main landing gear struts.

The A/C codes are used for configuration management of chapter 07 only. There is no relation between these A/C codes and the ICAO A/C codes used for determining the airplane wing span and outer main gear wheel span as described in ICAO-Annex 14 Volume 1, Aerodrome Design and Operation Chapter 1.4, Table 1-1.

Section 7-2-0 presents basic data on the landing gear footprint configuration, maximum ramp weights and tire sizes and pressures.

Section 7-3-0 shows maximum vertical and horizontal pavement loads for certain critical conditions at the tire-ground interfaces.

Section 7-4-1 contain charts to find these loads throughout the stability limits of the airplane at rest on the pavement.

These main landing gear loads are used as the point of entry to the pavement design charts which follow, interpolating load values where necessary.

Section 7-5-1 uses procedures in Instruction Report No S-77-1 "Procedures for Development of CBR Design Curves", dated June 1977 and as modified according to the methods described in ICAO Aerodrome Design Manual, Part 3. Pavements, 2nd Edition, 1983, Section 1.1 (The ACN-PCN Method), and utilizing the alpha factors approved by ICAO in October 2007.



The report was prepared by the U.S. Army Corps Engineers Waterways Experiment Station, Soils and Pavement Laboratory, Vicksburg, Mississippi.

The line showing 10 000 coverages is used to calculate Aircraft Classification Number (ACN).

The procedure that follows is used to develop flexible pavement design curves such as shown in Section 7-5-1.

- With the scale for pavement thickness at the bottom and the scale for CBR at the top, an arbitrary line is drawn representing 10 000 coverages.
- Incremental values of the weight on the main landing gear are then plotted.
- Annual departure lines are drawn based on the load lines of the weight on the main landing gear that is shown on the graph.

Section 7-7-1 gives the rigid pavement design curves that have been prepared with the use of the Westergaard Equation. This is in general accordance with the procedures outlined in the Portland Cement Association publications, "Design of Concrete Airport Pavement", 1973 and "Computer Program for Airport Pavement Design", (Program PDILB), 1967 both by Robert G. Packard.

The procedure that follows is used to develop rigid pavement design curves such as shown in Section 7-7-1.

- With the scale for pavement thickness to the left and the scale for allowable working stress to the right, an arbitrary load line is drawn. This represents the main landing gear maximum weight to be shown.
- All values of the subgrade modulus (k values) are then plotted.
- Additional load lines for the incremental values of weight on the main landing gear are drawn on the basis of the curve for k=300 already shown on the graph.

All Load Classification Number (LCN) curves shown in Section 7-6-1 and Section 7-8-2 have been developed from a computer program based on data provided in International Civil Aviation Organisation (ICAO) document 7920-AN/865/2, Aerodrome Manual, Part 2, "Aerodrome Physical Characteristics", Second Edition, 1965.

The flexible pavement charts in Section 7-6-1 show LCN against equivalent single wheel load, and equivalent single wheel load against pavement thickness.

The rigid pavement charts in Section 7-8-2 show LCN against equivalent single wheel load and equivalent single wheel load against radius of relative stiffness.

Section 7-9-0 gives ACN data prepared according to the ACN/PCN system as referenced in ICAO Annex 14, "Aerodromes", Volume 1 Fourth Edition July 2004, incorporating Amendments 1 to 6.

The ACN/PCN system gives a standardized international airplane/pavement rating system replacing the various S, T, TT, LCN, AUW, ISWL, etc., rating systems used throughout the world.

The ACN is the Aircraft Classification Number and PCN is the corresponding Pavement Classification Number.

An aircraft having an ACN equal to or less than the PCN can operate without restriction on the pavement.

Numerically the ACN is two times the derived single wheel load expressed in thousands of kilograms. The derived single wheel is defined as the load on a single tire inflated to 1.25 Mpa (181 psi) that would have the same pavement requirements as the aircraft.

Computationally the ACN/PCN system uses PCA program PDILB for rigid pavements and S-77-1 for flexible pavements to calculate ACN values.

The Airport Authority must decide on the method of pavement analysis and the results of their evaluation shown as follows:

	PCN					
PAVEMENT TYPE	SUBGRADE CATEGORY	TIRE PRESSURE CATEGORY	EVALUATION METHOD			
_		W – No Limit	T – Technical			
F – Flexible	B – Medium		U – Using Aircraft			
	C – Low	Y – To 1.0 Mpa (145 psi)				
	D – Ultra Low	Z – To 0.5 Mpa (73 psi)				

Section 7-9-1 shows the aircraft ACN values for flexible pavements.

The four subgrade categories are:

- A. High Strength CBR 15
- B. Medium Strength CBR 10
- C. Low Strength CBR 6
- D. Ultra Low Strength CBR 3

Section 7-9-2 shows the aircraft ACN for rigid pavements.

The four subgrade categories are:

- A. High Strength Subgrade  $k = 150 \text{ MN/m}^3 (550 \text{ pci})$
- B. Medium Strength Subgrade  $k = 80 \text{ MN/m}^3 (300 \text{ pci})$
- C. Low Strength Subgrade k = 40 MN/m³ (150 pci)
- D. Ultra Low Strength Subgrade  $k = 20 \text{ MN/m}^3 (75 \text{ pci})$

\*\*ON A/C A320-100 A320-200

MODEL	WV	AIRCRAFT CODE
A320-111	01	С
A320-111	00 02	D
A320-2XX	06	Е
A320-2XX	05	F
A320-2XX	01	G
A320-2XX	02	Н
A320-2XX	13 04	
A320-2XX	08 00 14	J
A320-2XX	16	K
A320-2XX	03 09	L
A320-2XX	11	M
A320-2XX	10 07	N
A320-2XX	12	0
A320-2XX	15	Р
A320–2XX Bogie L/G	00	TT

NOTE: FOR WEIGHT VARIANT DEFINITION, REFER TO CHAPTER 02-01-01.

NOTE: THE A/C CODES ARE USED FOR CONFIGURATION MANAGEMENT OF CHAPTER 07 ONLY.THERE IS NO RELATION BETWEEN THESE A/C CODES AND THE ICAO A/C CODES USED FOR DETERMINING THE AIRPLANE WING SPAN AND OUTER MAIN GEAR WHEEL SPAN AS DESCRIBED IN ICAO-ANNEX 14 VOLUME 1, AERODROME DESIGN AND OPERATION CHAPTER 1.4, TABLE 1-1.

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Aircraft Codes FIGURE 1

7-2-0 Landing Gear Footprint

\*\*ON A/C A320-100 A320-200

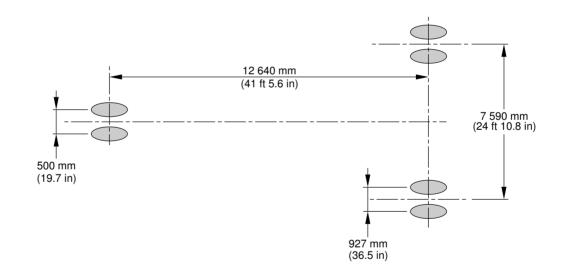
## Landing Gear Footprint

1. This section gives Landing Gear Footprint.

<u>NOTE</u>: For AC Code definition, refer to chapter 7-1-0.

## \*\*ON A/C A320-100

A/C CODE	С					
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1					
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)					
NOSE GEAR TIRE PRESSURE	11 bar (160 psi)					
MAIN GEAR TIRE SIZE	46 x 17 R20 (46 x 16 – 20)	49 x 17 – 20 49 x 19 – 20				
MAIN GEAR TIRE PRESSURE	12.3 bar (178 psi) 10.2 bar (148 psi) 9.2 bar (133 psi)					

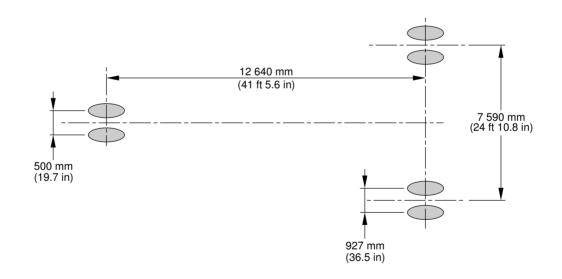


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Landing Gear Footprint Landing Gear Footprint FIGURE 1

## \*\*ON A/C A320-100

A/C CODE	D				
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1				
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)				
NOSE GEAR TIRE PRESSURE	11.4 bar (165 psi)				
MAIN GEAR TIRE SIZE	46 x 17 R20				
MAIN GEAR TIRE PRESSURE	12.8 bar (186 psi) 10.9 bar (158 psi) 10.6 bar (154 psi) 9.6 bar (139				

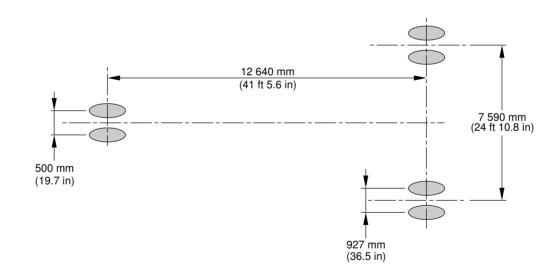


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Landing Gear Footprint Landing Gear Footprint FIGURE 2

## \*\*ON A/C A320-200

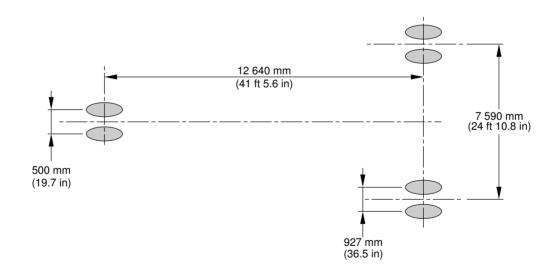
A/C CODE	E					
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1					
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)					
NOSE GEAR TIRE PRESSURE	11 bar (160 psi)					
MAIN GEAR TIRE SIZE	46 x 17 R20 (46 x 16 – 20)	49 x 17 – 20 49 x 19 – 20				
MAIN GEAR TIRE PRESSURE	12.3 bar (178 psi) 10.2 bar (148 psi) 9.2 bar (133 psi)					



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## \*\*ON A/C A320-200

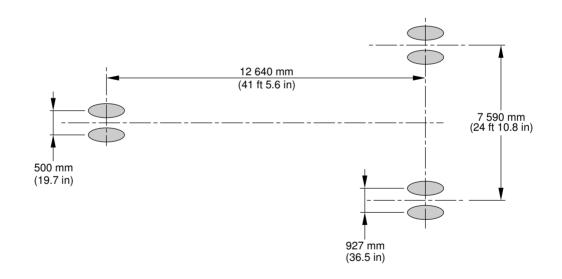
A/C CODE	F				
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1				
NOSE GEAR TIRE SIZE	30 x 8.8 R15				
NOSE GEAR TIRE PRESSURE	11.4 bar (165 psi)				
MAIN GEAR TIRE SIZE	46 x 17 R20				
MAIN GEAR TIRE PRESSURE	12.8 bar (186 psi)	10.6 bar (154 psi)	9.6 bar (139 psi)	10.9 bar (158 psi)	



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## \*\*ON A/C A320-200

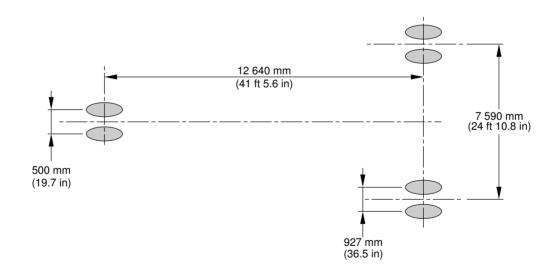
A/C CODE	G				
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1				
NOSE GEAR TIRE SIZE	30 × 8.8 R15 (30 × 8.8 – 15)				
NOSE GEAR TIRE PRESSURE	11.4 bar (165 psi)				
MAIN GEAR TIRE SIZE	46 x 17 R20				
MAIN GEAR TIRE PRESSURE	12.8 bar (186 psi)	10.9 bar (158 psi)	10.6 bar (154 psi)	9.6 bar (139 psi)	



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## \*\*ON A/C A320-200

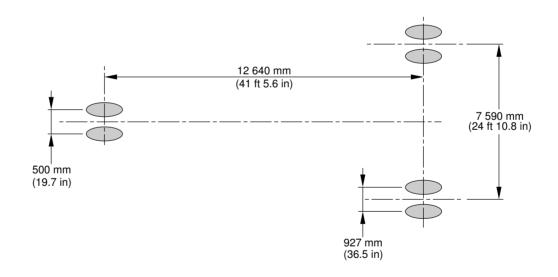
A/C CODE	Н				
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1				
NOSE GEAR TIRE SIZE	30 × 8.8 R15 (30 × 8.8 – 15)				
NOSE GEAR TIRE PRESSURE	11.4 bar (165 psi)				
MAIN GEAR TIRE SIZE	46 x 17 R20				
MAIN GEAR TIRE PRESSURE	12.8 bar (186 psi)	10.9 bar (158 psi)	10.6 bar (154 psi)	9.6 bar (139 psi)	



N\_AC\_070200\_1\_0120101\_01\_01

## \*\*ON A/C A320-200

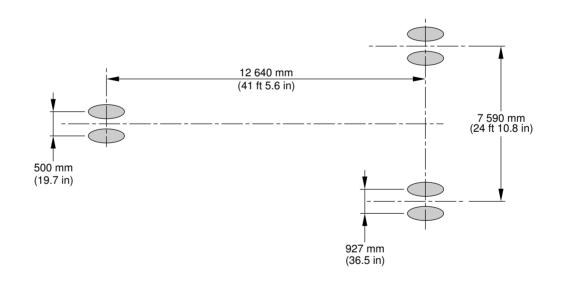
A/C CODE	I				
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1				
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)				
NOSE GEAR TIRE PRESSURE	12.3 bar (178 psi)				
MAIN GEAR TIRE SIZE	46 x 17 R20				
MAIN GEAR TIRE PRESSURE	13.8 bar (200 psi)	11.8 bar (171 psi)	11.4 bar (165 psi)	10.3 bar (149 psi)	



N\_AC\_070200\_1\_0130101\_01\_01

## \*\*ON A/C A320-200

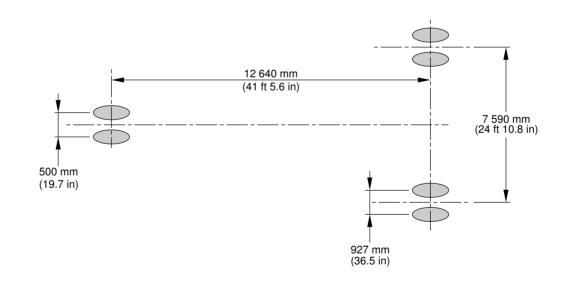
A/C CODE	J – K				
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1				
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)				
NOSE GEAR TIRE PRESSURE	12.3 bar (178 psi)				
MAIN GEAR TIRE SIZE	46 x 17 R20				
MAIN GEAR TIRE PRESSURE	13.8 bar (200 psi)	11.8 bar (171 psi)	11.4 bar (165 psi)	10.3 bar (149 psi)	



N\_AC\_070200\_1\_0140101\_01\_01

## \*\*ON A/C A320-200

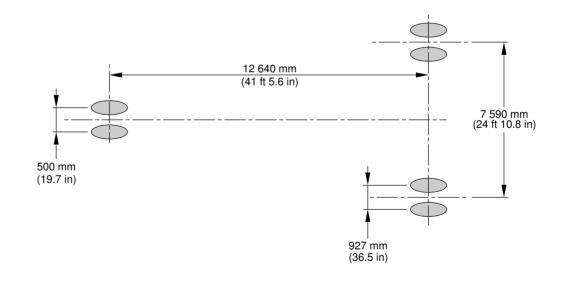
A/C CODE	L – M				
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1				
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)				
NOSE GEAR TIRE PRESSURE	12.3 bar (178 psi)				
MAIN GEAR TIRE SIZE	46 x 17 R20				
MAIN GEAR TIRE PRESSURE	13.8 bar (200 psi)	11.8 bar (171 psi)	11.4 bar (165 psi)	10.3 bar (149 psi)	



N\_AC\_070200\_1\_0150101\_01\_01

## \*\*ON A/C A320-200

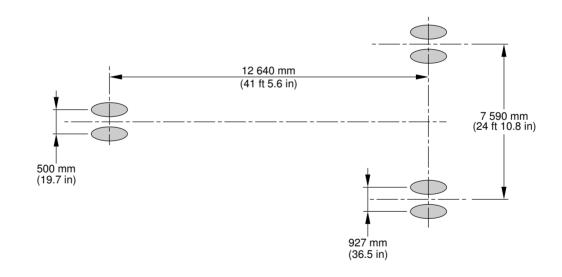
A/C CODE	N – O				
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1				
NOSE GEAR TIRE SIZE	30 × 8.8 R15 (30 × 8.8 – 15)				
NOSE GEAR TIRE PRESSURE	12.3 bar (178 psi)				
MAIN GEAR TIRE SIZE	46 x 17 R20				
MAIN GEAR TIRE PRESSURE	14.4 bar (209 psi)	12.3 bar (178 psi)	12 bar (174 psi)	10.7 bar (155 psi)	



N\_AC\_070200\_1\_0160101\_01\_01

## \*\*ON A/C A320-200

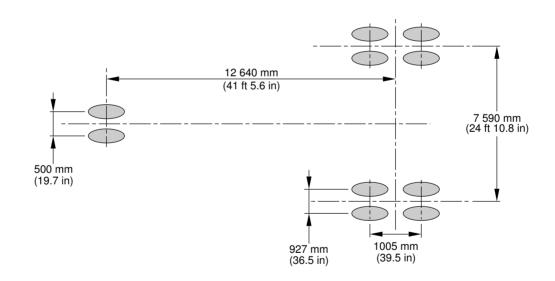
A/C CODE	Р			
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1			
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)			
NOSE GEAR TIRE PRESSURE	12.3 bar (178 psi)			
MAIN GEAR TIRE SIZE	46 x 17 R20 (46 x 16 – 20)	1 270 x 455 R22 (49 x 18 – 22)	49 x 17 – 20	49 x 19 – 20
MAIN GEAR TIRE PRESSURE	14.4 bar (209 psi)	12.3 bar (178 psi)	12 bar (174 psi)	10.7 bar (155 psi)



N\_AC\_070200\_1\_0170101\_01\_01

## \*\*ON A/C A320-200

A/C CODE	П	
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SECTION 7-4-1	
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)	
NOSE GEAR TIRE PRESSURE	12.3 bar (178 psi)	
MAIN GEAR TIRE SIZE	915 x 300 R16 (36 x 11 – 16)	
MAIN GEAR TIRE PRESSURE	12.2 bar (177 psi)	



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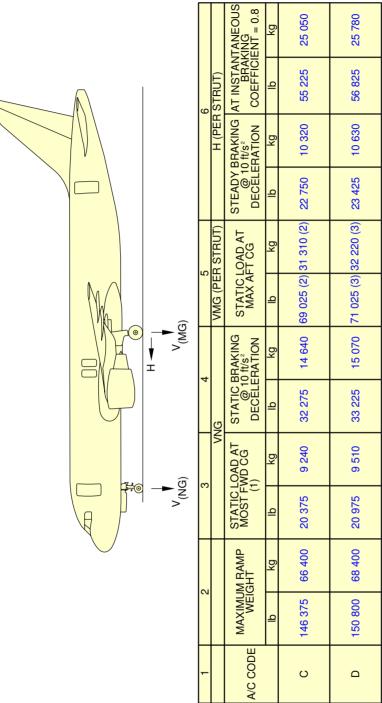
## 7-3-0 Maximum Pavement Loads

\*\*ON A/C A320-100 A320-200

## Maximum Pavement Loads

1. This section gives Maximum Pavement Loads.

<u>NOTE</u>: For A/C code definition, refer to chapter 7-1-0.

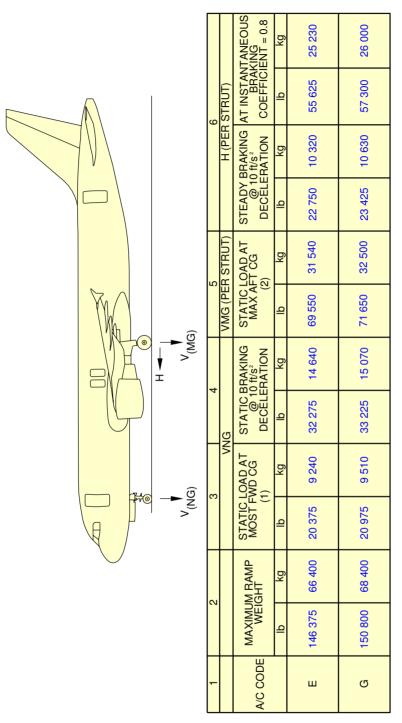


Maximum Pavement Loads Maximum Pavement Loads FIGURE 1 MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG
MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG
MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

A/C CODE
(1) C - D FWD CG = 17 % MAC
(2) C AFT CG = 41 % MAC
(3) D AFT CG = 40.7 % MAC

NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

N\_AC\_070300\_1\_0090101\_01\_01



MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG
MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG
MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

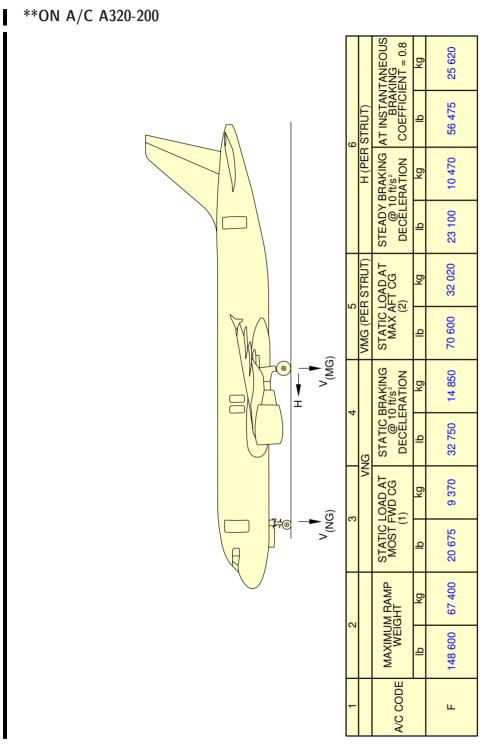
N\_AC\_070300\_1\_0100101\_01\_01

A/C CODE E - G E - G

E Ø

FWD CG = 17 % MAC AFT CG = 43 % MAC

Maximum Pavement Loads Maximum Pavement Loads FIGURE 2 NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT



Maximum Pavement Loads FIGURE 3

MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING V (MG)

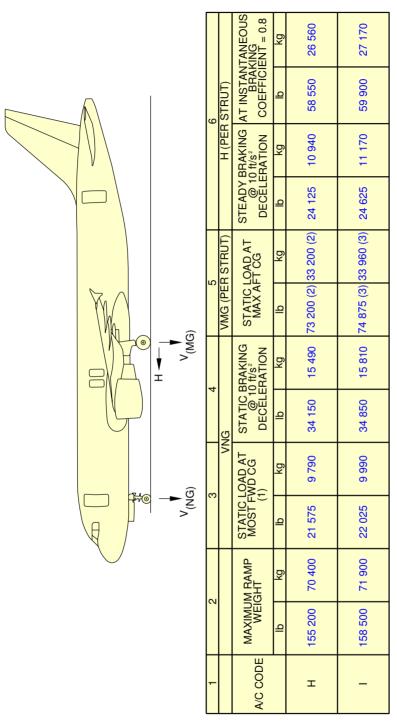
MRW = 67 400 kgMRW = 67 400 kg ш  $\widehat{\Xi}$ (2)

A/C CODE

FWD CG = 17 % MAC AT A/C WEIGHT = 67 400 kg AFT CG = 43 % MAC AT A/C WEIGHT = 67 400 kg

NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

N\_AC\_070300\_1\_0320101\_01\_00



Maximum Pavement Loads Maximum Pavement Loads FIGURE 4

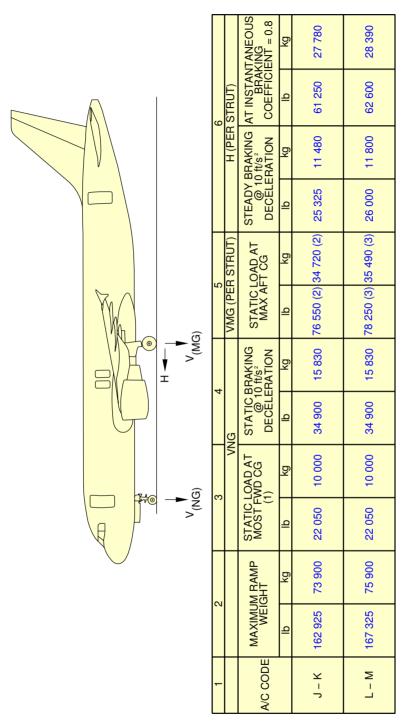
MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

A/C CODE 3 (2)

AFT CG = 41 % MAC AFT CG = 41.42 % MAC FWD CG = 17 % MAC

NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

N\_AC\_070300\_1\_0110101\_01\_01



MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

A/C CODE

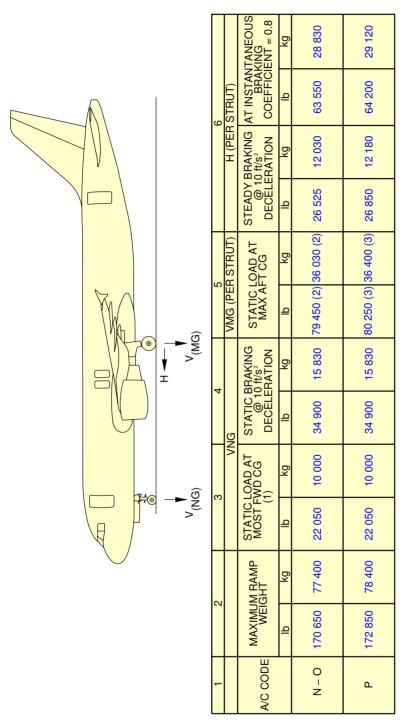
J - K - L - M FWD CG = 17 % MAC AT A/C WEIGHT = 72 000 kg

A/C CODE (1) J - K - L - M(2) J - K(3) L - M

AFT CG = 40 % MAC AFT CG = 38.7 % MAC NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

N\_AC\_070300\_1\_0120101\_01\_01

Maximum Pavement Loads Maximum Pavement Loads FIGURE 5



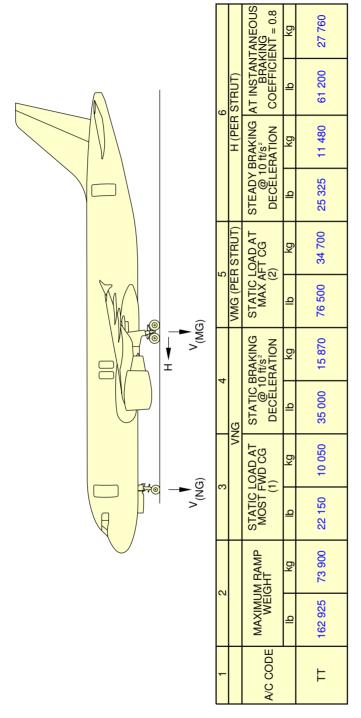
MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG
MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG
MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

FWD CG = 17 % MAC AT A/C WEIGHT = 72 000 kg

AFT CG = 37.5 % MAC AFT CG = 36.8 % MAC NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

N\_AC\_070300\_1\_0130101\_01\_01

Maximum Pavement Loads Maximum Pavement Loads FIGURE 6



Maximum Pavement Loads Maximum Pavement Loads FIGURE 7

NG) MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG

V (MG) MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOS H MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING A/C CODE

(1) TT FWD CG = 17 % MAC AT A/C WEIGHT = 72 000 kg (2) TT AFT CG = 40 % MAC

N\_AC\_070300\_1\_0140101\_01\_01

NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

## 7-4-0 Landing Gear Loading on Pavement

\*\*ON A/C A320-100 A320-200

#### Landing Gear Loading on Pavement

1. General

In the example shown in Section 7-4-1 Landing Gear Loading on Pavement, A/C Code C, the Gross Aircraft Weight is 49 000 kg (108 026 lb) and the percentage of weight on the Main Landing Gear is 94.25 %.

For these conditions the total weight on the Main Landing Gear is 46 200 kg (101 854 lb).

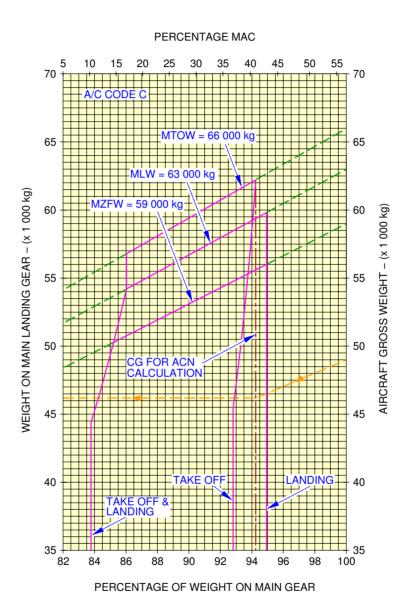
## 7-4-1 Landing Gear Loading on Pavement

\*\*ON A/C A320-100 A320-200

## Landing Gear Loading on Pavement

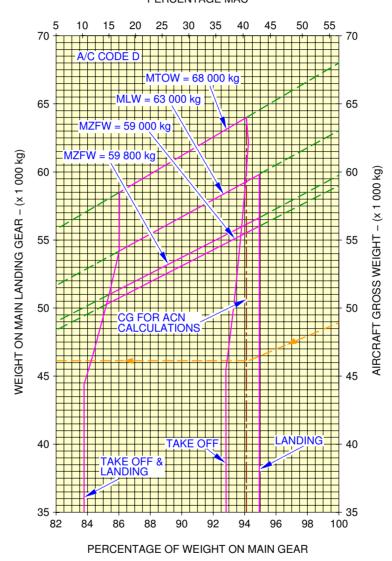
1. This section gives Landing Gear Loading on Pavement.

<u>NOTE</u>: For A/C Code definition, refer to chapter 7-1-0.



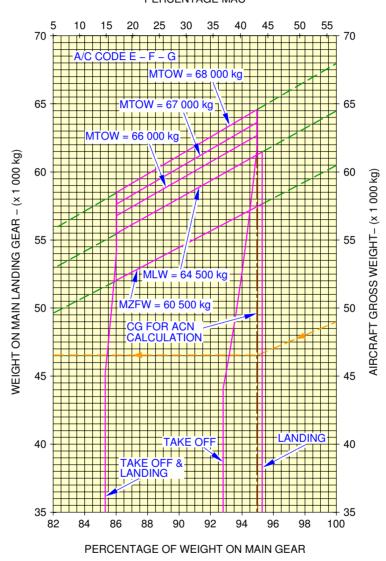
N\_AC\_070401\_1\_0090101\_01\_02

#### PERCENTAGE MAC



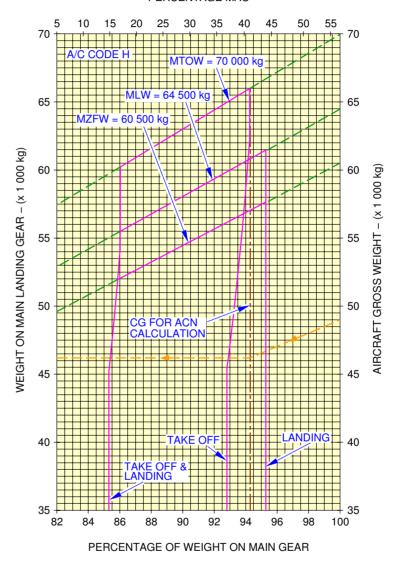
N\_AC\_070401\_1\_0100101\_01\_02

#### PERCENTAGE MAC



N\_AC\_070401\_1\_0110101\_01\_02

#### PERCENTAGE MAC



N\_AC\_070401\_1\_0120101\_01\_02

# 

PERCENTAGE MAC

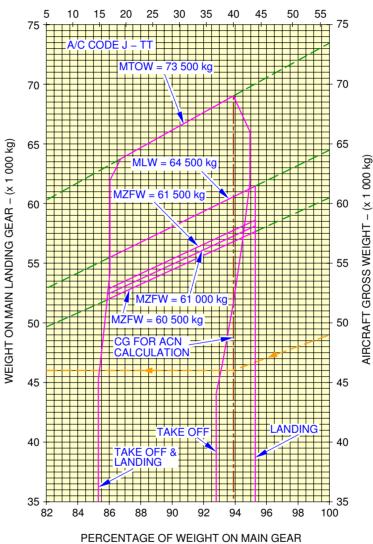
N\_AC\_070401\_1\_0130101\_01\_02

Landing Gear Loading on Pavement Landing Gear Loading on Pavement FIGURE 5

PERCENTAGE OF WEIGHT ON MAIN GEAR

82

## PERCENTAGE MAC



N\_AC\_070401\_1\_0140101\_01\_02

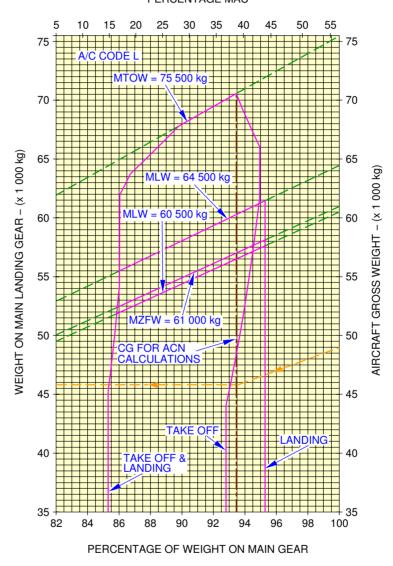
## PERCENTAGE MAC 70 65 WEIGHT ON MAIN LANDING GEAR - (x 1 000 kg) 65 55 45 35 82 100

N\_AC\_070401\_1\_0150101\_01\_02

Landing Gear Loading on Pavement Landing Gear Loading on Pavement FIGURE 7

PERCENTAGE OF WEIGHT ON MAIN GEAR

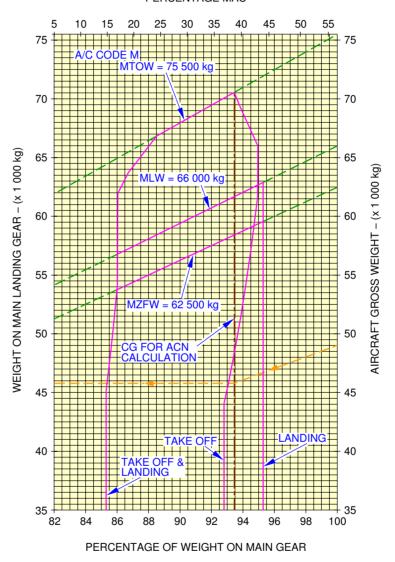
## PERCENTAGE MAC



N\_AC\_070401\_1\_0160101\_01\_02

Landing Gear Loading on Pavement Landing Gear Loading on Pavement FIGURE 8

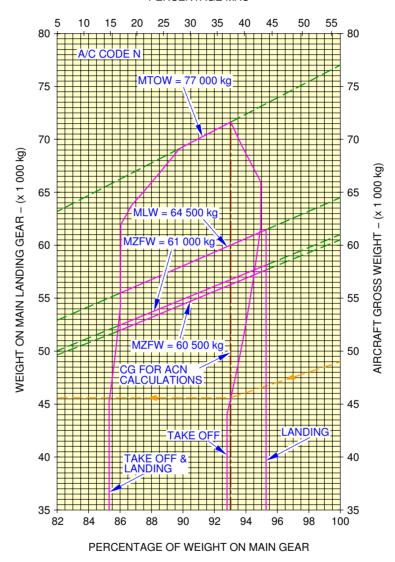
## PERCENTAGE MAC



N\_AC\_070401\_1\_0170101\_01\_02

Landing Gear Loading on Pavement Landing Gear Loading on Pavement FIGURE 9

## PERCENTAGE MAC



N\_AC\_070401\_1\_0180101\_01\_02

Landing Gear Loading on Pavement Landing Gear Loading on Pavement FIGURE 10

# 5 10 15 20 25 30 35 40 45 50 55 80 75 MTOW = 77 000 kg 70 65 MLW = 66 000 kg MLW = 66 000 kg MZFW = 62 500 kg 60 Symmetry MZFW = 62 500 kg 45 LANDING

92

PERCENTAGE OF WEIGHT ON MAIN GEAR

PERCENTAGE MAC

N\_AC\_070401\_1\_0190101\_01\_02

100

Landing Gear Loading on Pavement Landing Gear Loading on Pavement FIGURE 11

82

# PERCENTAGE MAC 30 35 70 WEIGHT ON MAIN LANDING GEAR - (x 1 000 kg) AIRCRAFT GROSS WEIGHT - (x 1 000 kg) 45 82 90

N\_AC\_070401\_1\_0200101\_01\_02

Landing Gear Loading on Pavement Landing Gear Loading on Pavement FIGURE 12

PERCENTAGE OF WEIGHT ON MAIN GEAR

### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

## 7-5-0 Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method

\*\*ON A/C A320-100 A320-200

Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method

1. General

In order to determine a particular Flexible Pavement Thickness, the Subgrade Strength (CBR), the Annual Departure Level and the weight on one Main Landing Gear must be known.

In the example shown in Section 7-5-1 Flexible Pavement Requirements, A/C Code C for:

- a CBR value of 10
- an Annual Departure Level of 25 000
- the Load on one MLG of 20 000 kg (44 100 lb).
- For these conditions, the Flexible Pavement Thickness is 43 cm (16.8 in).
- The line showing 10 000 Coverages is used to calculate the Aircraft Classification Number (ACN).

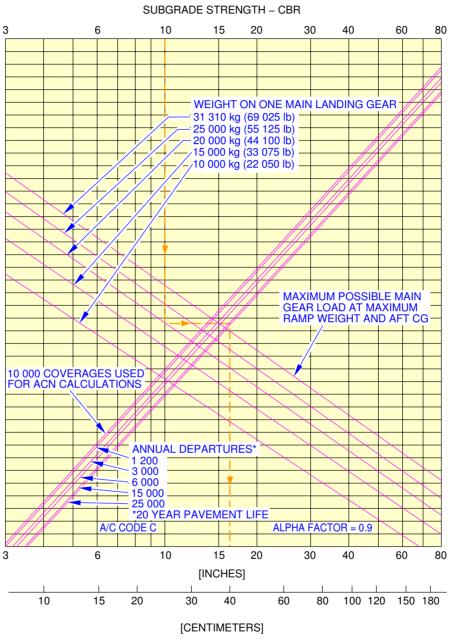
## AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

7-5-1 Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method
\*\*ON A/C A320-100 A320-200

Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method

1. This section gives Flexible Pavement Requirements.

<u>NOTE</u>: For A/C Code definition, refer to chapter 7-1-0.



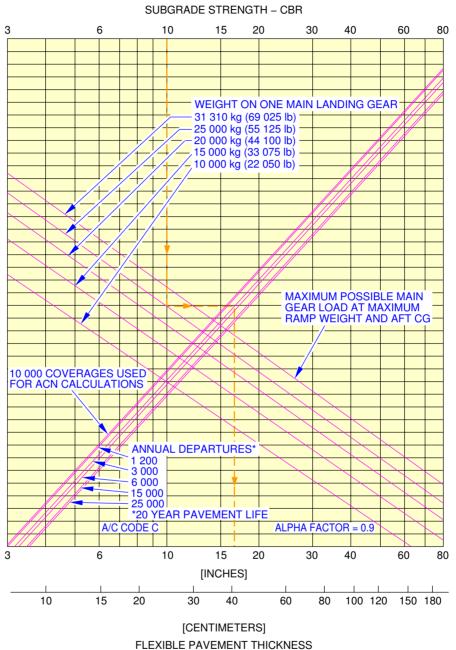
[CENTIMETERS]

FLEXIBLE PAVEMENT THICKNESS

46 x 17 R20 TIRES

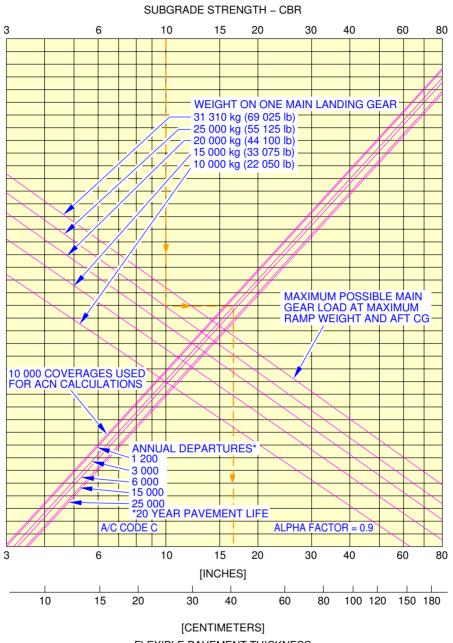
TIRE PRESSURE CONSTANT AT 12.3 bar (178 psi)

N\_AC\_070501\_1\_0650101\_01\_00



49 x 17-20 TIRES TIRE PRESSURE CONSTANT AT 10.2 bar (148 psi)

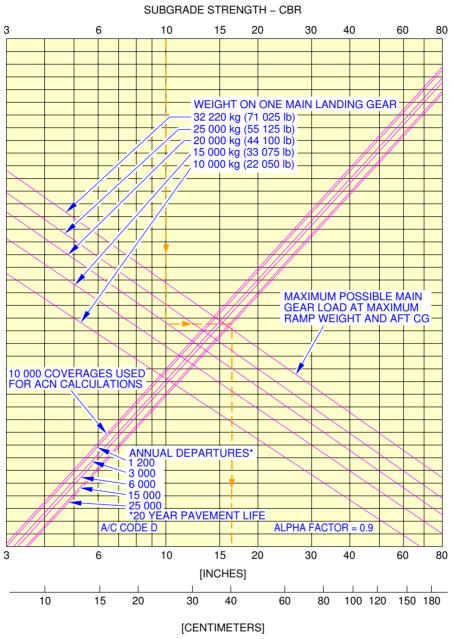
N\_AC\_070501\_1\_0660101\_01\_00



FLEXIBLE PAVEMENT THICKNESS
49 x 19–20 TIRES

TIRE PRESSURE CONSTANT AT 9.2 bar (133 psi)

N\_AC\_070501\_1\_0670101\_01\_00

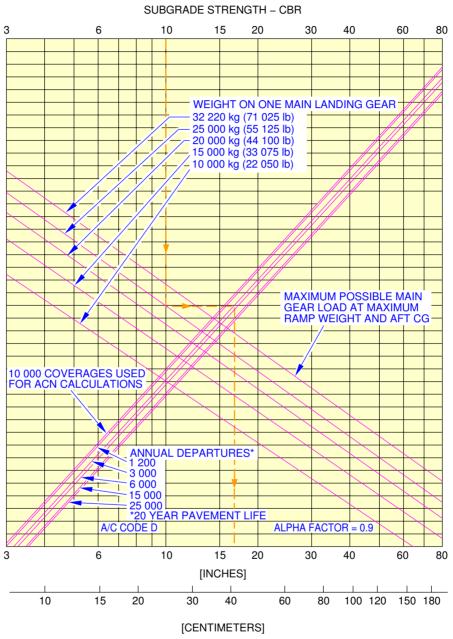


FLEXIBLE PAVEMENT THICKNESS

46 x 17 R20 TIRES

TIRE PRESSURE CONSTANT AT 12.8 bar (186 psi)

N\_AC\_070501\_1\_0680101\_01\_00



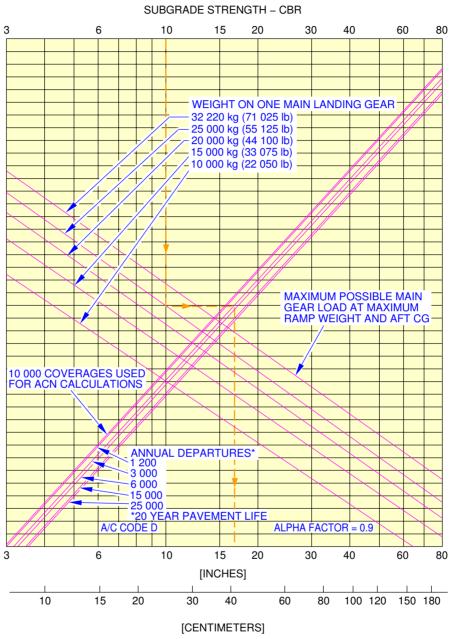
[CENTIMETERS]

FLEXIBLE PAVEMENT THICKNESS

49 x 17–20 TIRES

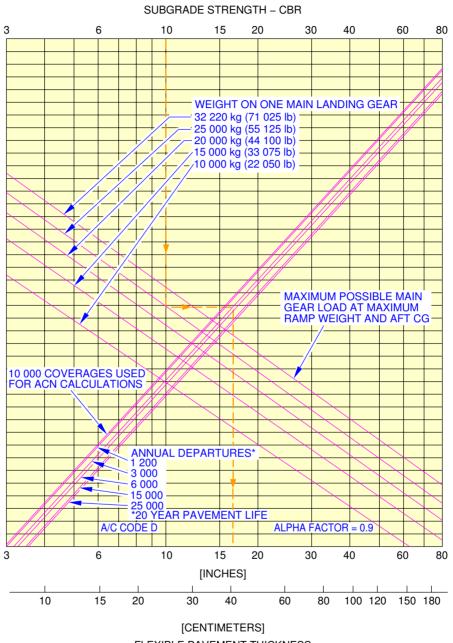
TIRE PRESSURE CONSTANT AT 10.6 bar (154 psi)

N\_AC\_070501\_1\_0690101\_01\_00



FLEXIBLE PAVEMENT THICKNESS
1 270 x 455 R22 (49 x 18–22) TIRES
TIRE PRESSURE CONSTANT AT 10.9 bar (158 psi)

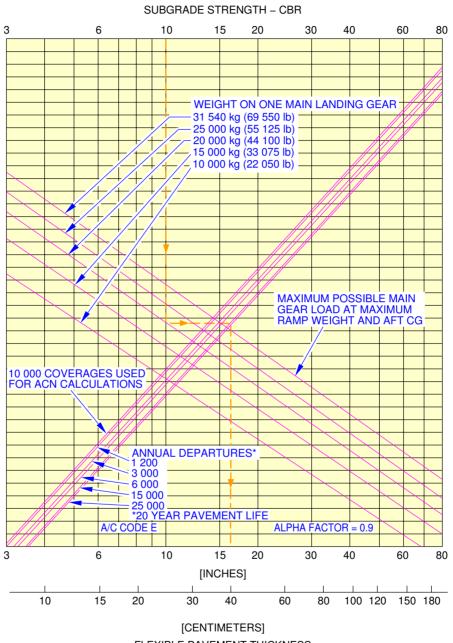
N\_AC\_070501\_1\_0700101\_01\_00



FLEXIBLE PAVEMENT THICKNESS
49 x 19-20 TIRES

TIRE PRESSURE CONSTANT AT 9.6 bar (139 psi)

N\_AC\_070501\_1\_0710101\_01\_00

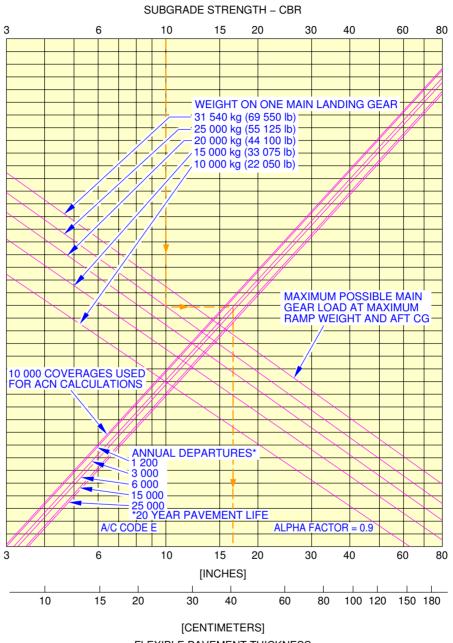


FLEXIBLE PAVEMENT THICKNESS

46 x 17 R20 TIRES

TIRE PRESSURE CONSTANT AT 12.3 bar (178 psi)

N\_AC\_070501\_1\_0720101\_01\_00

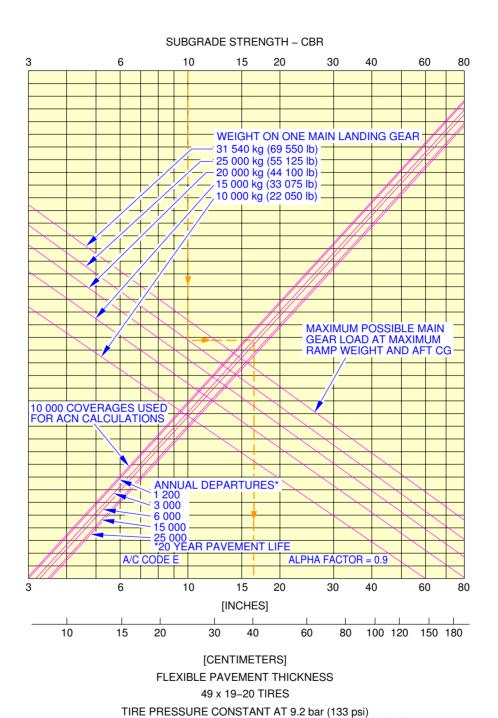


FLEXIBLE PAVEMENT THICKNESS

49 x 17–20 TIRES

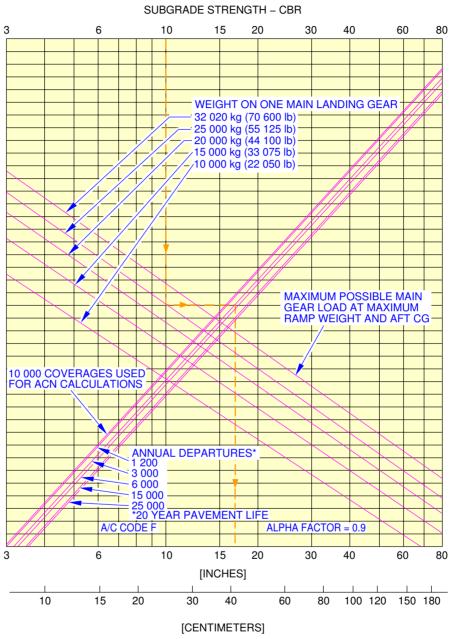
TIRE PRESSURE CONSTANT AT 10.2 bar (148 psi)

N\_AC\_070501\_1\_0730101\_01\_00



Flexible Pavement Requirements FIGURE 10

N\_AC\_070501\_1\_0740101\_01\_00



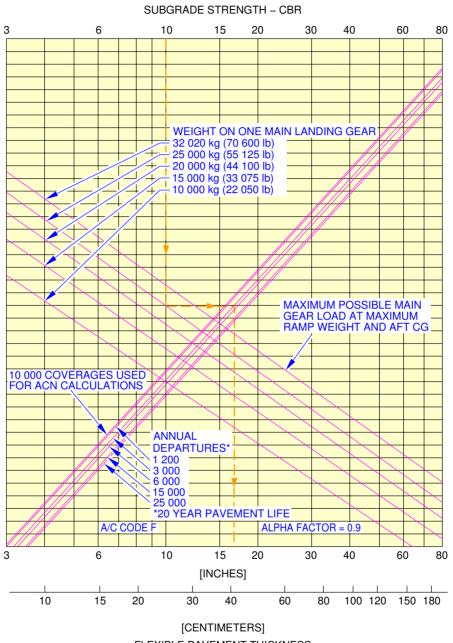
[CENTIMETERS]

FLEXIBLE PAVEMENT THICKNESS

46 x 17 R20 TIRES

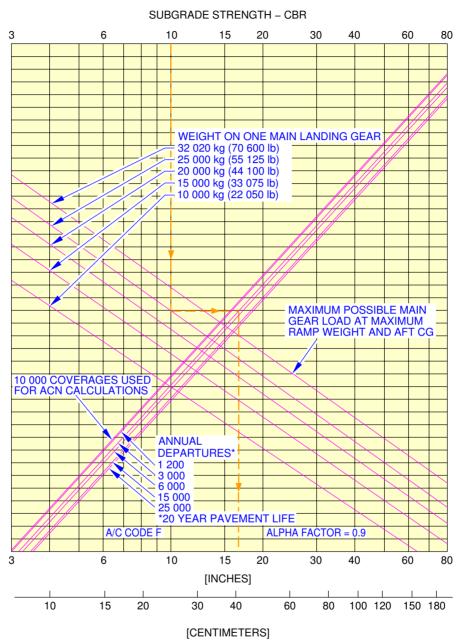
TIRE PRESSURE CONSTANT AT 12.8 bar (186 psi)

N\_AC\_070501\_1\_0750101\_01\_00



FLEXIBLE PAVEMENT THICKNESS
49 x 17–20 TIRES

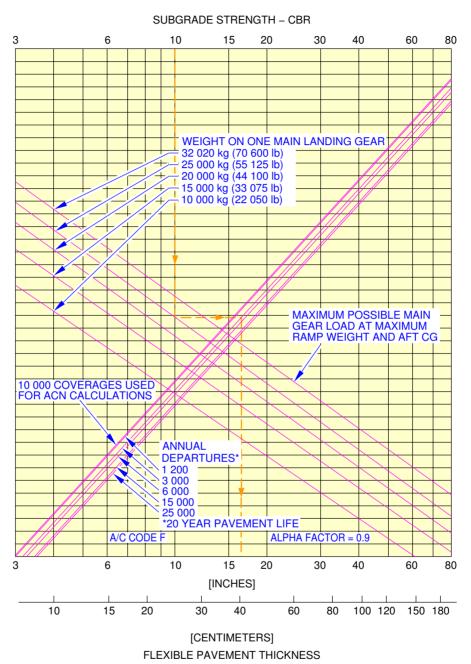
TIRE PRESSURE CONSTANT AT 10.6 bar (154 psi)
N\_AC\_070501\_1\_0760101\_01\_00



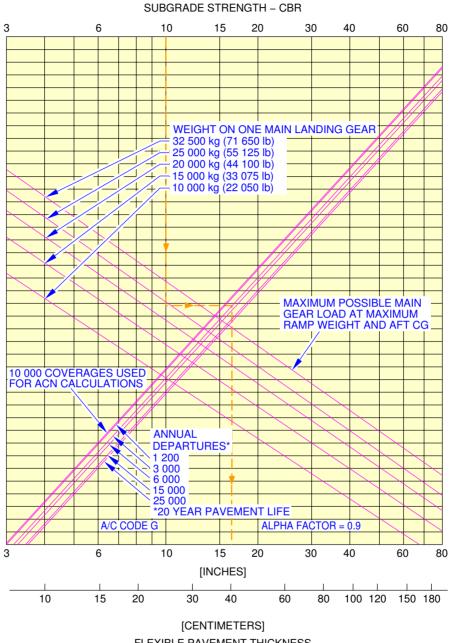
FLEXIBLE PAVEMENT THICKNESS
1 270 x 455 R22 (49 x 18–22) TIRES
TIRE PRESSURE CONSTANT AT 10.9 bar (158 psi)

N\_AC\_070501\_1\_0770101\_01\_00

Flexible Pavement Requirement Flexible Pavement Requirements FIGURE 13



49 x 19–20 TIRES
TIRE PRESSURE CONSTANT AT 9.6 bar (139 psi)
N\_AC\_070501\_1\_0780101\_01\_00



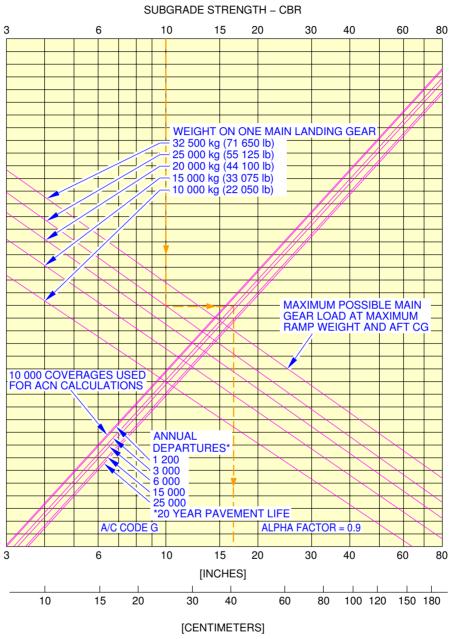
[CENTIMETERS]

FLEXIBLE PAVEMENT THICKNESS

46 x 17 R20 TIRES

TIRE PRESSURE CONSTANT AT 12.8 bar (186 psi)

N\_AC\_070501\_1\_0790101\_01\_00



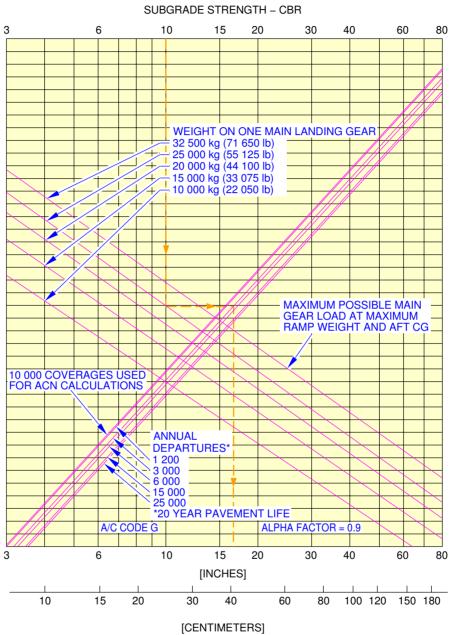
[CENTIMETERS]

FLEXIBLE PAVEMENT THICKNESS

49 x 17–20 TIRES

TIRE PRESSURE CONSTANT AT 10.6 bar (154 psi)

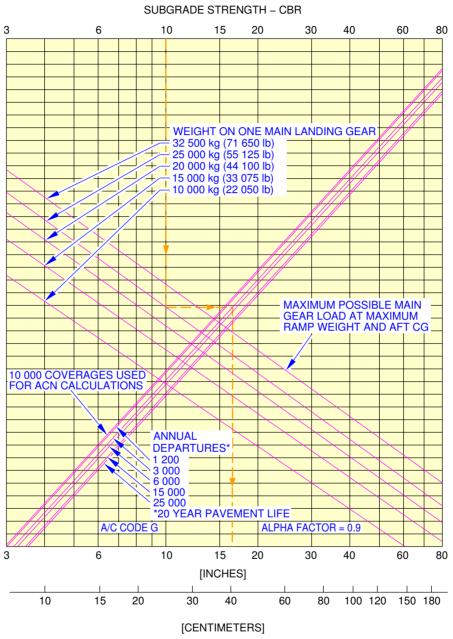
N\_AC\_070501\_1\_0800101\_01\_00



FLEXIBLE PAVEMENT THICKNESS
1 270 x 455 R22 (49 x 18–22) TIRES

TIRE PRESSURE CONSTANT AT 10.9 bar (158 psi) N\_AC\_070501\_1\_0810101\_01\_00

Flexible Pavement Requirement Flexible Pavement Requirements FIGURE 17



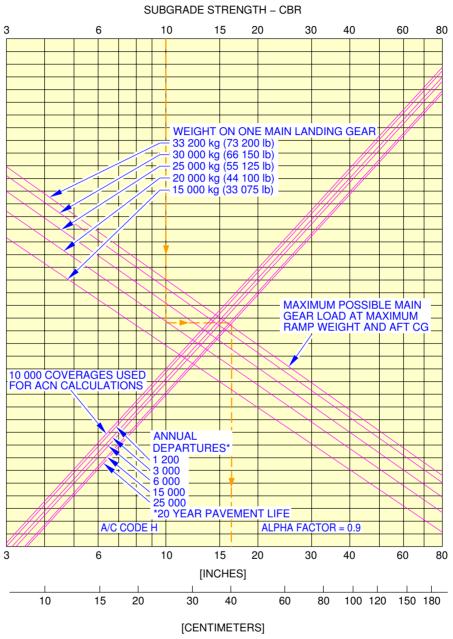
[CENTIMETERS]

FLEXIBLE PAVEMENT THICKNESS

49 x 19–20 TIRES

TIRE PRESSURE CONSTANT AT 9.6 bar (139 psi)

N\_AC\_070501\_1\_0820101\_01\_00

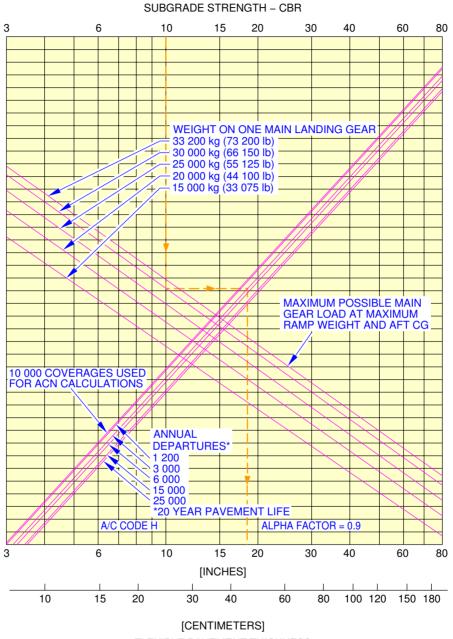


FLEXIBLE PAVEMENT THICKNESS

46 x 17 R20 TIRES

TIRE PRESSURE CONSTANT AT 12.8 bar (186 psi)

N\_AC\_070501\_1\_0830101\_01\_00

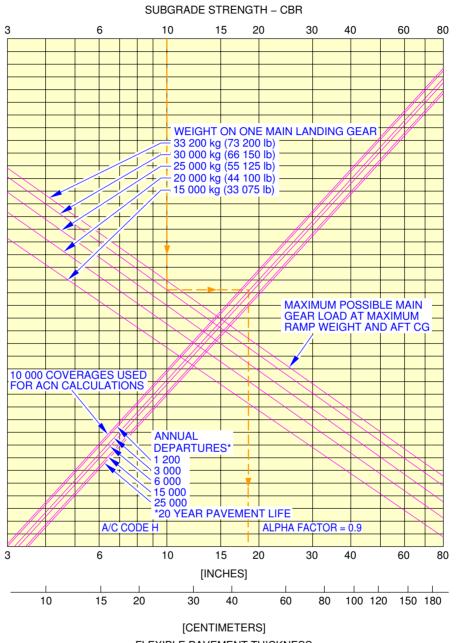


FLEXIBLE PAVEMENT THICKNESS

49 x 17–20 TIRES

TIRE PRESSURE CONSTANT AT 10.6 bar (154 psi)

N\_AC\_070501\_1\_0840101\_01\_00



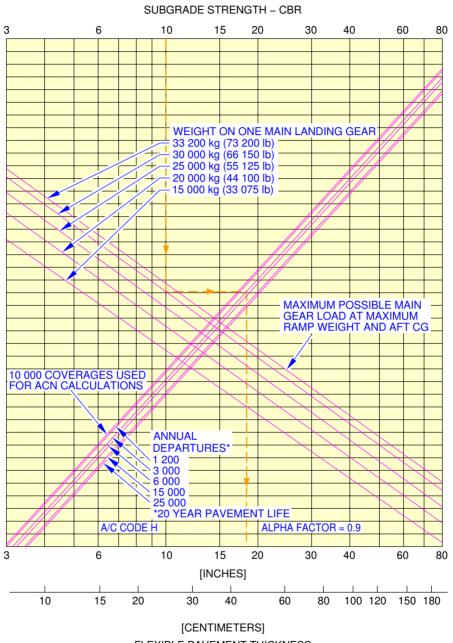
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FLEXIBLE PAVEMENT THICKNESS

1 270 x 455 R 22 (49 x 18–22) TIRES

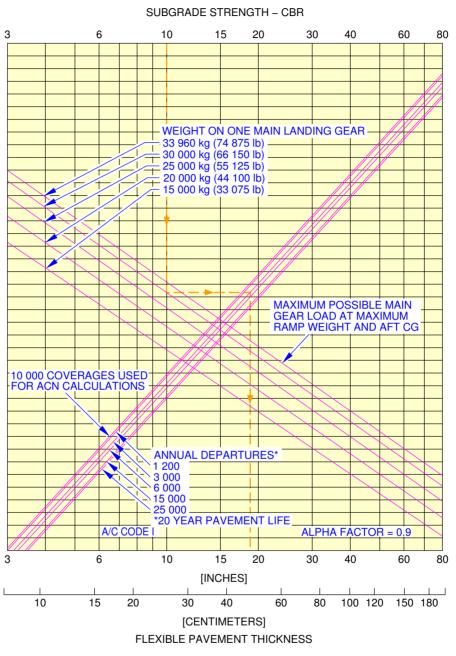
TIRE PRESSURE CONSTANT AT 10.9 bar (158 psi)

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FLEXIBLE PAVEMENT THICKNESS
49 x 19–20 TIRES

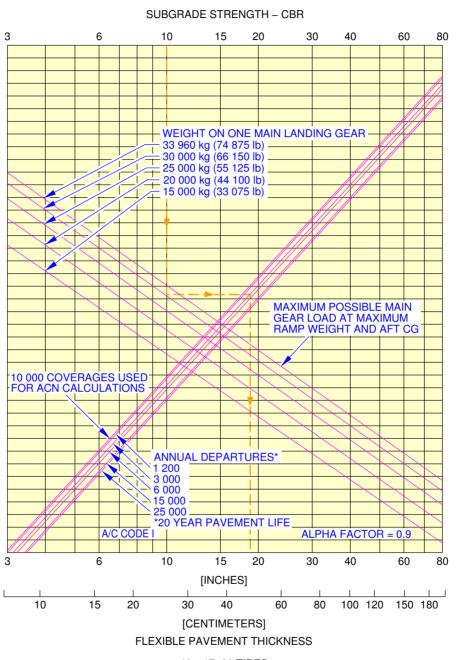
TIRE PRESSURE CONSTANT AT 9.6 bar (139 psi)
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46 x 17 R20 TIRES

TIRE PRESSURE CONSTANT AT 13.8 bar (200 psi)

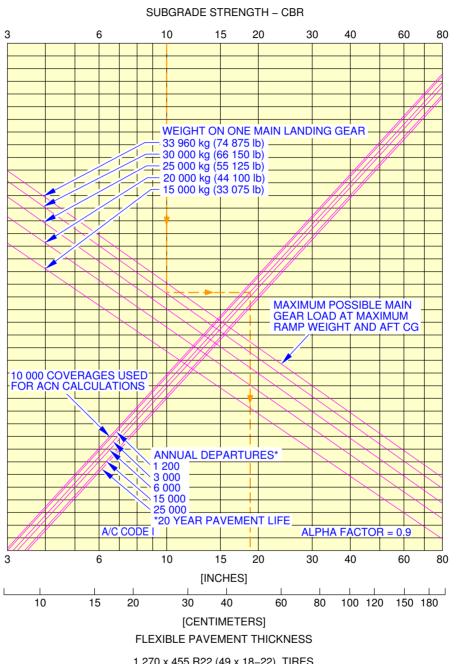
N\_AC\_070501\_1\_0870101\_01\_00



49 x 17-20 TIRES

TIRE PRESSURE CONSTANT AT 11.4 bar (165 psi)

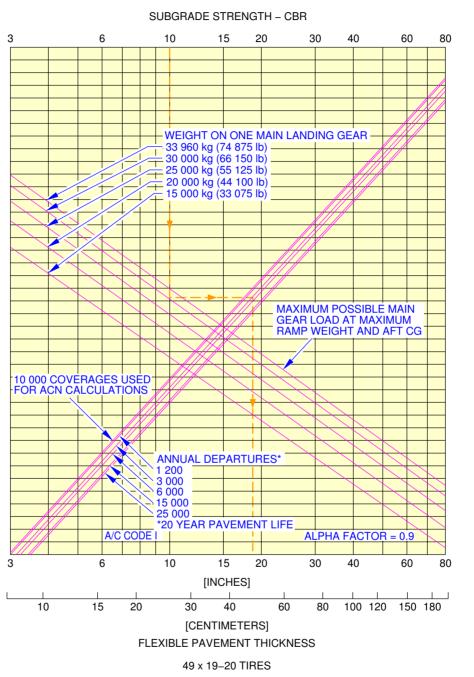
N\_AC\_070501\_1\_0880101\_01\_00



1 270 x 455 R22 (49 x 18-22) TIRES

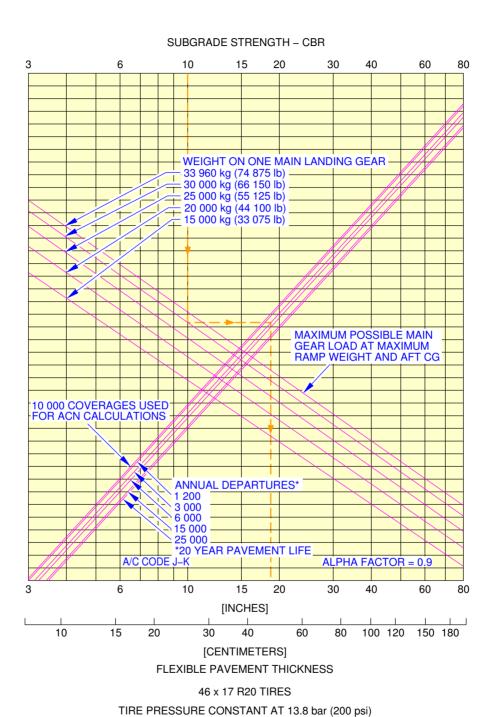
TIRE PRESSURE CONSTANT AT 11.8 bar (171 psi)

N\_AC\_070501\_1\_0890101\_01\_00



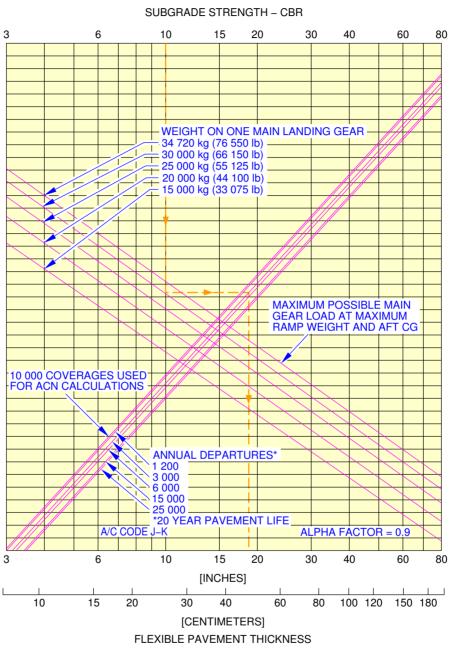
TIRE PRESSURE CONSTANT AT 10.3 bar (149 psi)

N\_AC\_070501\_1\_0900101\_01\_00



Flexible Pavement Requirements FIGURE 27

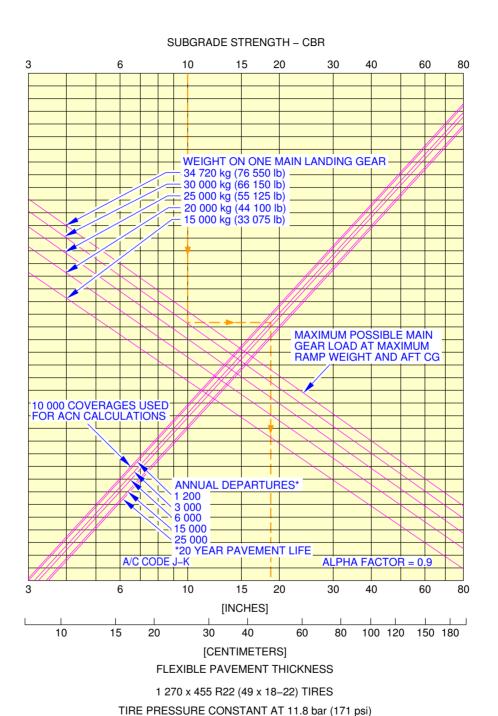
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49 x 17-20 TIRES

TIRE PRESSURE CONSTANT AT 11.4 bar (165 psi)

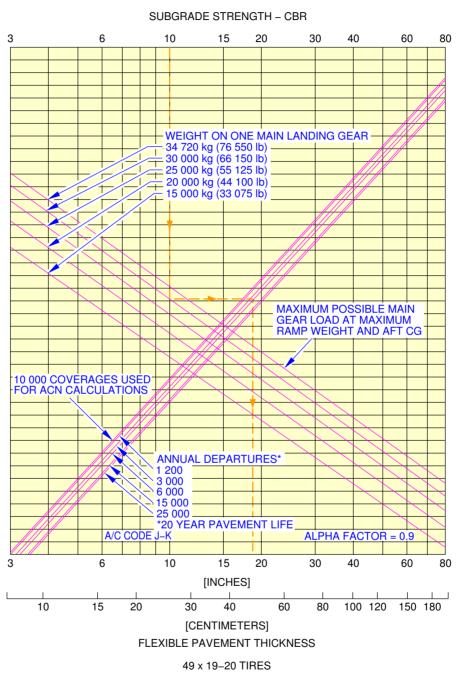
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Flexible Pavement Requirements Flexible Pavement Requirements

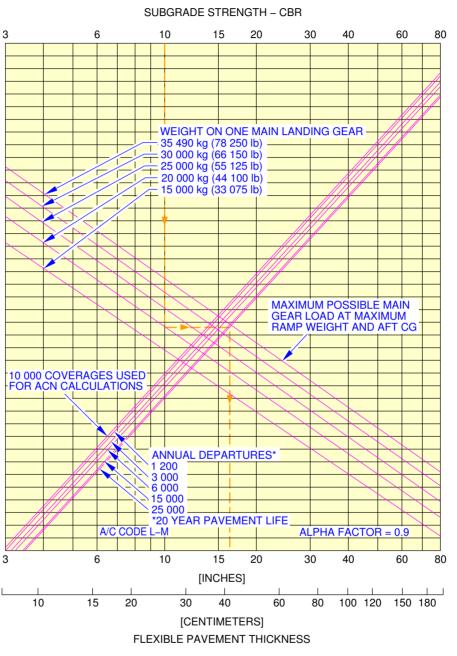
FIGURE 29

N\_AC\_070501\_1\_0930101\_01\_00



TIRE PRESSURE CONSTANT AT 10.3 bar (149 psi)

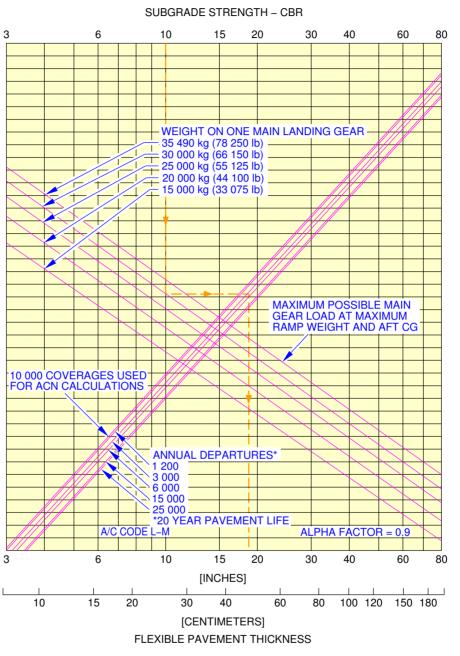
N\_AC\_070501\_1\_0940101\_01\_00



46 x 17 R20 TIRES

TIRE PRESSURE CONSTANT AT 13.8 bar (200 psi)

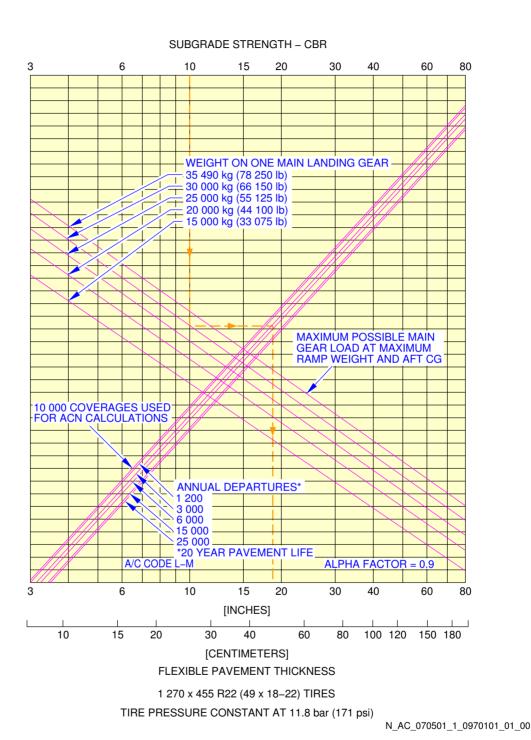
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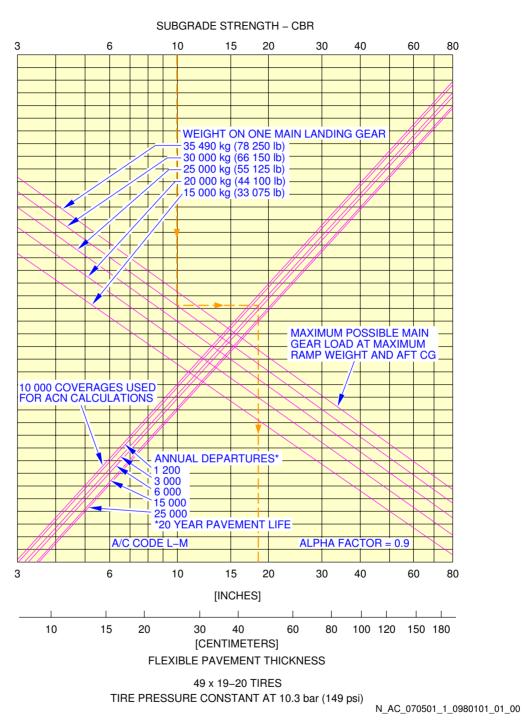


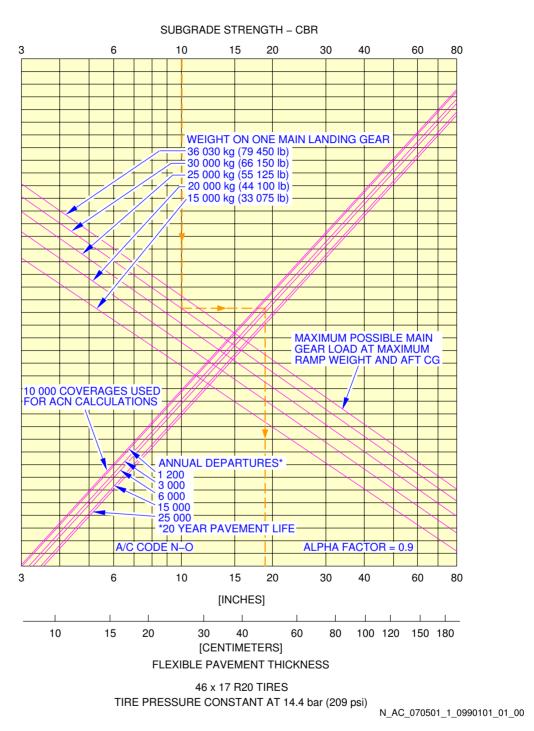
49 x 17-20 TIRES

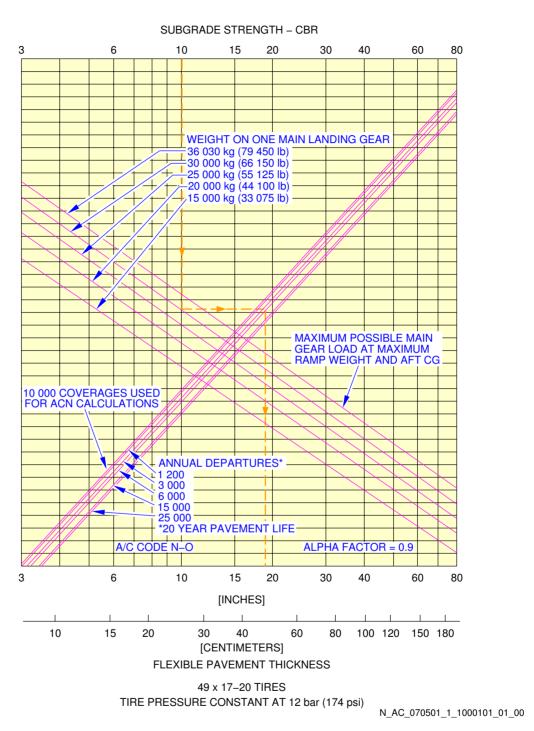
TIRE PRESSURE CONSTANT AT 11.4 bar (165 psi)

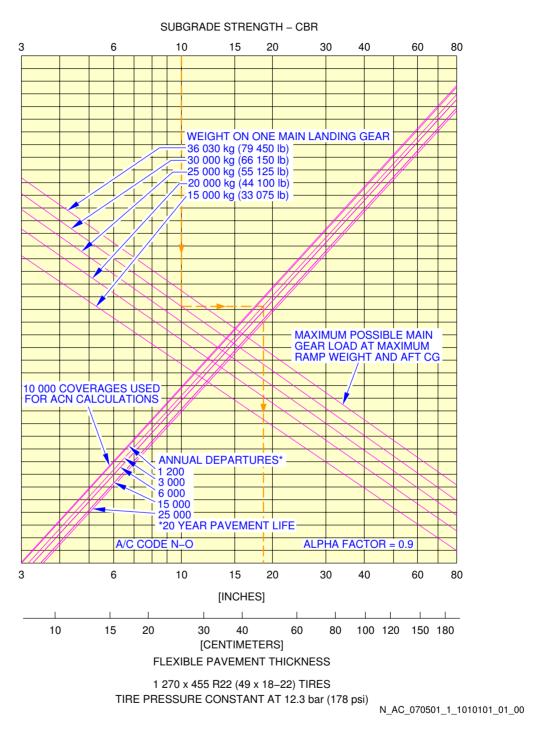
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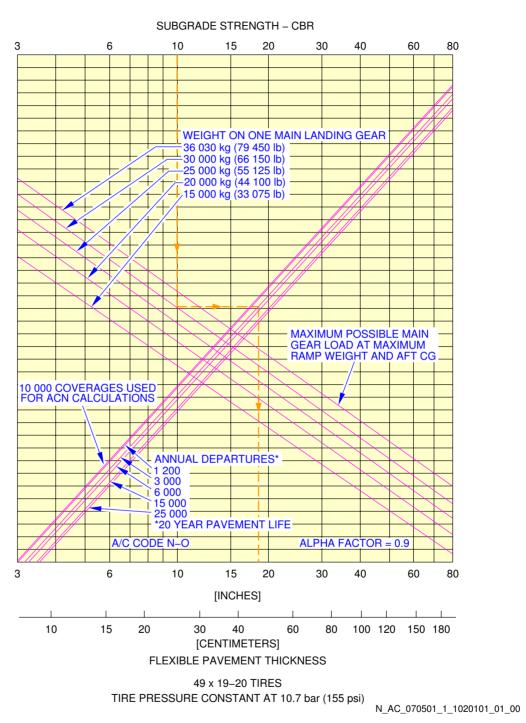


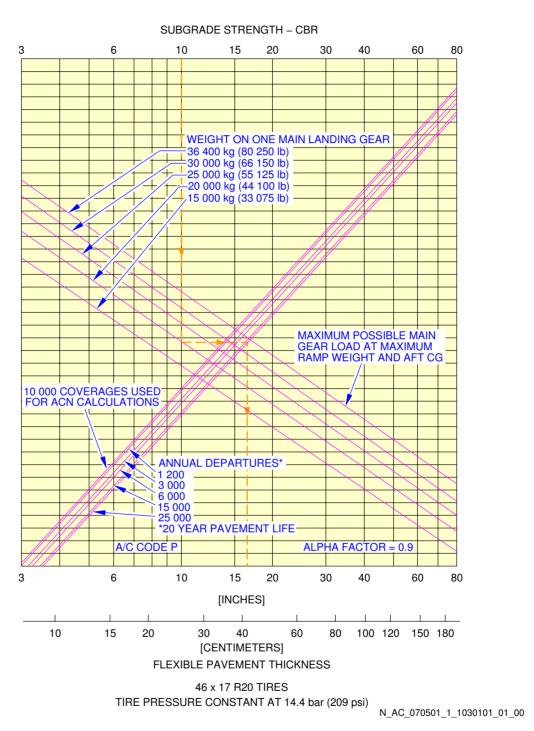


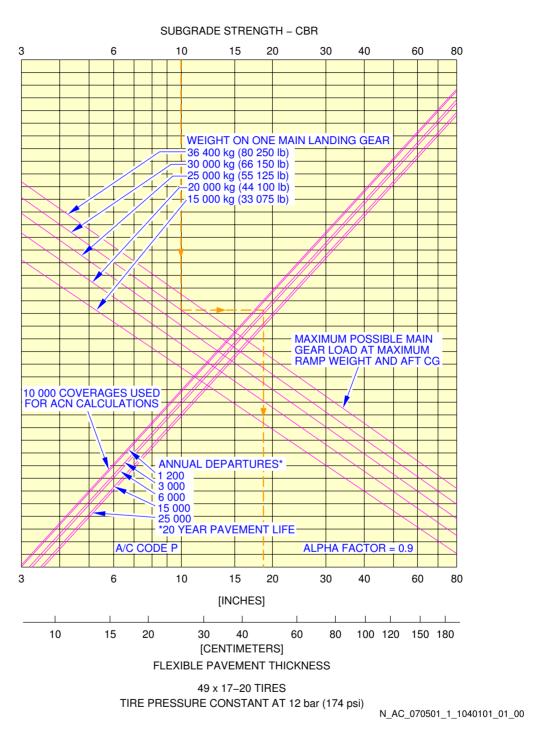


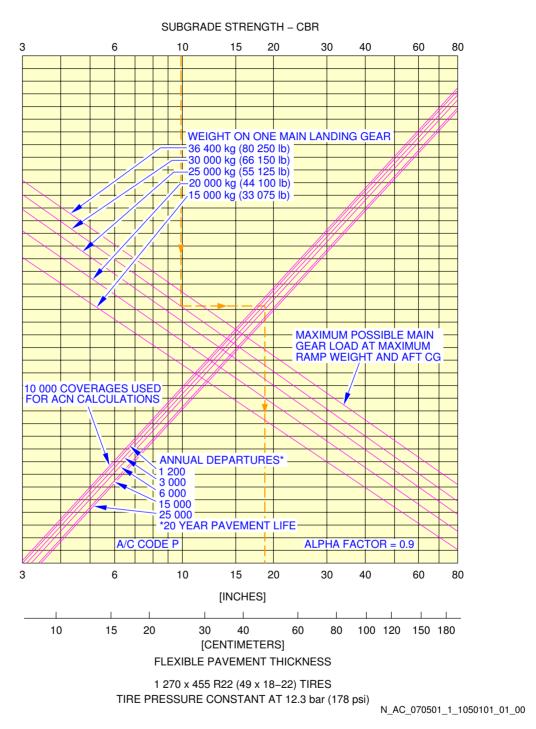


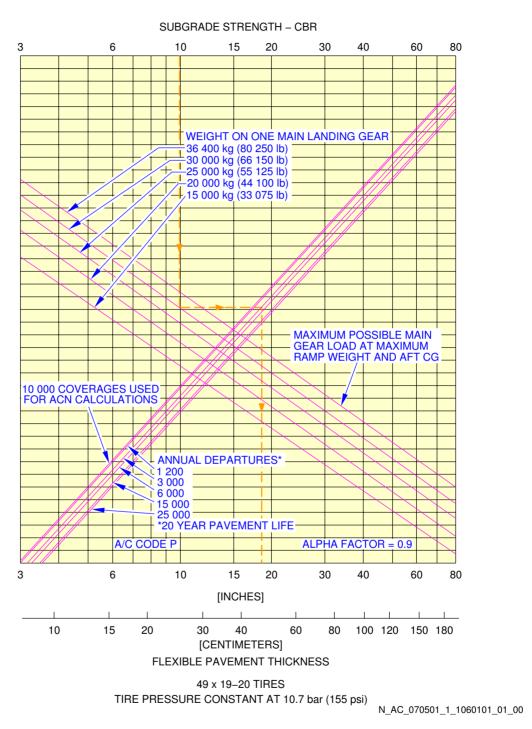


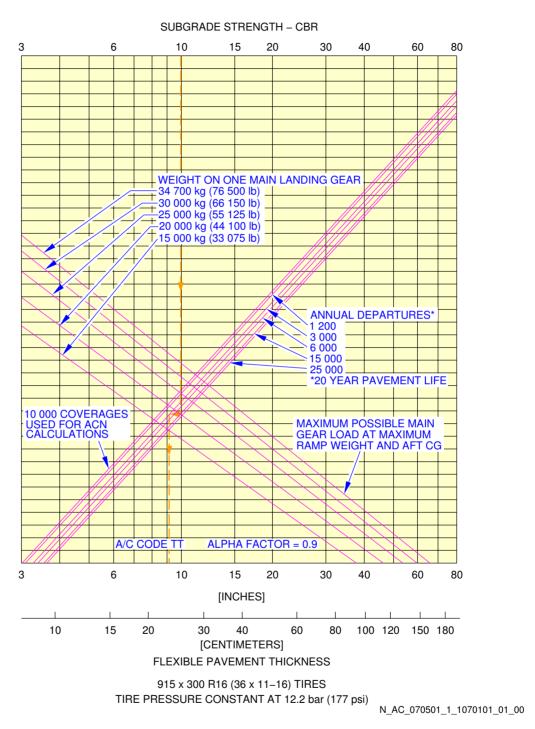












### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

## 7-6-0 Flexible Pavement Requirements - LCN Conversion

\*\*ON A/C A320-100 A320-200

# Flexible Pavement Requirements - LCN Conversion

### 1. General

In order to determine the airplane weight that can be accommodated on a particular Flexible Pavement, both the LCN of the pavement and the thickness (h) must be known.

In the example shown in Section 7-6-1 Flexible Pavement Requirements - LCN Conversion, A/C Code C for:

The thickness (h) is shown at 20 inches with an LCN of 53.

For these conditions, the weight on one Main Landing Gear is 25 000 kg (55 125 lb).

### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

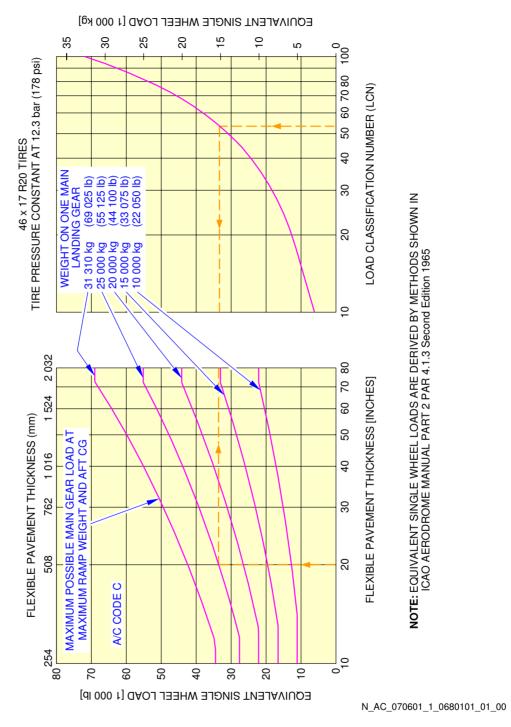
7-6-1 Flexible Pavement Requirements - LCN Conversion

\*\*ON A/C A320-100 A320-200

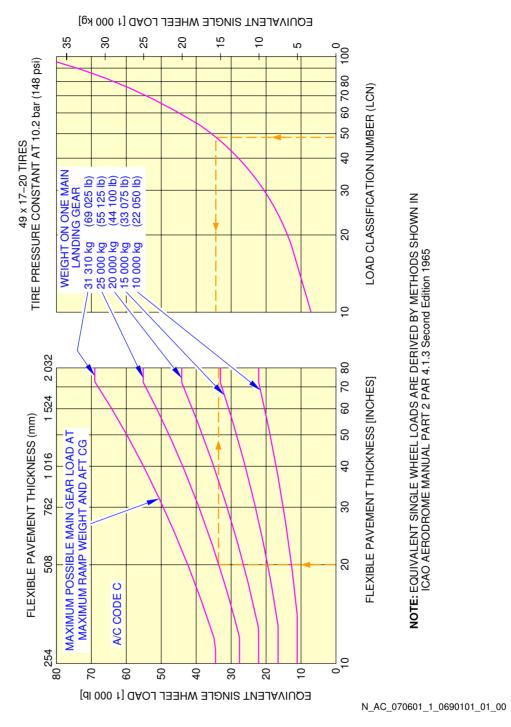
Flexible Pavement Requirements - LCN Conversion

1. This section gives Flexible Pavement Requirements - LCN Conversion.

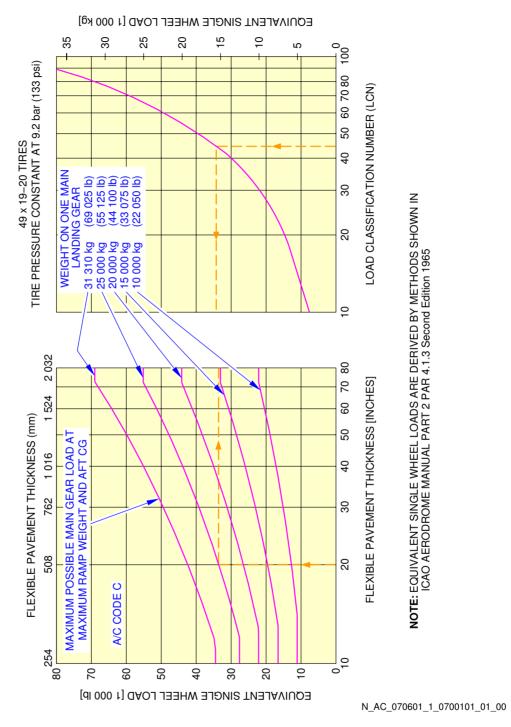
<u>NOTE</u>: For A/C Code definition, refer to chapter 7-1-0.



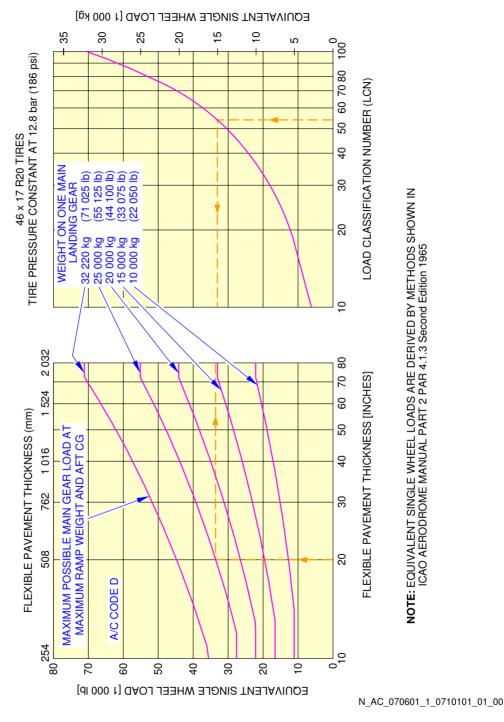
Flexible Pavement Requirements - LCN Conversion FIGURE 1



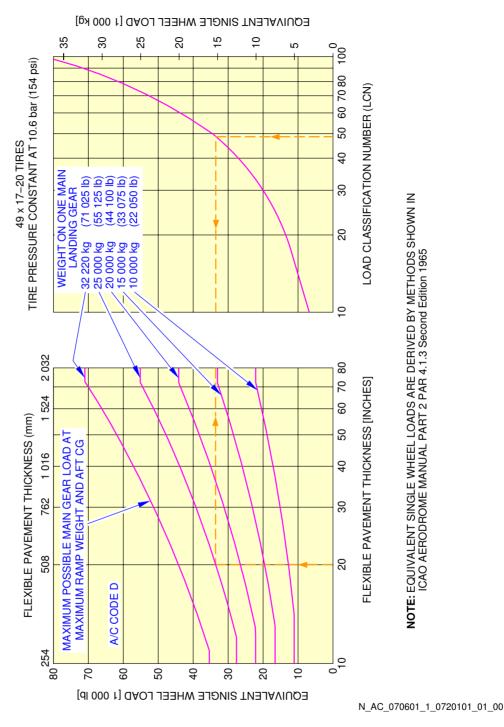
Flexible Pavement Requirements - LCN Conversion FIGURE 2



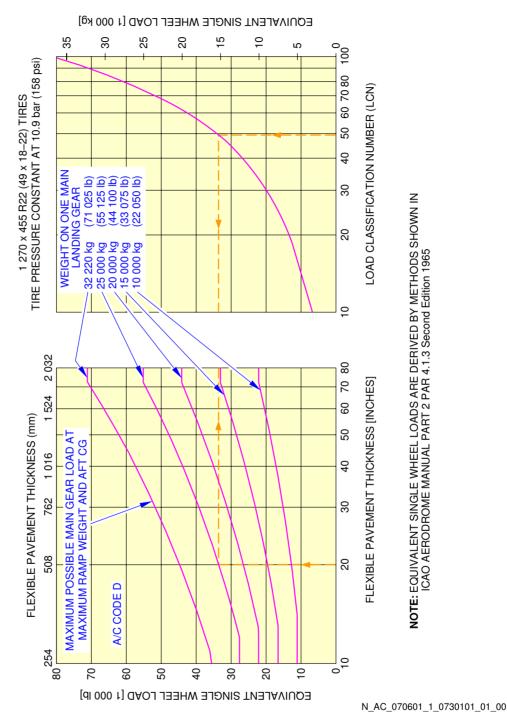
Flexible Pavement Requirements - LCN Conversion FIGURE 3



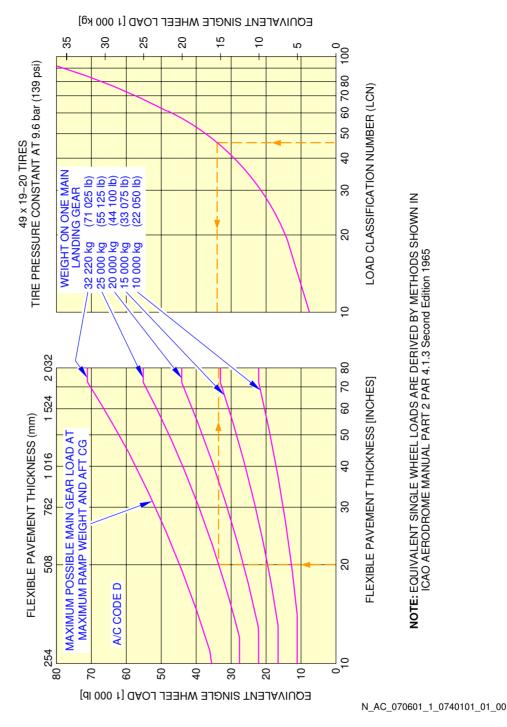
Flexible Pavement Requirements - LCN Conversion FIGURE 4



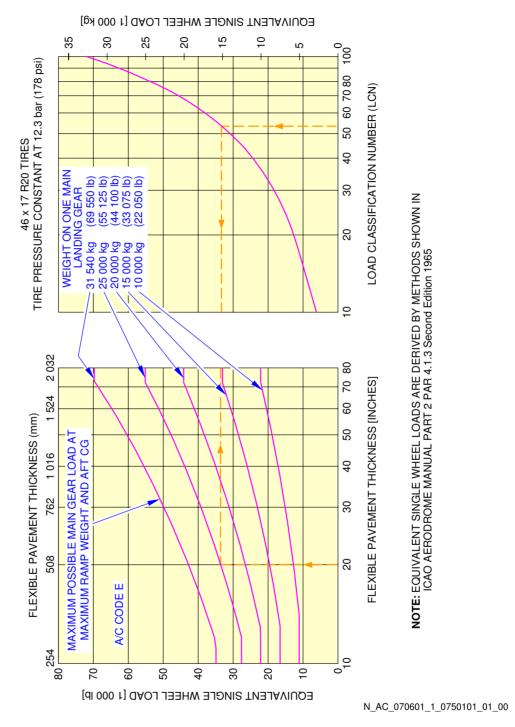
Flexible Pavement Requirements - LCN Conversion FIGURE 5



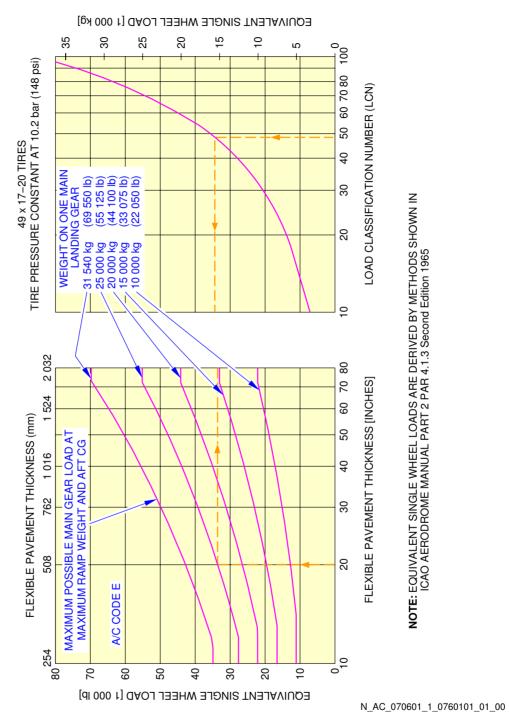
Flexible Pavement Requirements - LCN Conversion FIGURE 6



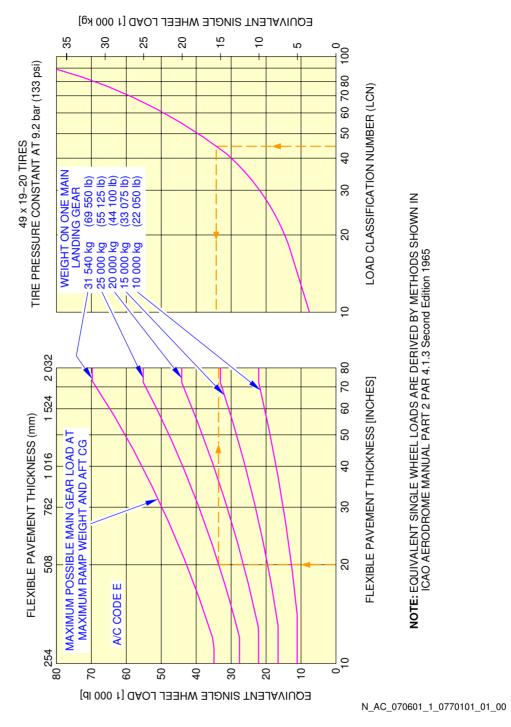
Flexible Pavement Requirements - LCN Conversion FIGURE 7



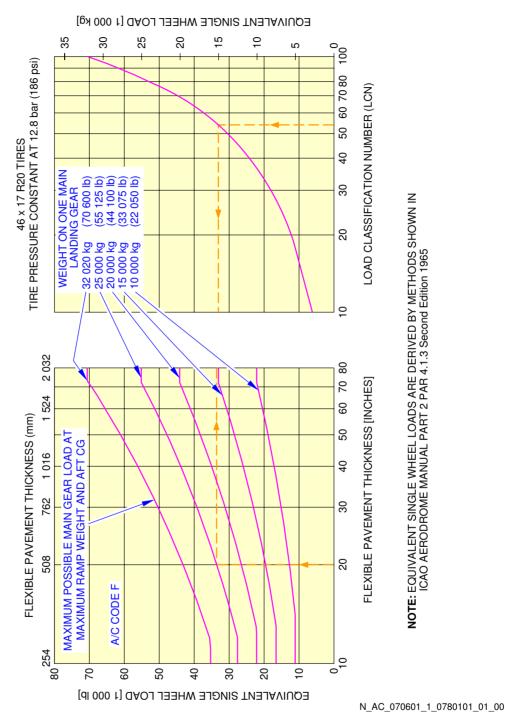
Flexible Pavement Requirements - LCN Conversion FIGURE 8



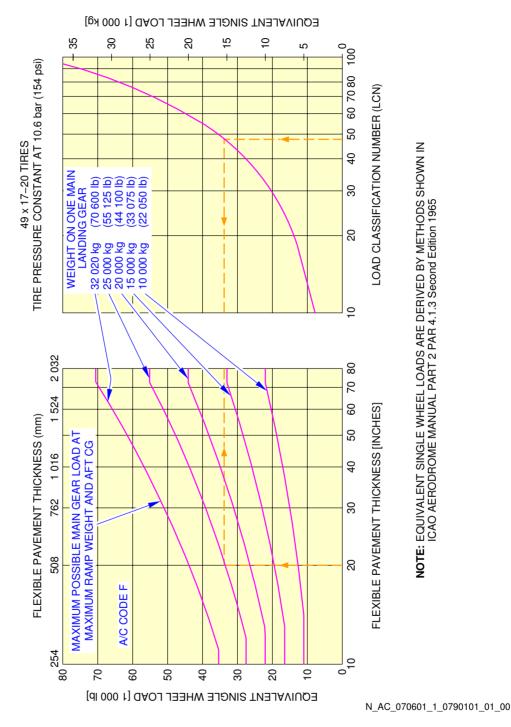
Flexible Pavement Requirements - LCN Conversion FIGURE 9



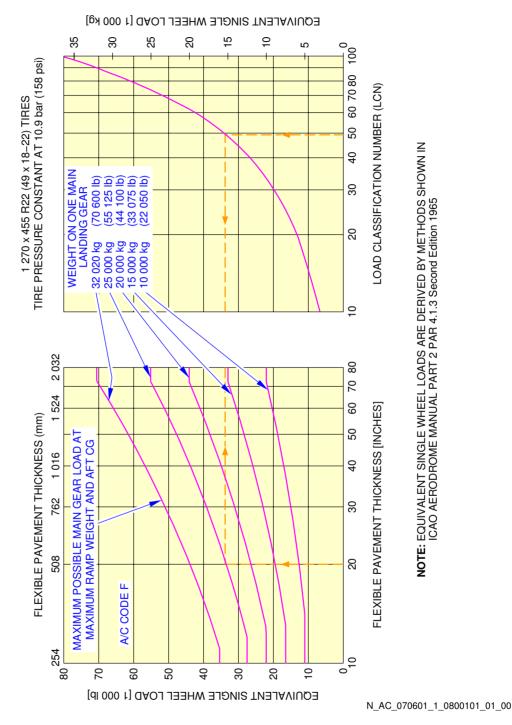
Flexible Pavement Requirements - LCN Conversion FIGURE 10



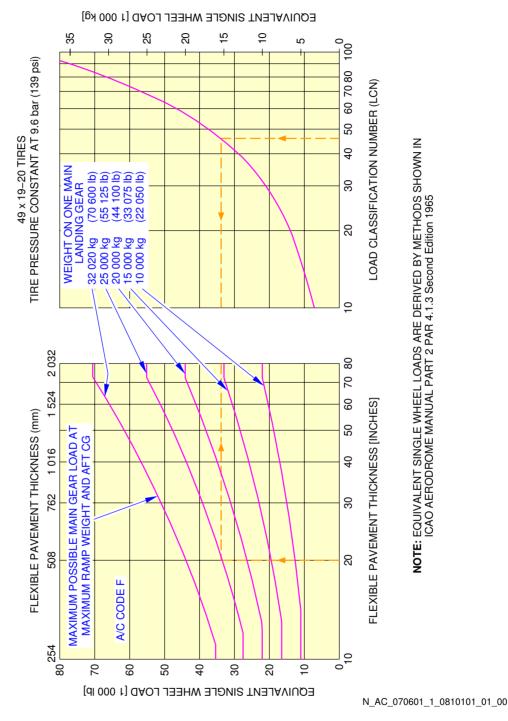
Flexible Pavement Requirements - LCN Conversion FIGURE 11



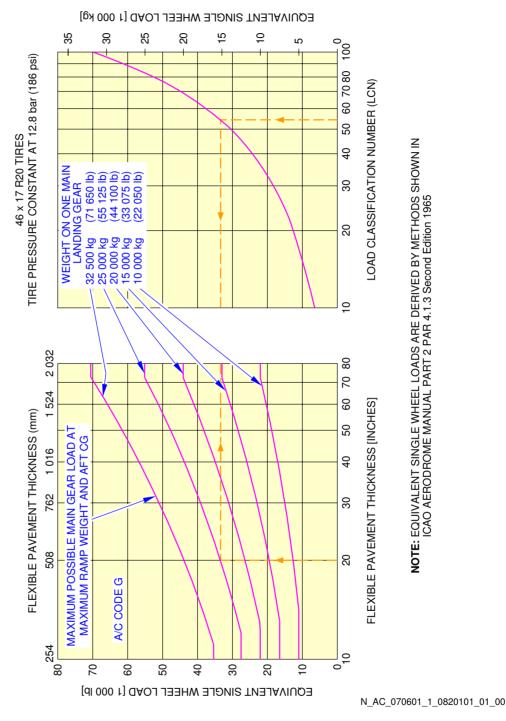
Flexible Pavement Requirements - LCN Conversion FIGURE 12



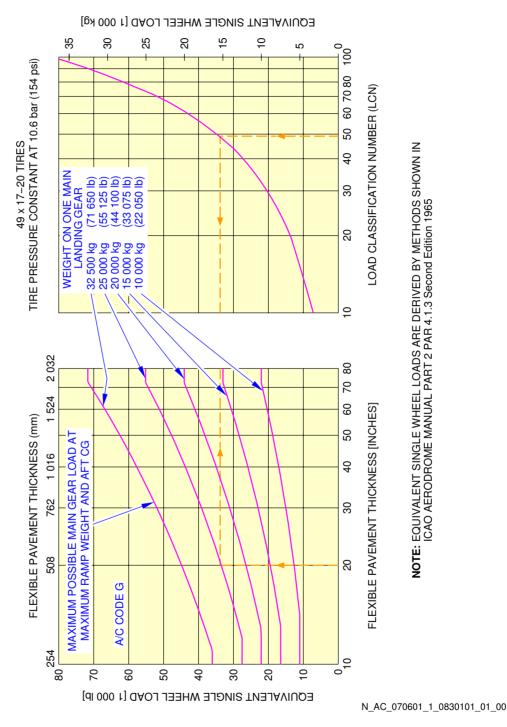
Flexible Pavement Requirements - LCN Conversion FIGURE 13



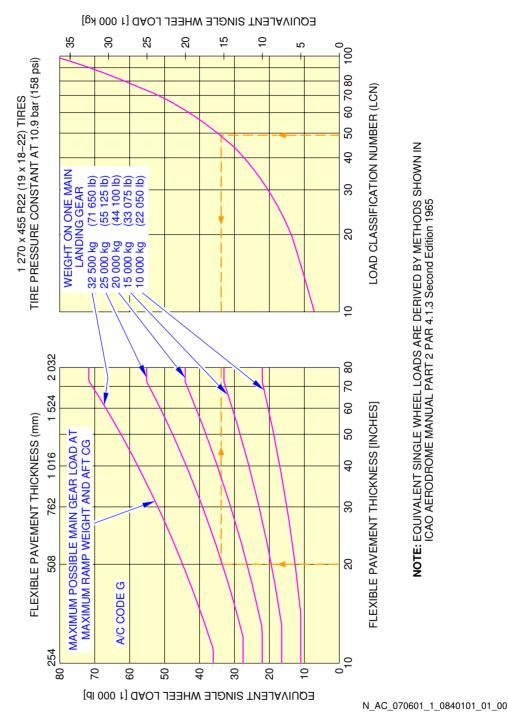
Flexible Pavement Requirements - LCN Conversion FIGURE 14



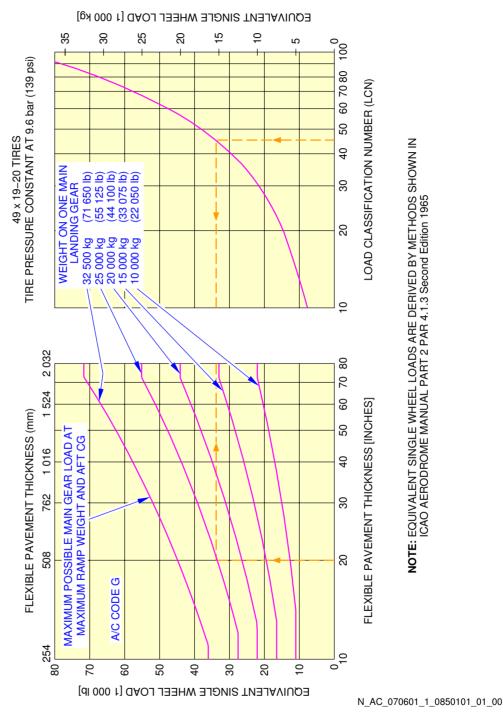
Flexible Pavement Requirements - LCN Conversion FIGURE 15



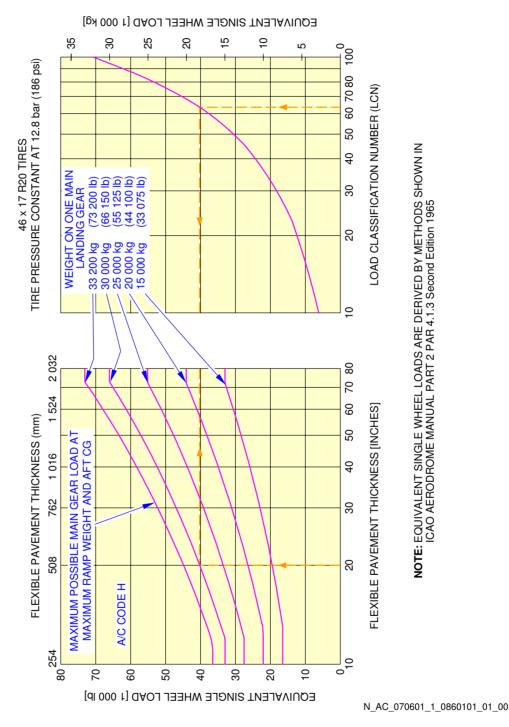
Flexible Pavement Requirements - LCN Conversion FIGURE 16



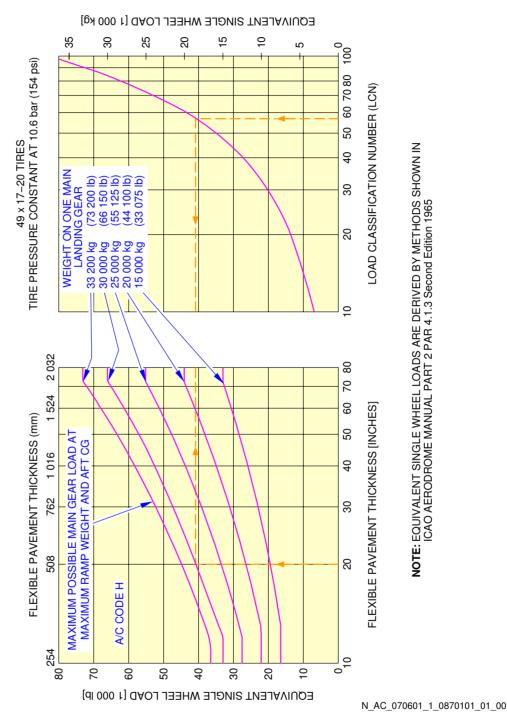
Flexible Pavement Requirements - LCN Conversion FIGURE 17



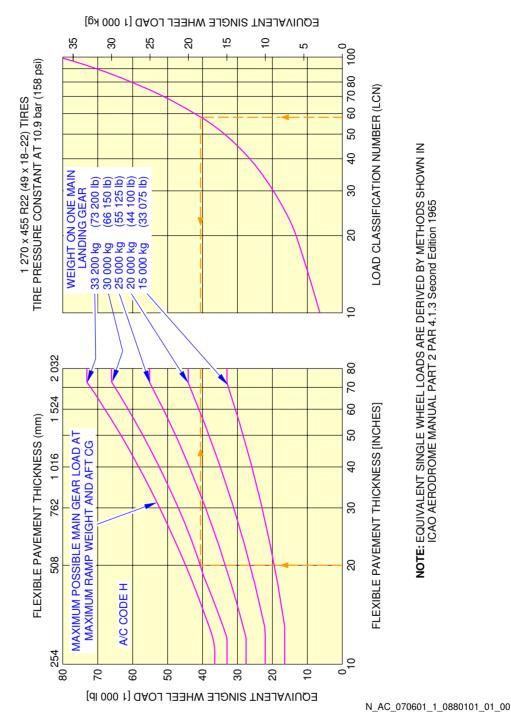
Flexible Pavement Requirements - LCN Conversion FIGURE 18



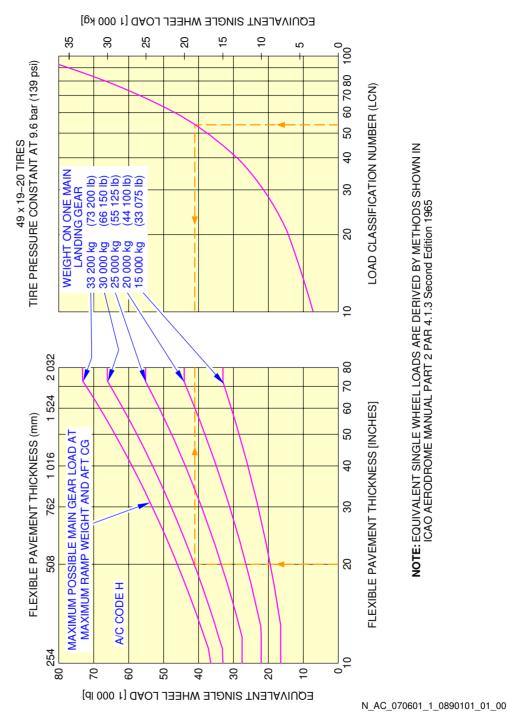
Flexible Pavement Requirements - LCN Conversion FIGURE 19



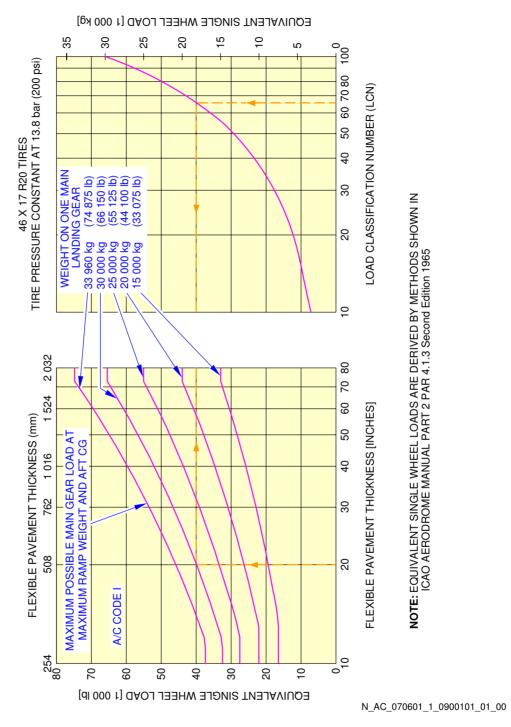
Flexible Pavement Requirements - LCN Conversion FIGURE 20



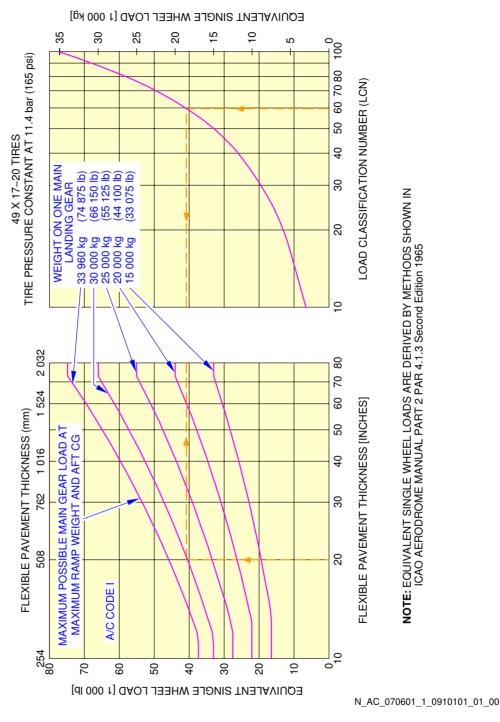
Flexible Pavement Requirements - LCN Conversion FIGURE 21



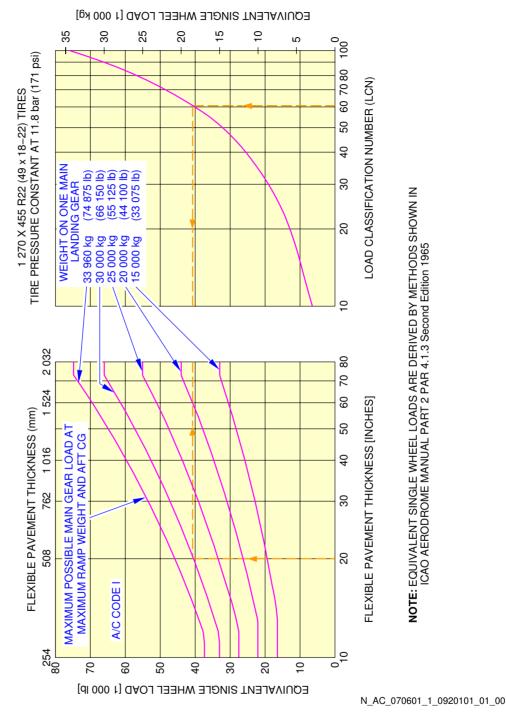
Flexible Pavement Requirements - LCN Conversion FIGURE 22



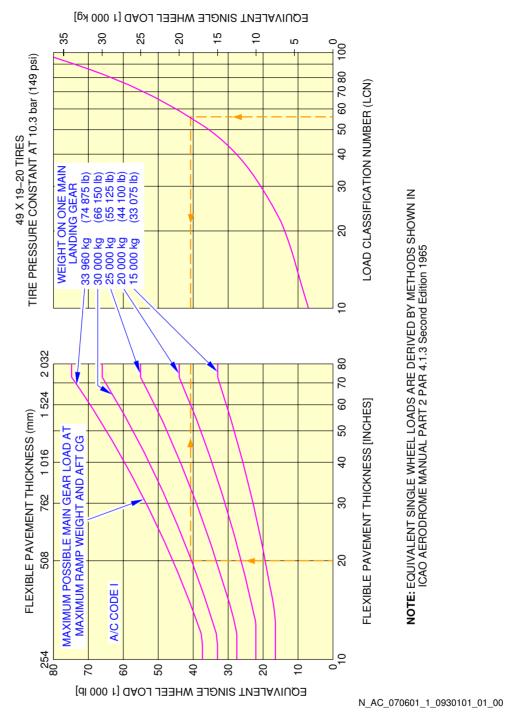
Flexible Pavement Requirements - LCN Conversion FIGURE 23



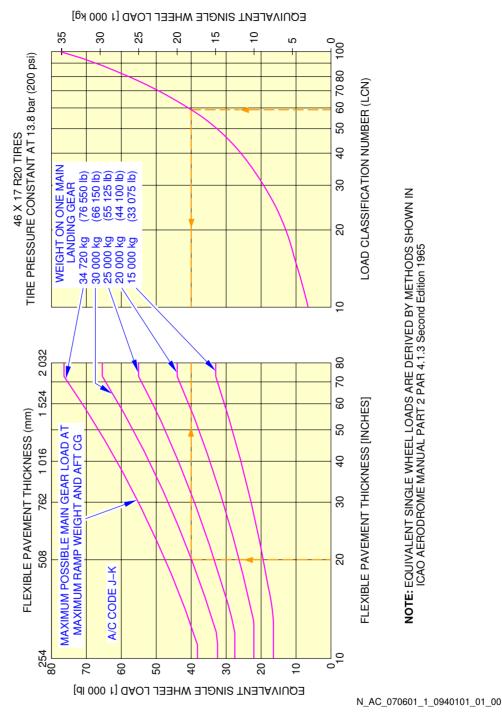
Flexible Pavement Requirements - LCN Conversion FIGURE 24



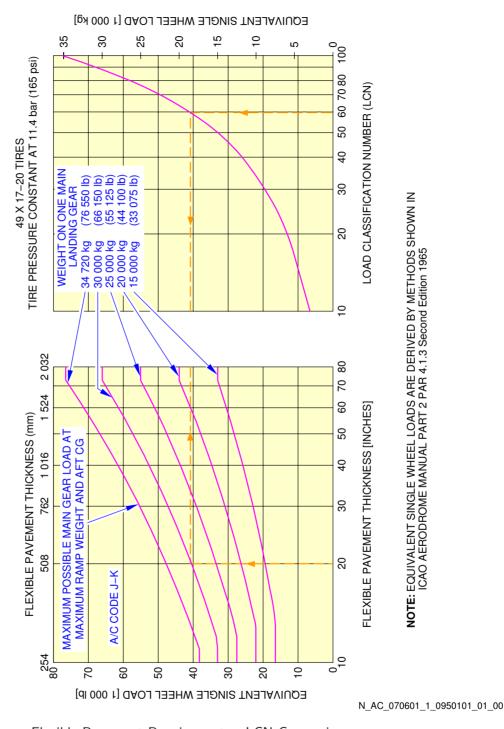
Flexible Pavement Requirements - LCN Conversion Flexible Pavement Requirements - LCN Conversion FIGURE 25



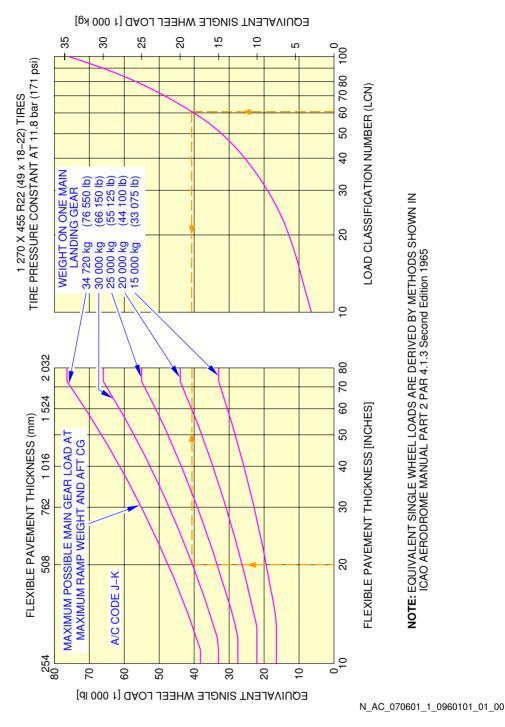
Flexible Pavement Requirements - LCN Conversion FIGURE 26



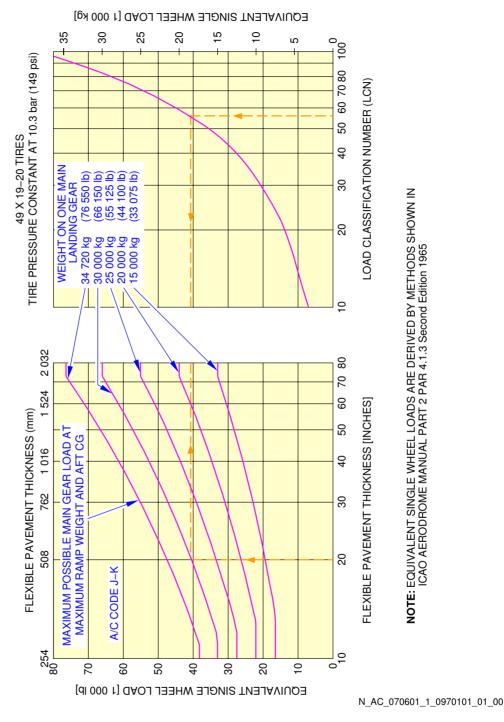
Flexible Pavement Requirements - LCN Conversion FIGURE 27



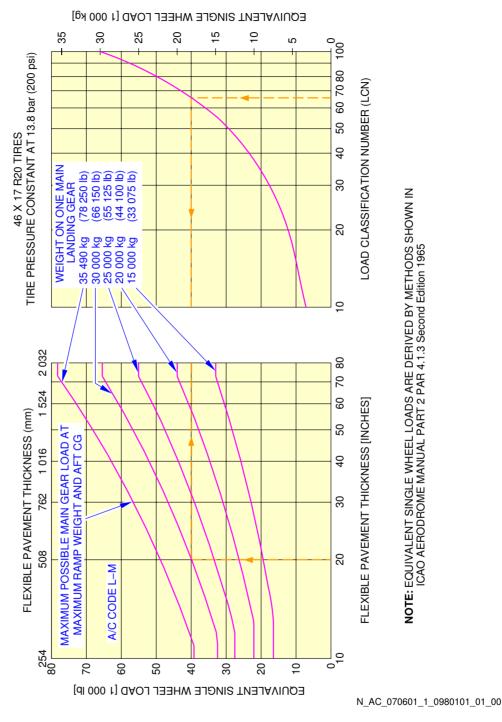
Flexible Pavement Requirements - LCN Conversion FIGURE 28



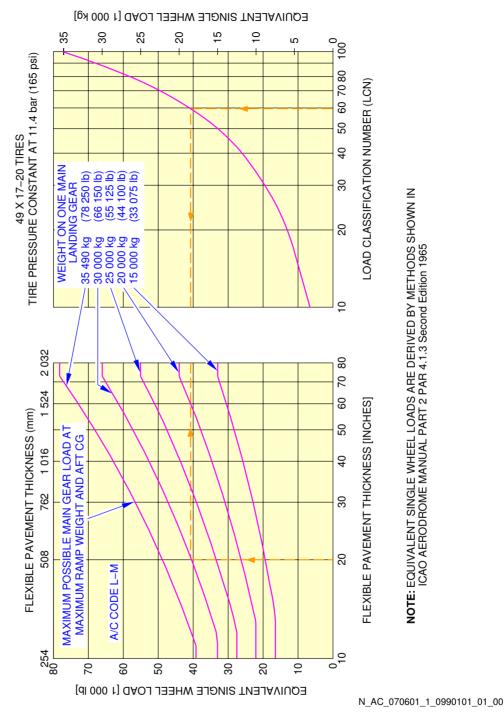
Flexible Pavement Requirements - LCN Conversion FIGURE 29



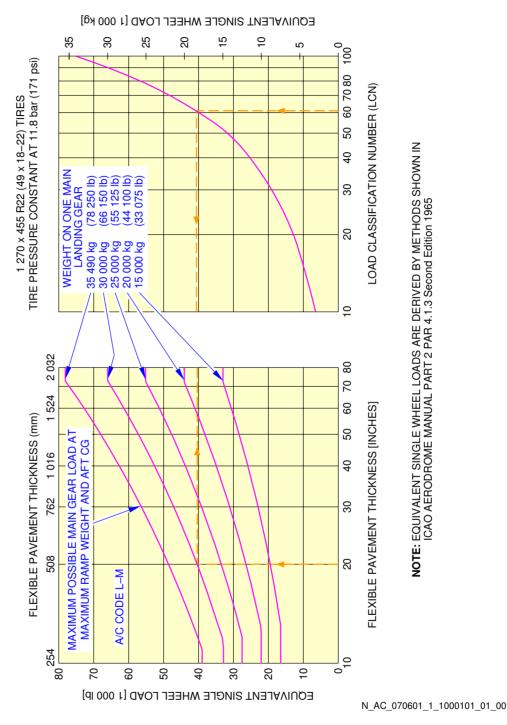
Flexible Pavement Requirements - LCN Conversion FIGURE 30



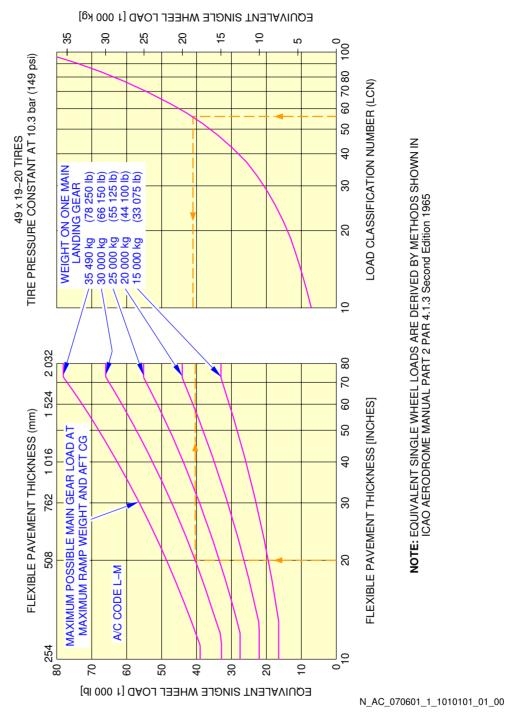
Flexible Pavement Requirements - LCN Conversion FIGURE 31



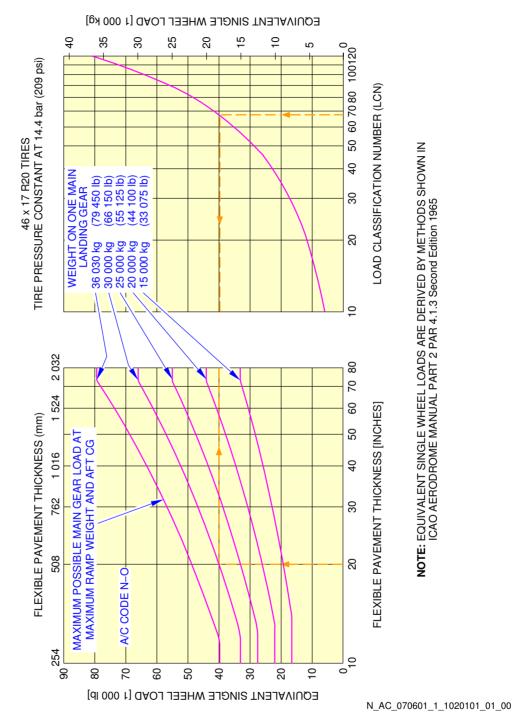
Flexible Pavement Requirements - LCN Conversion FIGURE 32



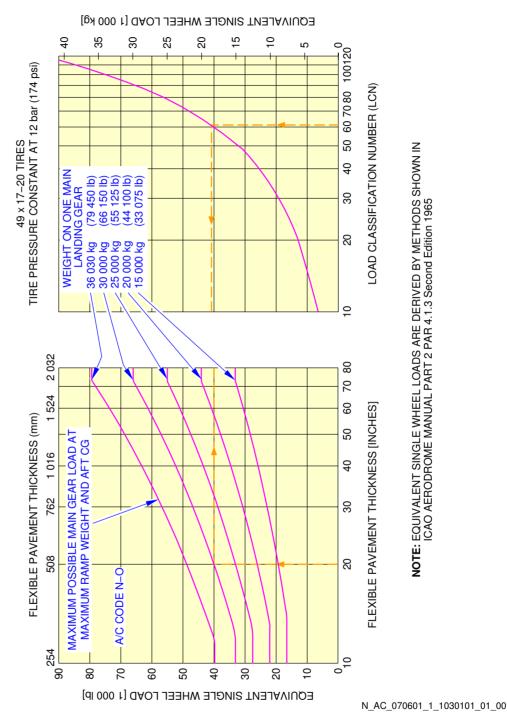
Flexible Pavement Requirements - LCN Conversion FIGURE 33



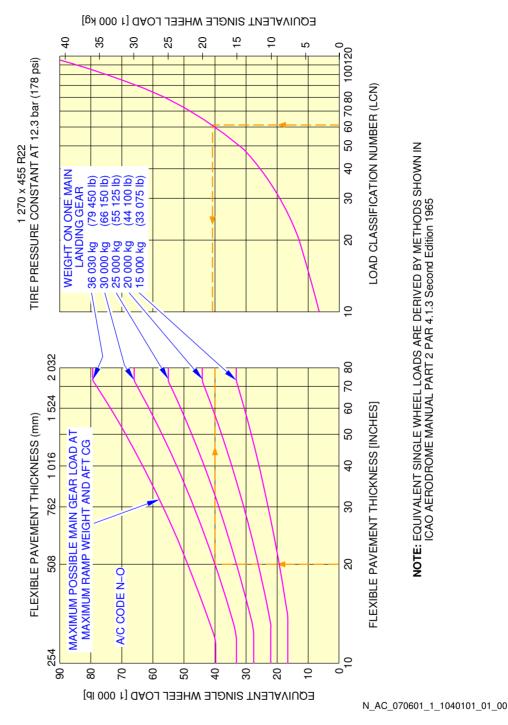
Flexible Pavement Requirements - LCN Conversion FIGURE 34



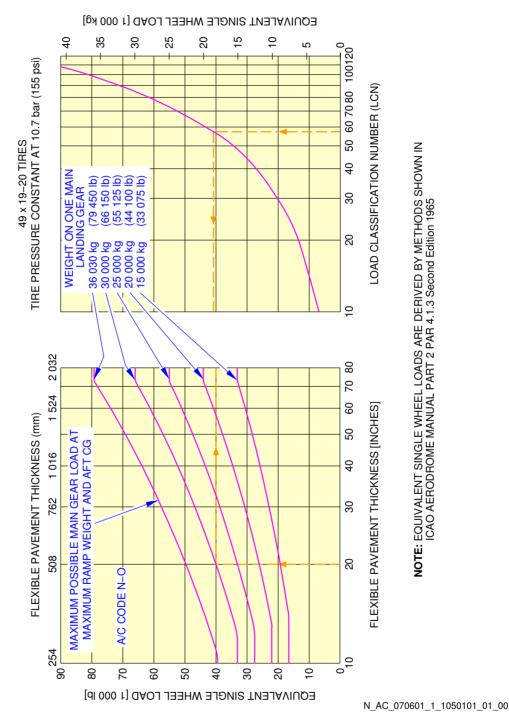
Flexible Pavement Requirements - LCN Conversion FIGURE 35



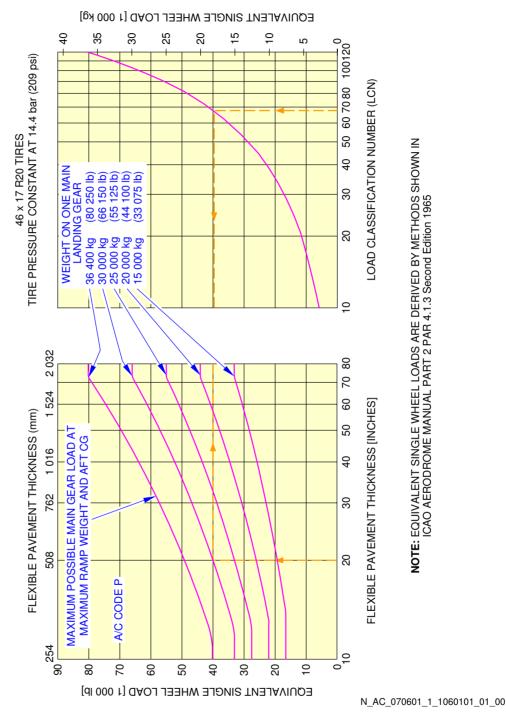
Flexible Pavement Requirements - LCN Conversion FIGURE 36



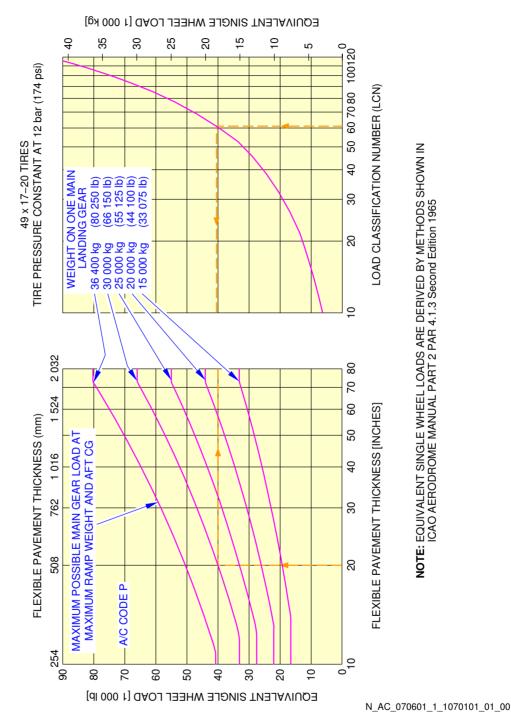
Flexible Pavement Requirements - LCN Conversion FIGURE 37



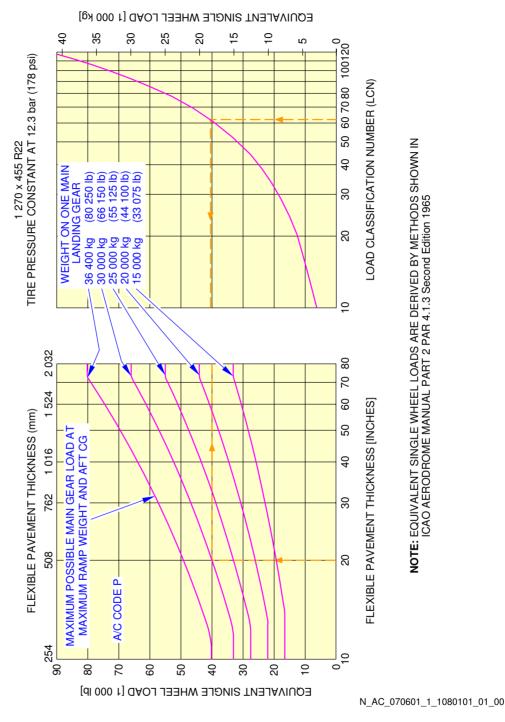
Flexible Pavement Requirements - LCN Conversion FIGURE 38



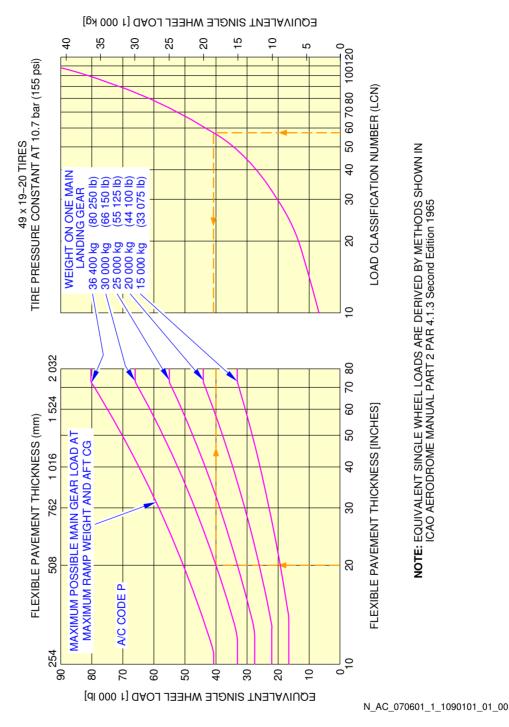
Flexible Pavement Requirements - LCN Conversion FIGURE 39



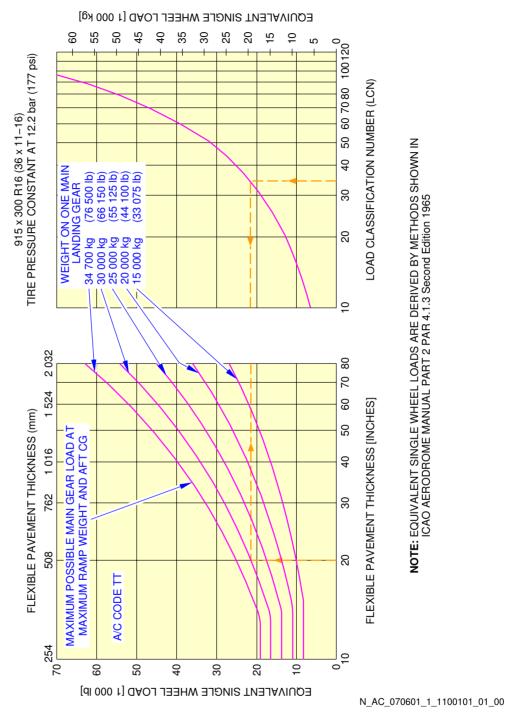
Flexible Pavement Requirements - LCN Conversion FIGURE 40



Flexible Pavement Requirements - LCN Conversion FIGURE 41



Flexible Pavement Requirements - LCN Conversion FIGURE 42



Flexible Pavement Requirements - LCN Conversion FIGURE 43

#### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

### 7-7-0 Rigid Pavement Requirements - Portland Cement Association Design Method

\*\*ON A/C A320-100 A320-200

Rigid Pavement Requirements - Portland Cement Association Design Method

1. General

In order to determine a particular Rigid Pavement Thickness, the Subgrade Modulus (k), the allowable working stress and the weight on one Main Landing Gear must be known.

In the example shown in Section 7-7-1 Rigid Pavement Requirements (PCA), A/C Code C for:

- a "k" value of 80 MN/m³ (300 lbf/in³)
- an allowable working stress of 32 kg/cm<sup>2</sup> (450 lbf/in<sup>2</sup>)
- the load on one MLG of 50 000 kg (110 225 lb).

For these conditions, the Rigid Pavement Thickness is 23 cm (9.1 in).

### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

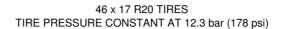
7-7-1 Rigid Pavement Requirements - Portland Cement Association Design Method

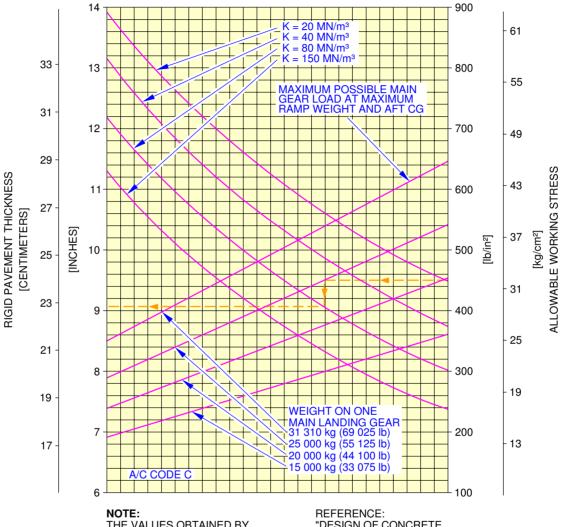
\*\*ON A/C A320-100 A320-200

Rigid Pavement Requirements - Portland Cement Association Design Method

1. This section gives Rigid Pavement Requirements.

<u>NOTE</u>: For A/C Code definition, refer to chapter 7-1-0.



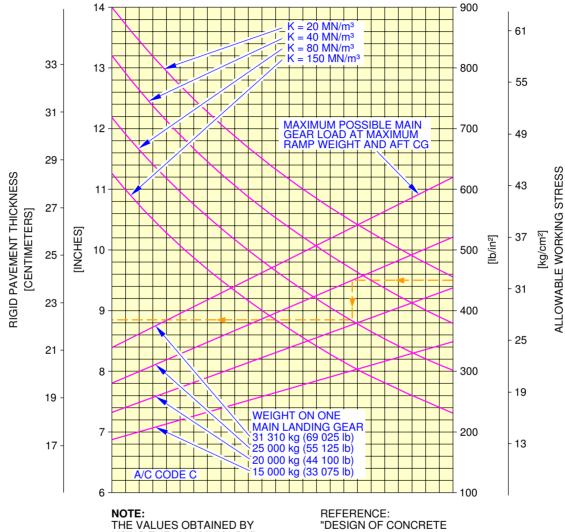


THE VALUES OBTAINED BY
USING THE MAXIMUM LOAD
REFERENCE LINE AND ANY
VALUES FOR K ARE EXACT. FOR
LOADS LESS THAN MAXIMUM,
THE CURVES ARE EXACT FOR
K = 80 MN/m³ BUT DEVIATE
SLIGHTLY FOR ANY OTHER
VALUES OF K

REFERENCE:
"DESIGN OF CONCRETE
AIRPORT PAVEMENTS" AND
"COMPUTER PROGRAM FOR
AIRPORT PAVEMENT DESIGN –
PROGRAM PDILB" PORTLAND
CEMENT ASSOCIATION

N\_AC\_070701\_1\_0650101\_01\_00





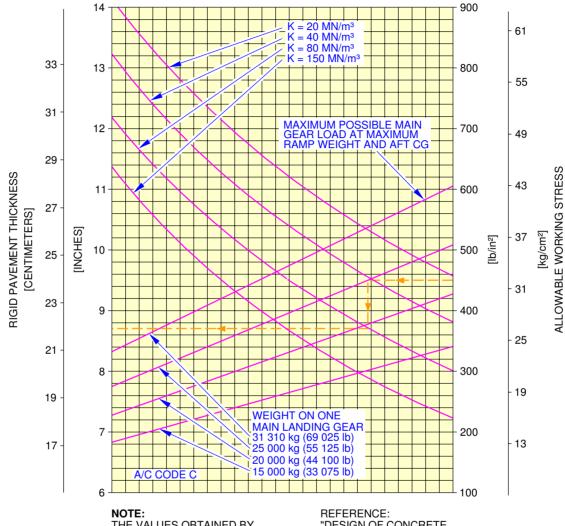
THE VALUES OBTAINED BY
USING THE MAXIMUM LOAD
REFERENCE LINE AND ANY
VALUES FOR K ARE EXACT. FOR
LOADS LESS THAN MAXIMUM,
THE CURVES ARE EXACT FOR
K = 80 MN/m³ BUT DEVIATE
SLIGHTLY FOR ANY OTHER

VALUES OF K

REFERENCE:
"DESIGN OF CONCRETE
AIRPORT PAVEMENTS" AND
"COMPUTER PROGRAM FOR
AIRPORT PAVEMENT DESIGN –
PROGRAM PDILB" PORTLAND
CEMENT ASSOCIATION

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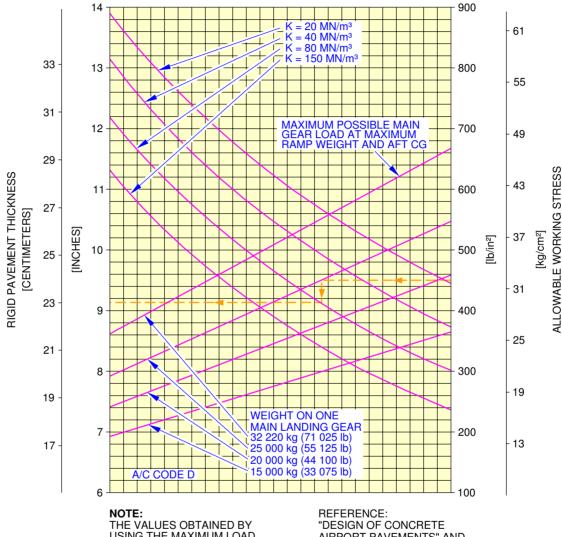


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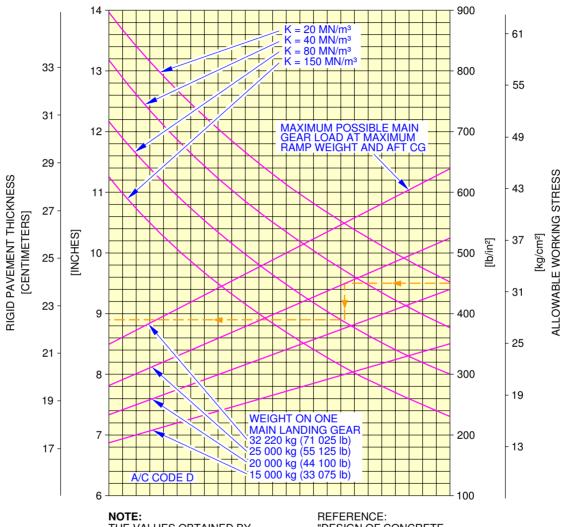


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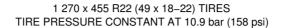


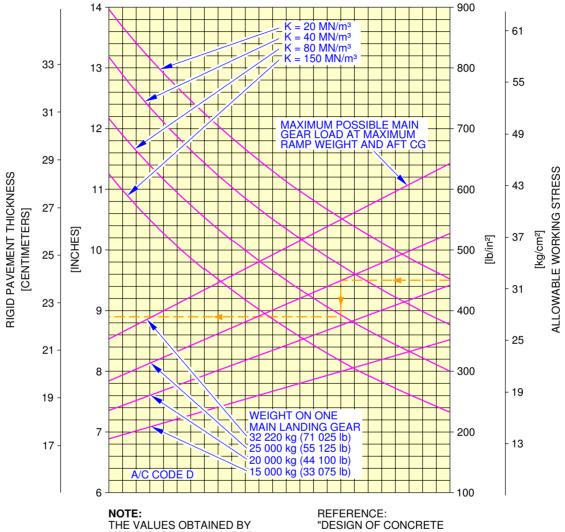


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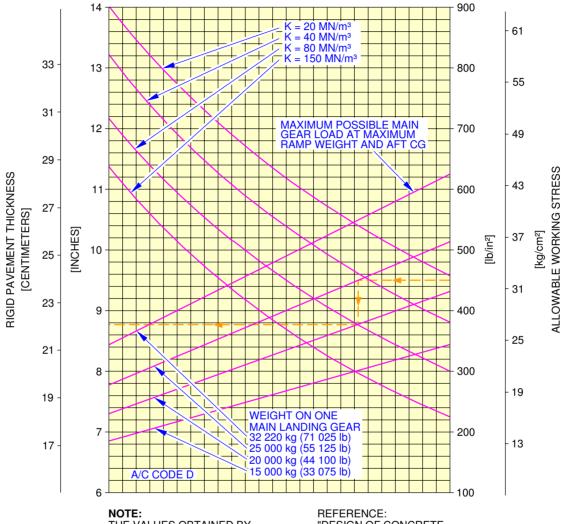
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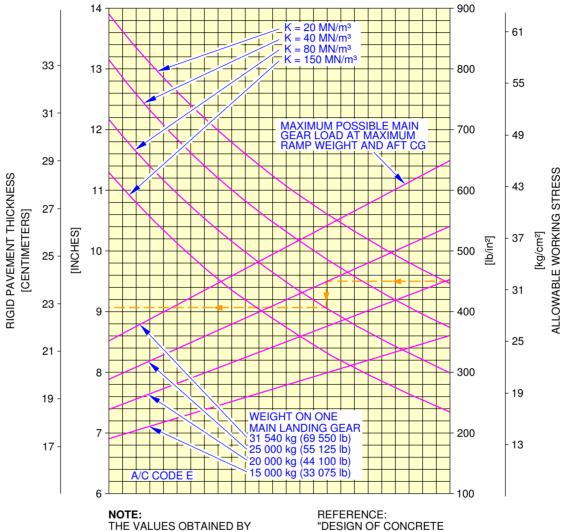


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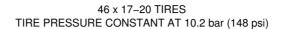


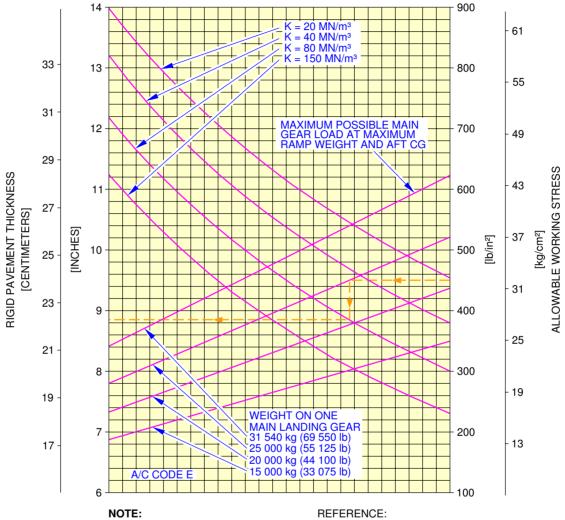
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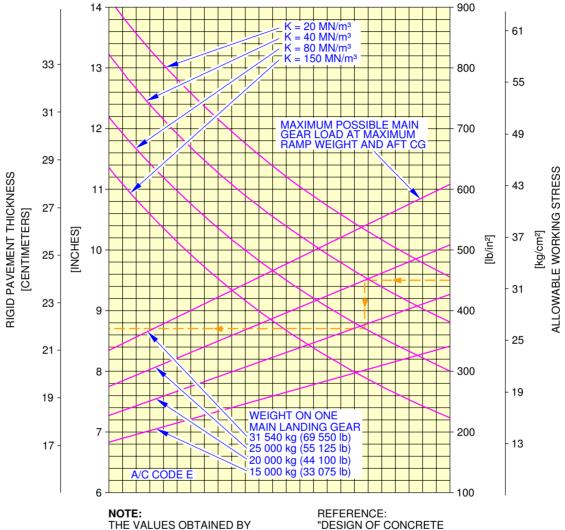


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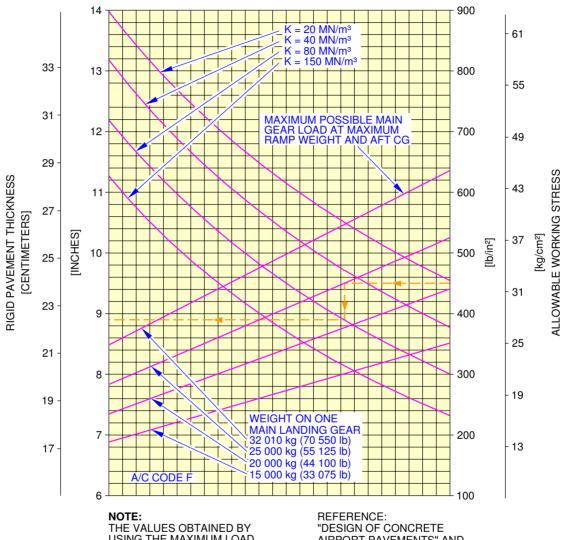
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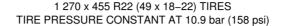


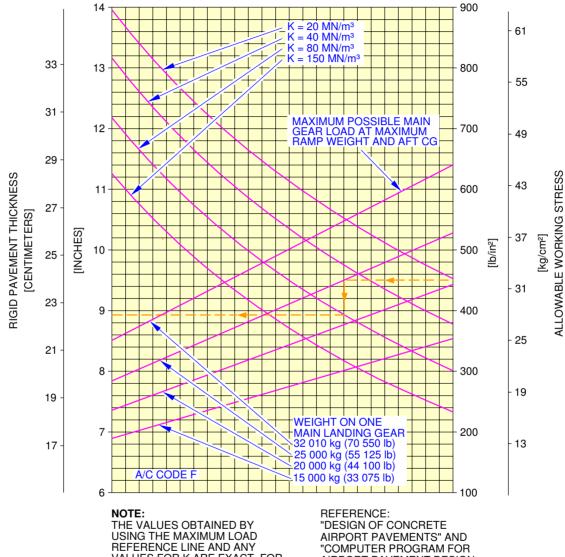


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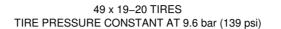


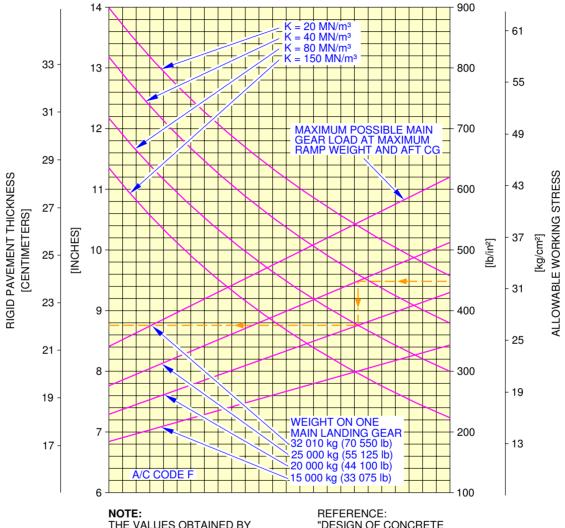


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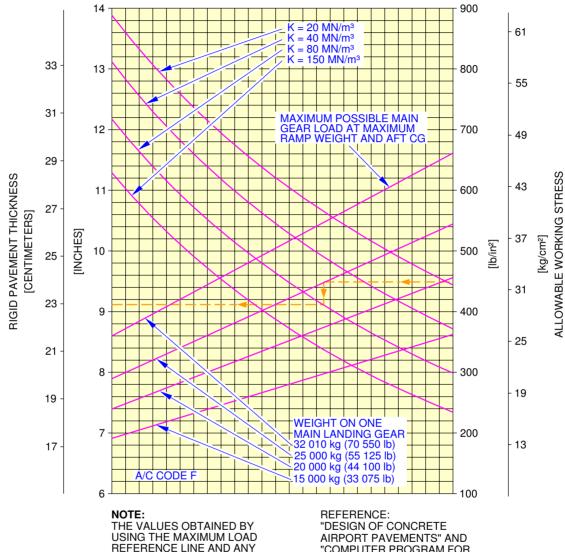
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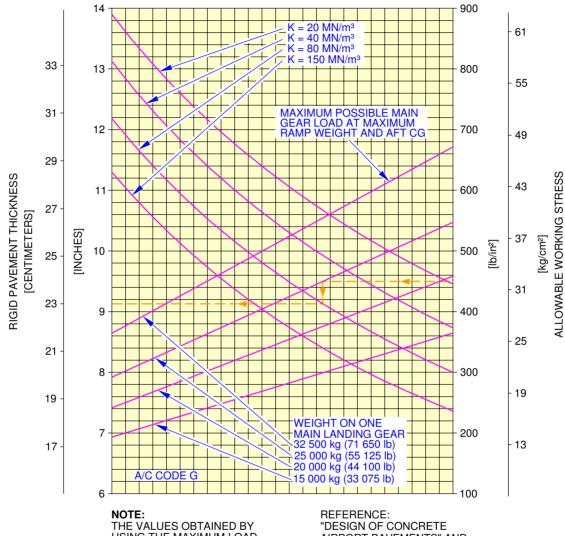


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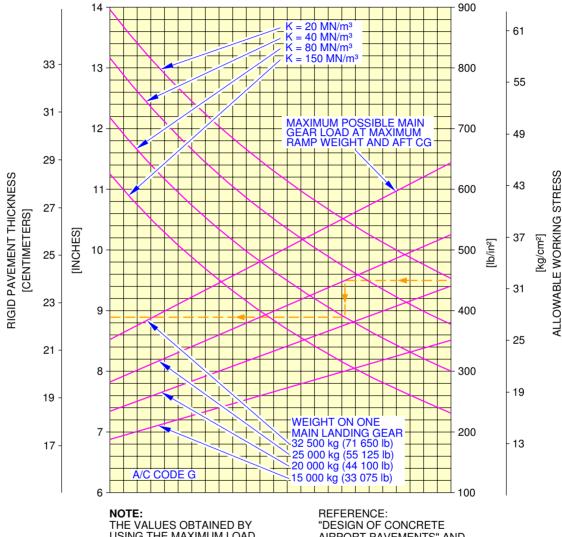


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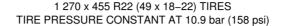


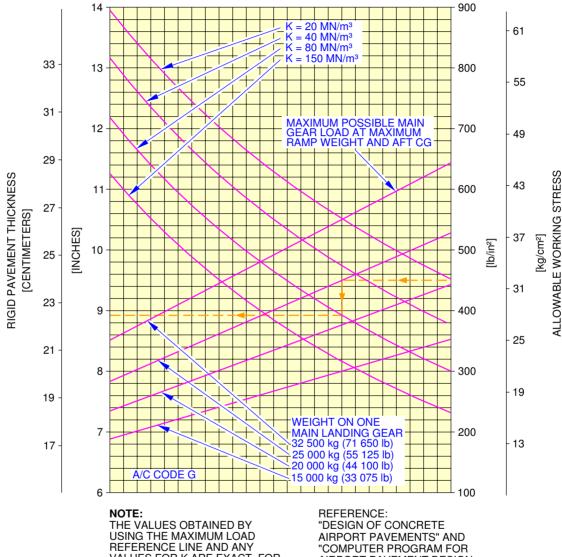


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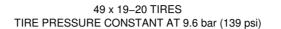


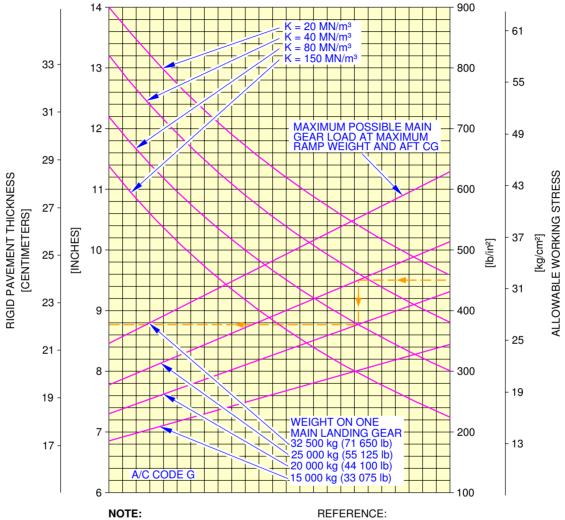


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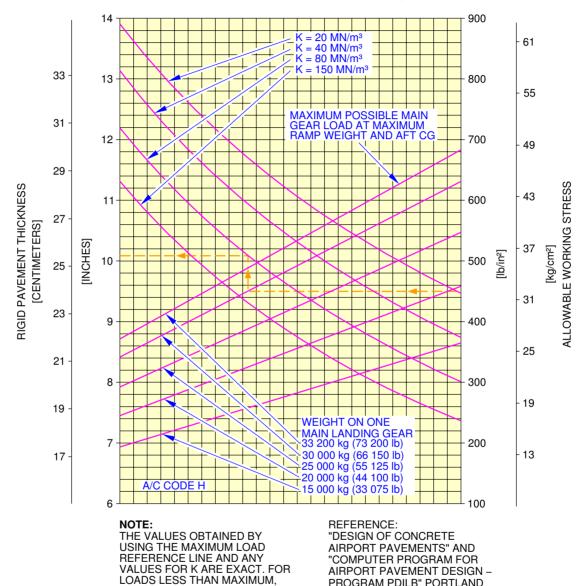
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Rigid Pavement Requirements (PCA) FIGURE 19

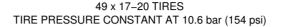
THE CURVES ARE EXACT FOR

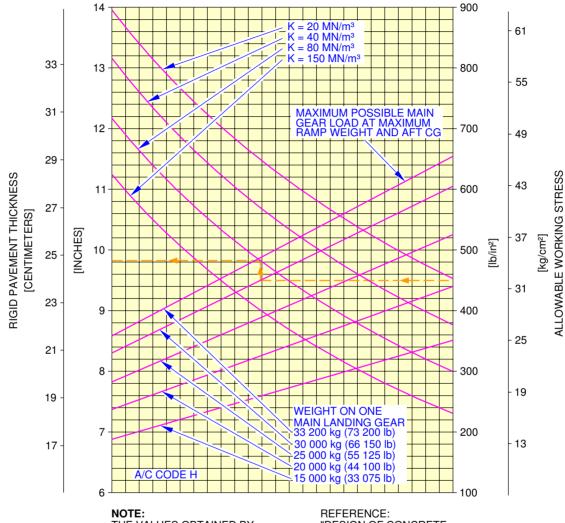
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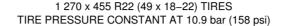


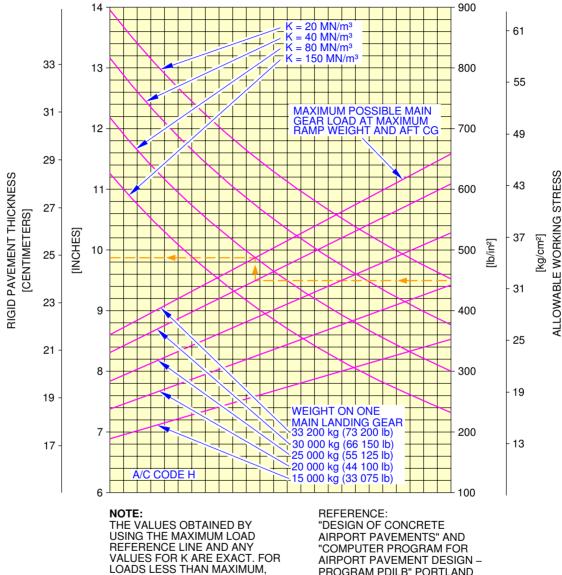


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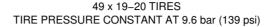
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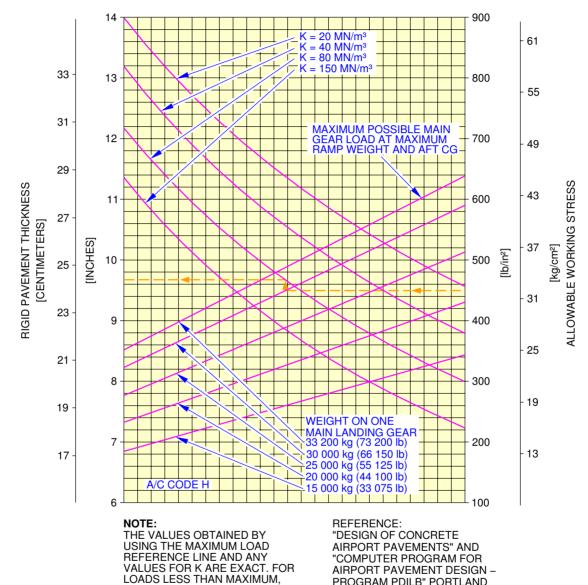
Rigid Pavement Requirements (PCA) FIGURE 21

THE CURVES ARE EXACT FOR

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Rigid Pavement Requirements (PCA) FIGURE 22

THE CURVES ARE EXACT FOR

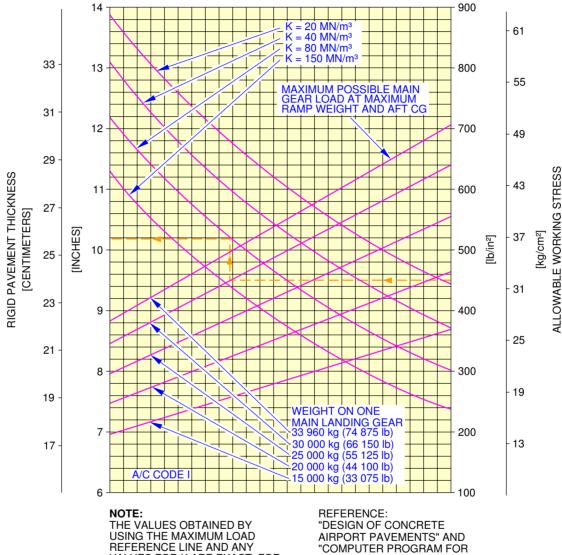
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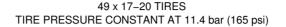


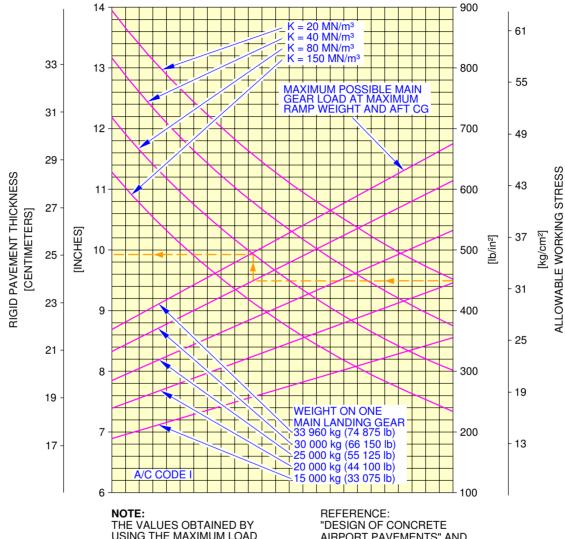


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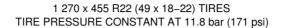


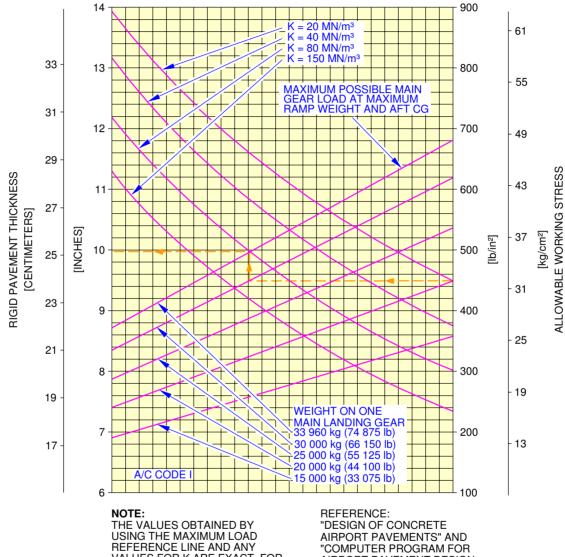


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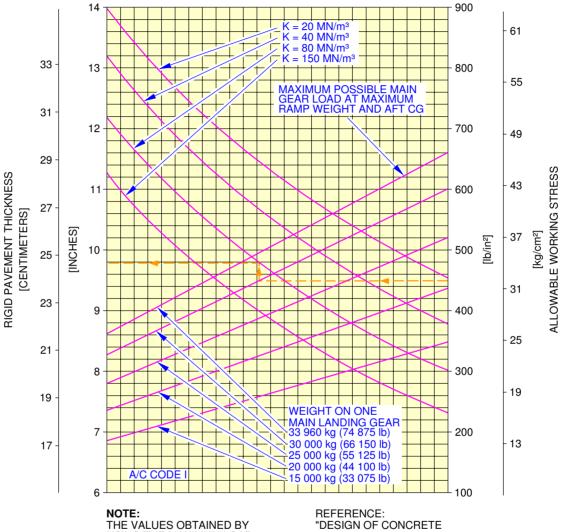
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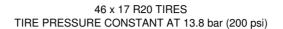
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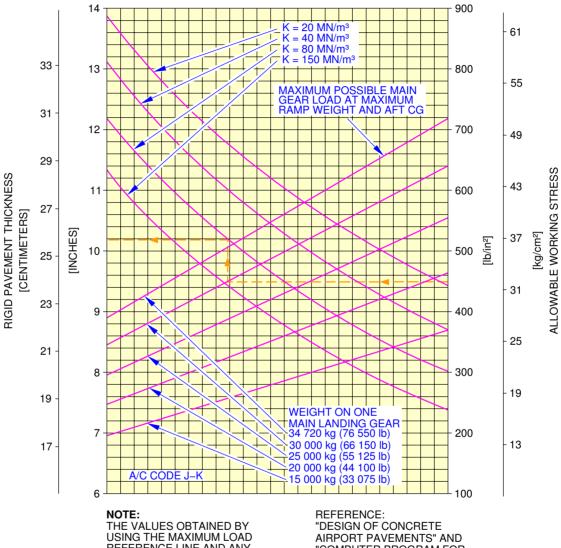
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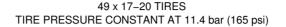


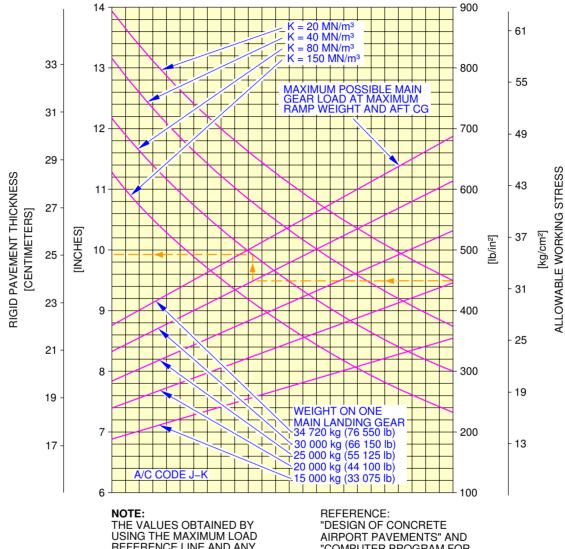
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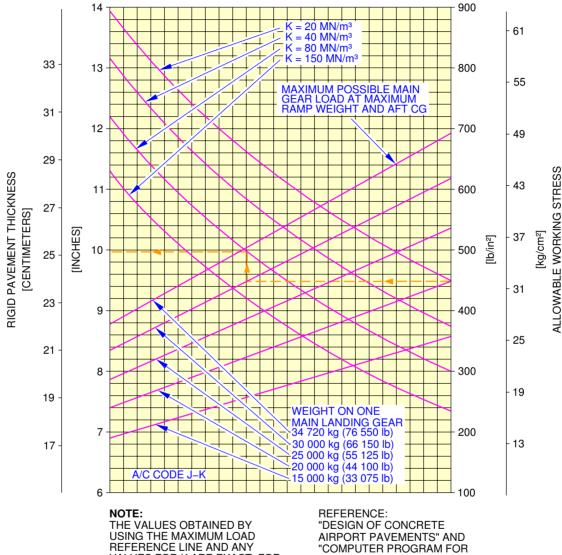
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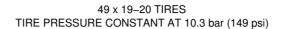


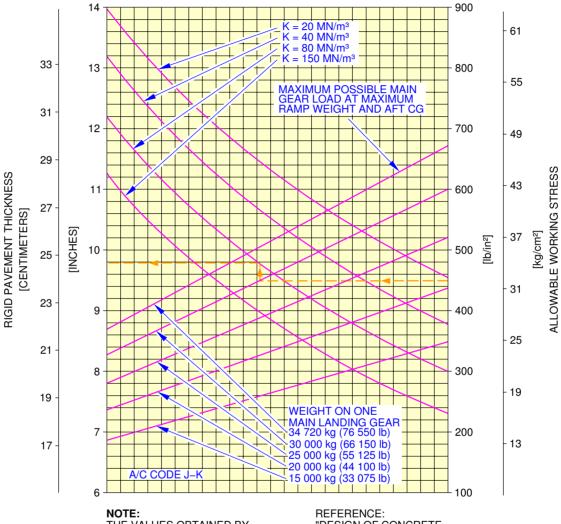


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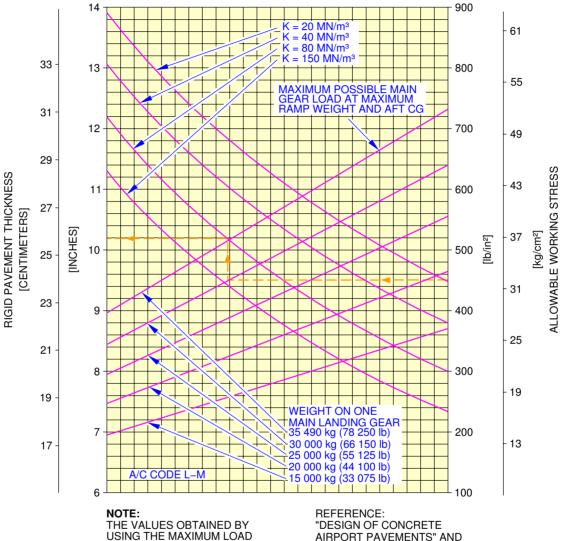
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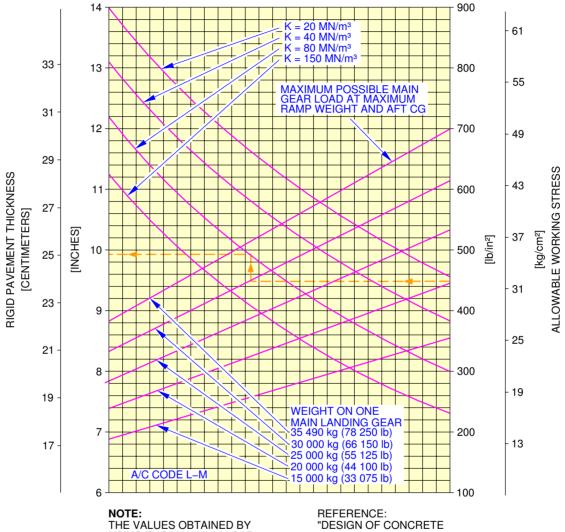
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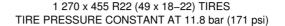


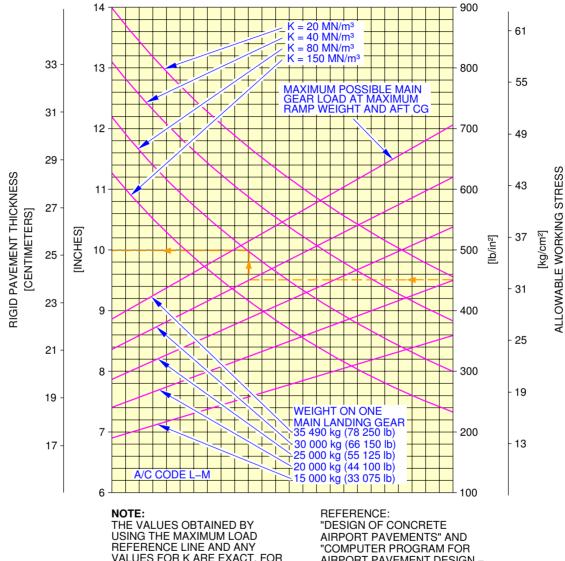
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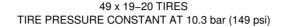


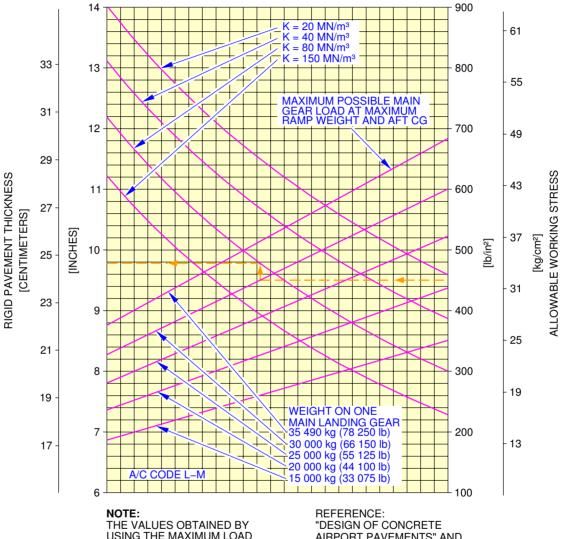


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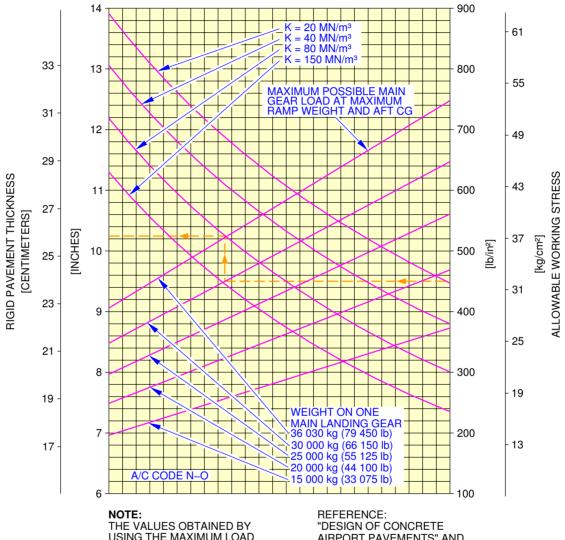


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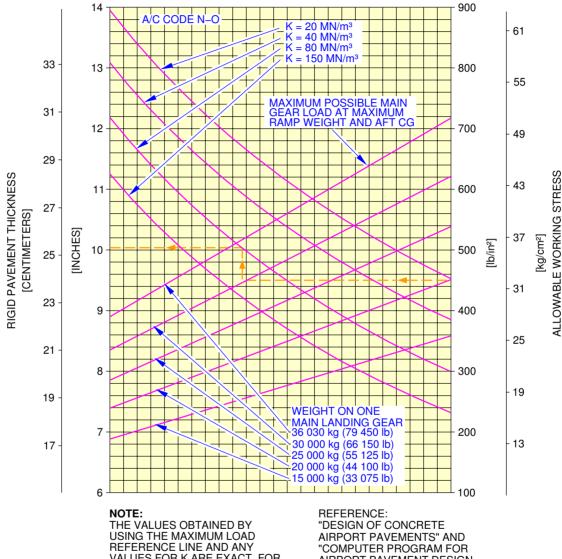


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AIRPORT PAVEMENTS" AND
"COMPUTER PROGRAM FOR
AIRPORT PAVEMENT DESIGN –
PROGRAM PDILB" PORTLAND
CEMENT ASSOCIATION

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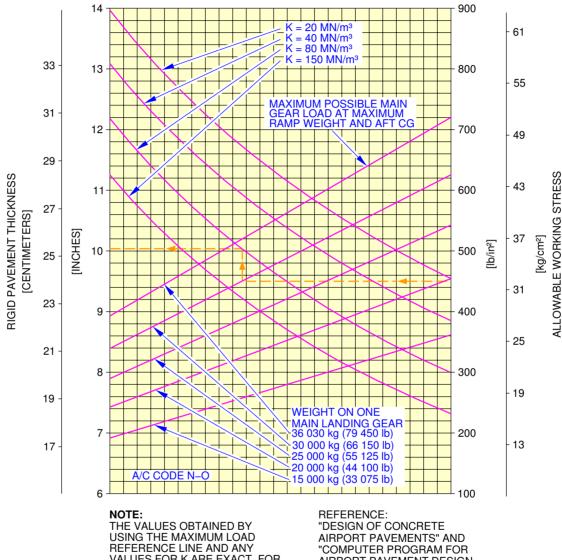


VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m3 BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K

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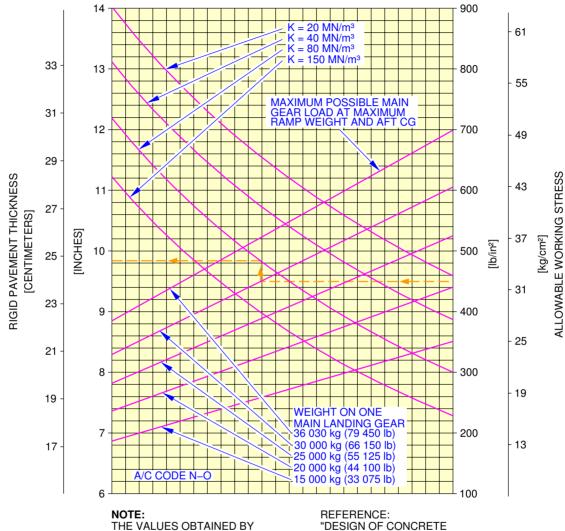


VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m3 BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K

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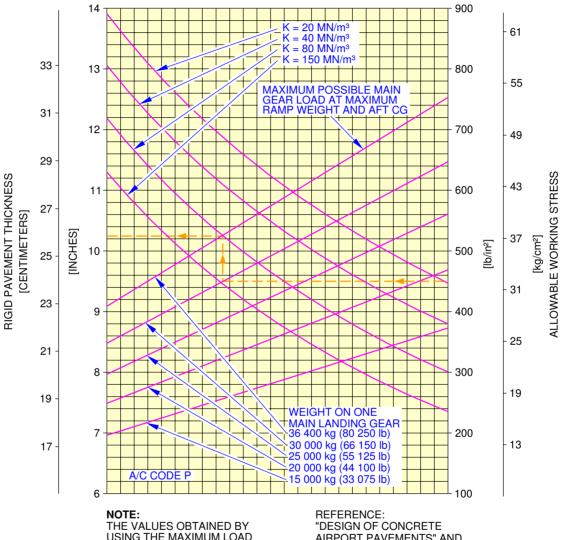
THE VALUES OBTAINED BY
USING THE MAXIMUM LOAD
REFERENCE LINE AND ANY
VALUES FOR K ARE EXACT. FOR
LOADS LESS THAN MAXIMUM,
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K = 80 MN/m³ BUT DEVIATE
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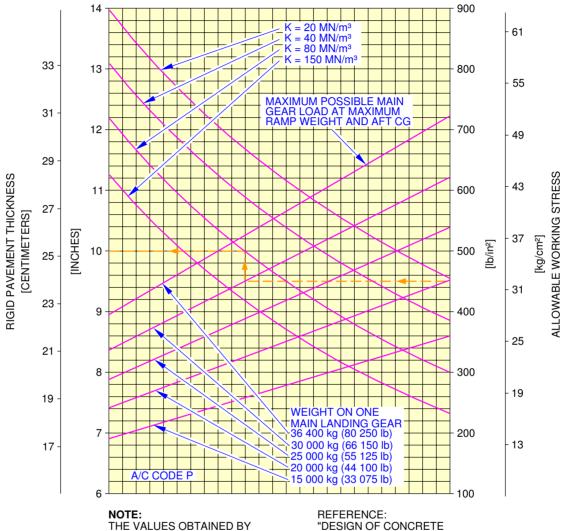


THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m³ BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K

REFERENCE:
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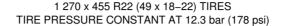


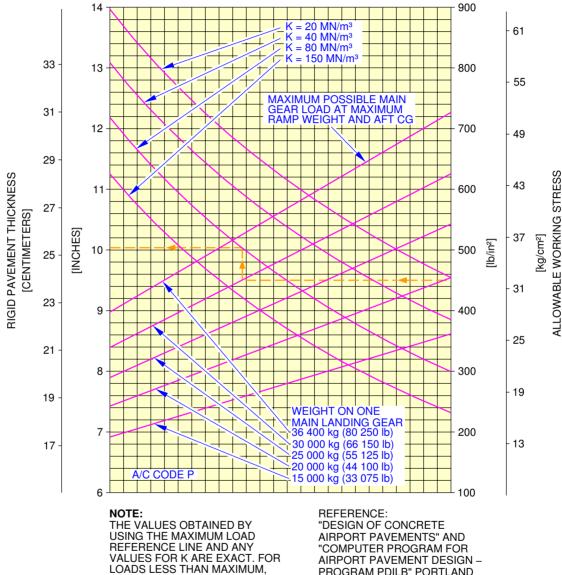


THE VALUES OBTAINED BY
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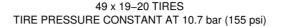
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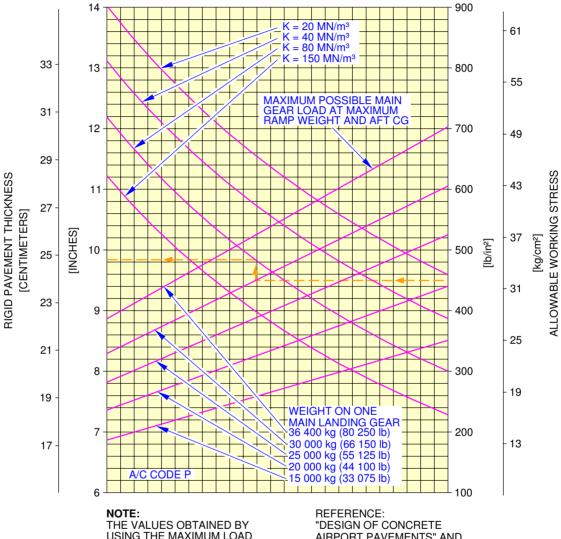
Rigid Pavement Requirements (PCA) FIGURE 41

THE CURVES ARE EXACT FOR

K = 80 MN/m3 BUT DEVIATE SLIGHTLY FOR ANY OTHER

VALUES OF K

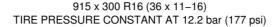


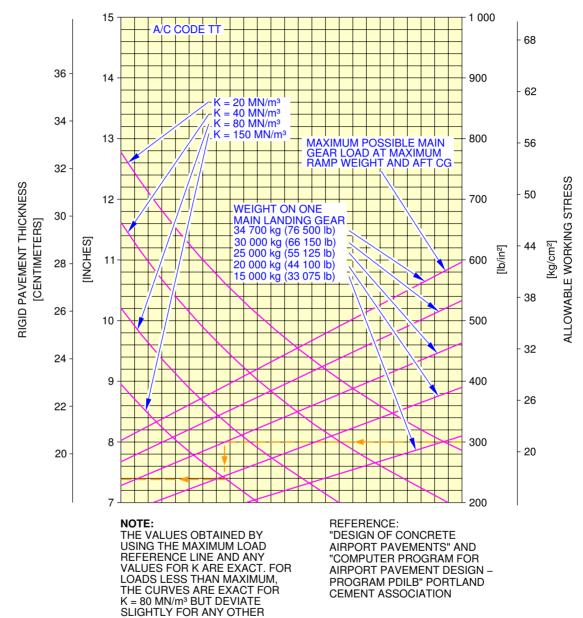


THE VALUES OBTAINED BY
USING THE MAXIMUM LOAD
REFERENCE LINE AND ANY
VALUES FOR K ARE EXACT. FOR
LOADS LESS THAN MAXIMUM,
THE CURVES ARE EXACT FOR
K = 80 MN/m³ BUT DEVIATE
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VALUES OF K

REFERENCE:
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"COMPUTER PROGRAM FOR
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PROGRAM PDILB" PORTLAND
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Rigid Pavement Requirements (PCA) FIGURE 43

VALUES OF K

#### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

# 7-8-0 Rigid Pavement Requirements - LCN Conversion

\*\*ON A/C A320-100 A320-200

# Rigid Pavement Requirements - LCN Conversion

#### 1. General

In order to determine the airplane weight that can be accommodated on a particular Rigid Pavement, both the LCN of the pavement and the Radius of Relative Stiffness (L) must be known.

In the example shown in Section 7-8-2 Rigid Pavement Requirements - LCN Conversion, A/C Code C for:

The Radius of Relative Stiffness is shown at 30 inches with an LCN of 57.

For these conditions, the weight on one Main Landing Gear is 25 000 kg (55 125 lb).

#### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

# 7-8-1 Radius of Relative Stiffness

\*\*ON A/C A320-100 A320-200

# Radius of Relative Stiffness

1. This section gives Radius of Relative Stiffness.

#### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

\*\*ON A/C A320-100 A320-200

# RADIUS OF RELATIVE STIFFNESS (L) VALUES IN INCHES

$$L = \sqrt[4]{\frac{Ed^3}{12(1-\mu^2)k}} = 24.1652 \sqrt[4]{\frac{d^3}{k}}$$

WHERE  $E = Young's Modulus = 4 \times 10^6 psi$ 

k = Subgrade Modulus, lbf/in<sup>3</sup>

d = Rigid Pavement Thickness, inches

 $\mu$  = Poisson's Ratio = 0.15

d	k=75	k=100	k=150	k=200	k=250	k=300	k=350	k=400	k=550
6.0	31.48	29.30	26.47	24.63	23.30	22.26	21.42	20.72	19.13
6.5	33.43	31.11	28.11	26.16	24.74	23.64	22.74	22.00	20.31
7.0	35.34	32.89	29.72	27.65	26.15	24.99	24.04	23.25	21.47
7.5	37.22	34.63	31.29	29.12	27.54	26.32	25.32	24.49	22.61
8.0	39.06	36.35	32.85	30.57	28.91	27.62	26.58	25.70	23.74
8.5	40.88	38.04	34.37	31.99	30.25	28.91	27.81	26.90	24.84
9.0	42.67	39.71	35.88	33.39	31.58	30.17	29.03	28.08	25.93
9.5	44.43	41.35	37.36	34.77	32.89	31.42	30.23	29.24	27.00
10.0	46.18	42.97	38.83	36.14	34.17	32.65	31.42	30.39	28.06
10.5	47.90	44.57	40.28	37.48	35.45	33.87	32.59	31.52	29.11
11.0	49.60	46.16	41.71	38.81	36.71	35.07	33.75	32.64	30.14
11.5	51.28	47.72	43.12	40.13	37.95	36.26	34.89	33.74	32.16
12.0	52.94	49.27	44.52	41.43	39.18	37.44	36.02	34.84	32.17
12.5	54.59	50.80	45.90	42.72	40.40	38.60	37.14	35.92	33.17
13.0	56.22	52.32	47.27	43.99	41.61	39.75	38.25	36.99	34.16
13.5	57.83	53.82	48.63	45.26	42.80	40.89	39.35	38.06	35.14
14.0	59.43	55.31	49.98	46.51	43.98	42.02	40.44	39.11	36.12
14.5	61.02	56.78	51.31	47.75	45.16	43.15	41.51	40.15	37.08
15.0	62.59	58.25	52.63	48.98	46.32	44.26	42.58	41.19	38.03
15.5	64.15	59.70	53.94	50.20	47.47	45.36	43.64	42.21	38.98
16.0	65.69	61.13	55.24	51.41	48.62	46.45	44.70	43.23	39.92
16.5	67.23	62.56	56.53	52.61	49.75	47.54	45.74	44.24	40.85
17.0	68.75	63.98	57.81	53.80	50.88	48.61	46.77	45.24	41.78
17.5	70.26	65.38	59.08	54.98	52.00	49.68	47.80	46.23	42.70
18.0	71.76	66.78	60.34	56.15	53.11	50.74	48.82	47.22	43.61
19.0	74.73	69.54	62.84	58.48	55.31	52.84	50.84	49.17	45.41
20.0	77.66	72.27	65.30	60.77	57.47	54.91	52.84	51.10	47.19
21.0	80.55	74.96	67.74	63.04	59.62	56.96	54.81	53.01	48.95
22.0	83.41	77.63	70.14	65.28	61.73	58.98	56.75	54.89	50.69
23.0	86.24	80.26	72.52	67.49	63.83	60.98	58.68	56.75	52.41
24.0	89.04	82.86	74.87	69.68	65.90	62.96	60.58	58.59	54.11
25.0	91.81	85.44	77.20	71.84	67.95	64.92	62.46	60.41	55.79

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Radius of Relative Stiffness (Reference: Portland Cement Association) FIGURE  $\mathbf{1}$ 

## AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

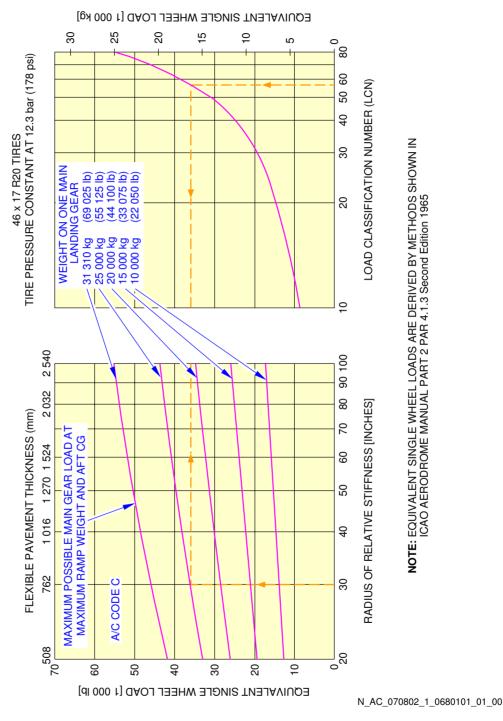
## 7-8-2 Rigid Pavement Requirements - LCN Conversion

\*\*ON A/C A320-100 A320-200

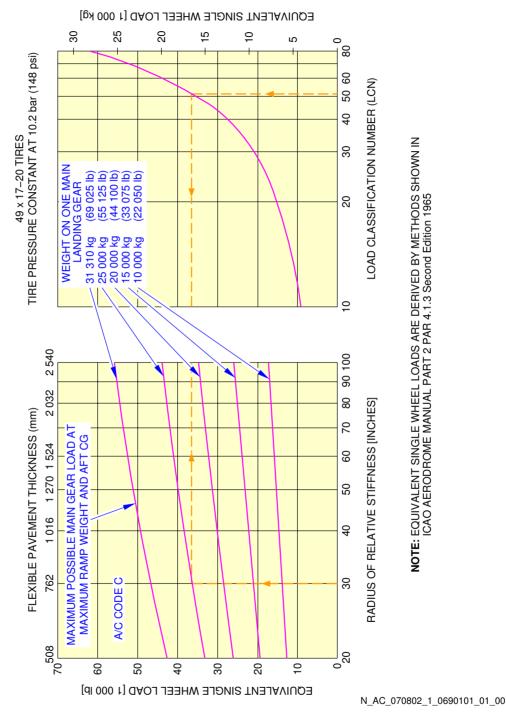
## Rigid Pavement Requirements - LCN Conversion

1. This section gives Rigid Pavement Requirements - LCN Conversion.

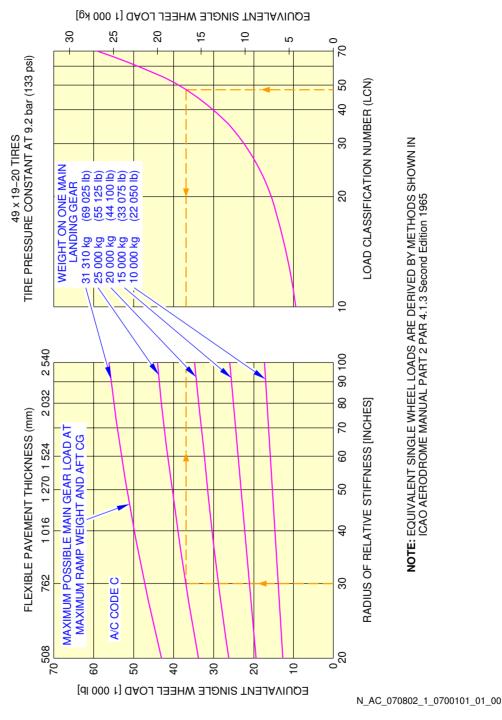
<u>NOTE</u>: For A/C Code definition, refer to chapter 7-1-0.



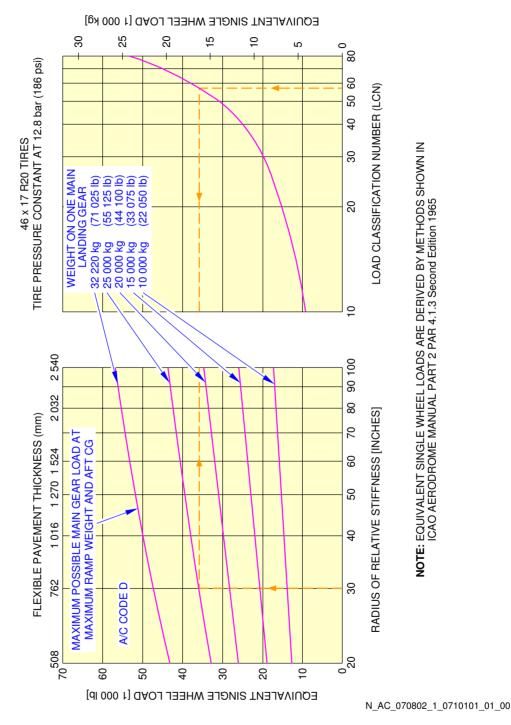
Rigid Pavement Requirements - LCN Conversion FIGURE 1



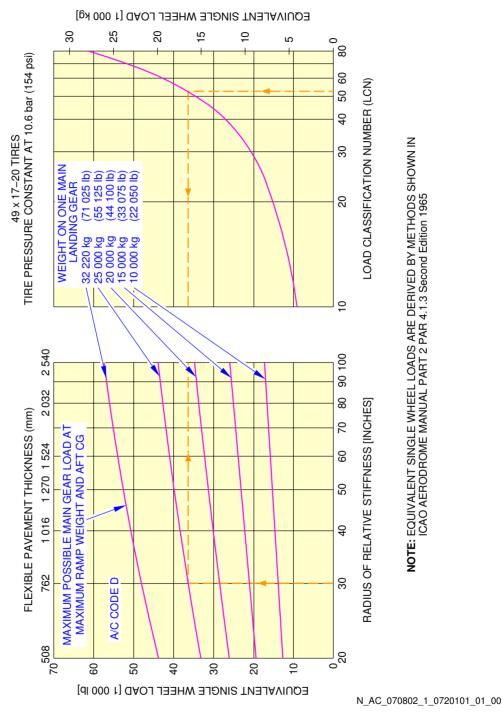
Rigid Pavement Requirements - LCN Conversion FIGURE 2



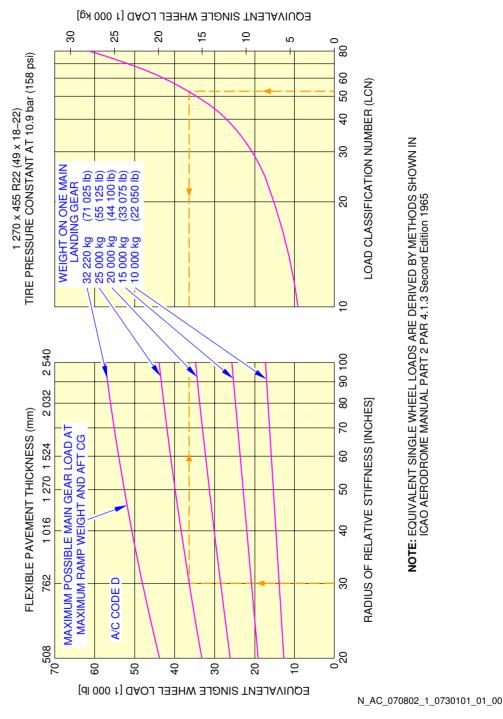
Rigid Pavement Requirements - LCN Conversion FIGURE 3



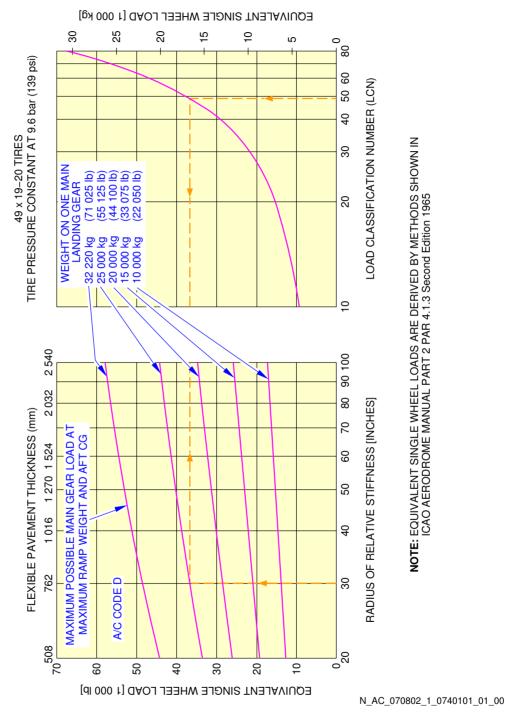
Rigid Pavement Requirements - LCN Conversion FIGURE 4



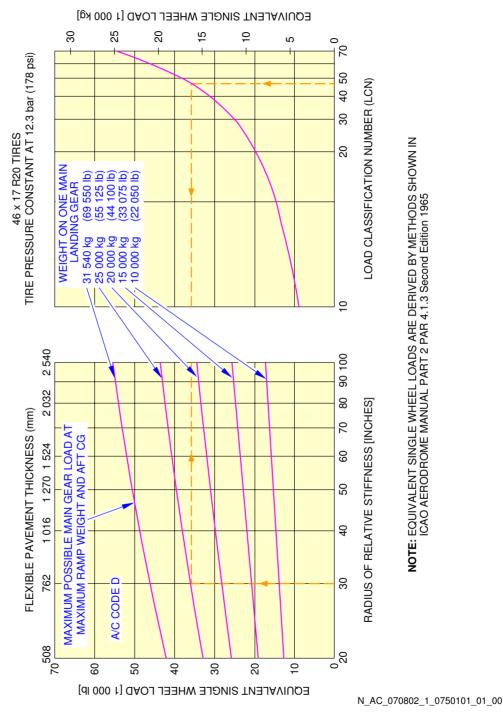
Rigid Pavement Requirements - LCN Conversion FIGURE 5



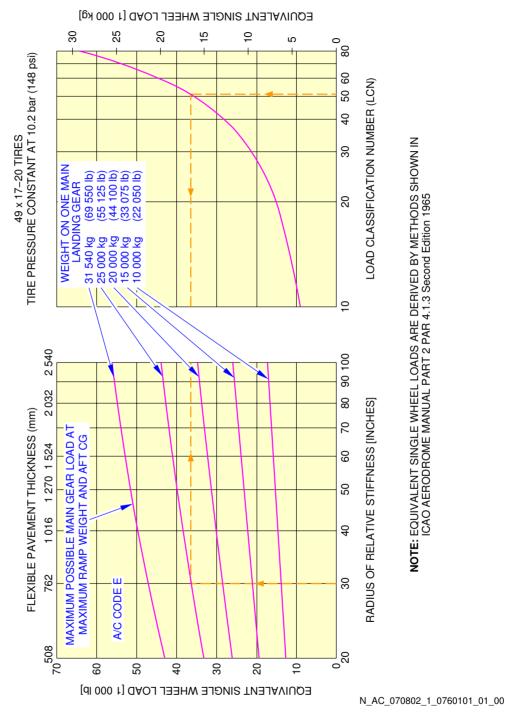
Rigid Pavement Requirements - LCN Conversion FIGURE 6



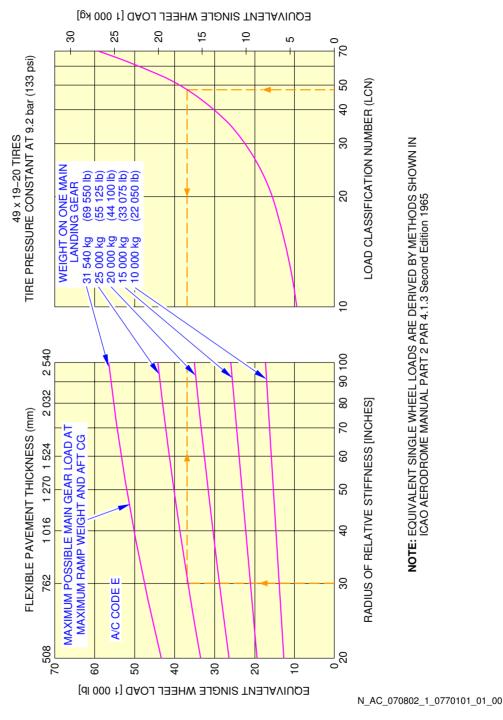
Rigid Pavement Requirements - LCN Conversion FIGURE 7



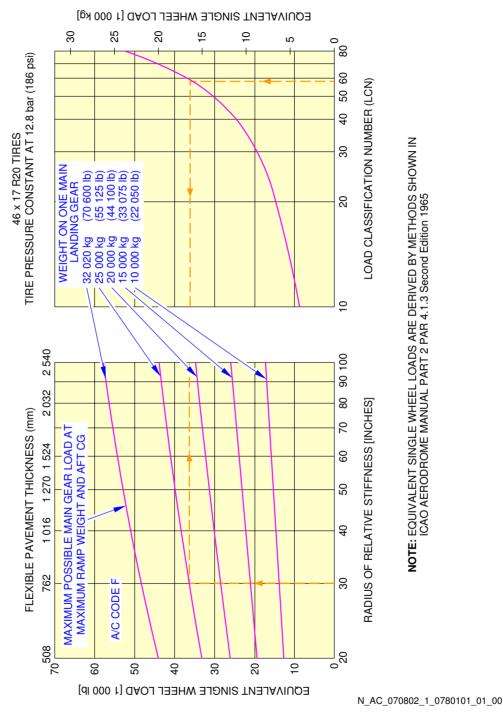
Rigid Pavement Requirements - LCN Conversion FIGURE 8



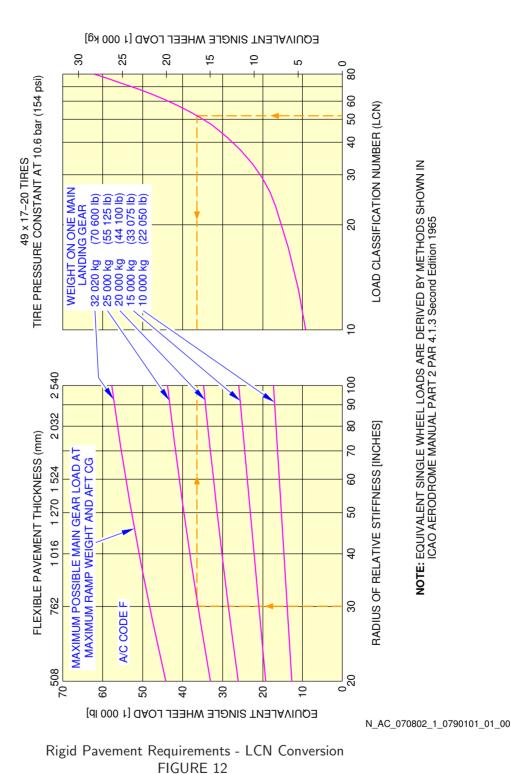
Rigid Pavement Requirements - LCN Conversion FIGURE 9



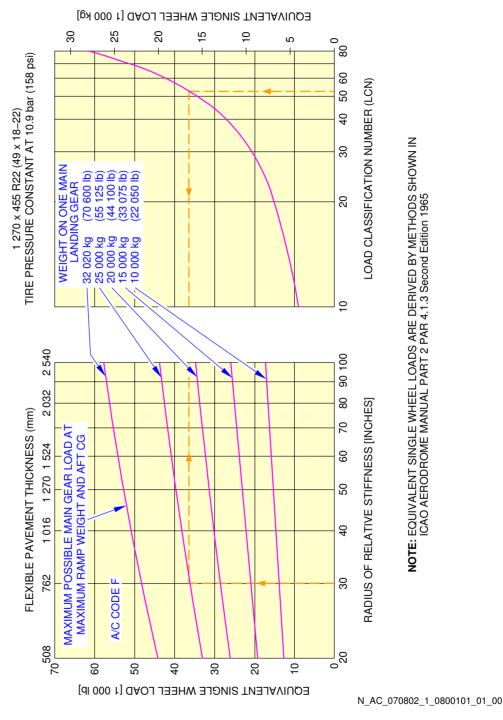
Rigid Pavement Requirements - LCN Conversion FIGURE 10



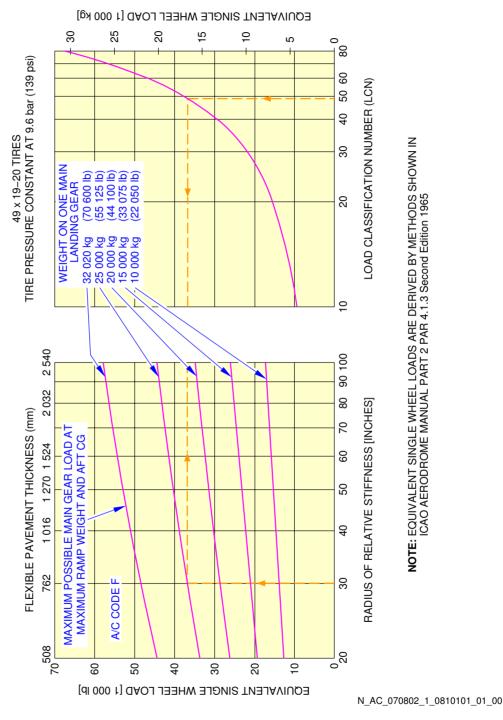
Rigid Pavement Requirements - LCN Conversion FIGURE 11



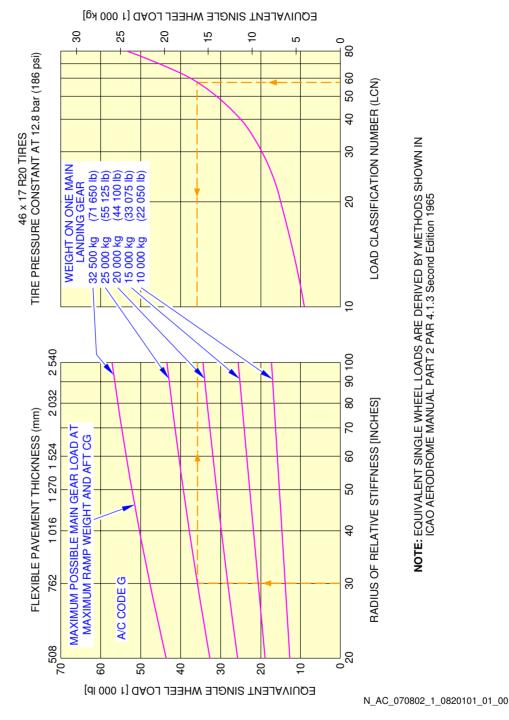
Page 13 May 01/11



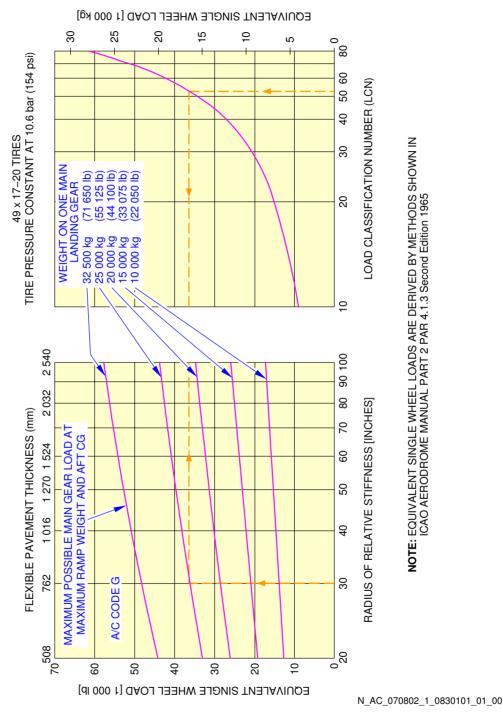
Rigid Pavement Requirements - LCN Conversion FIGURE 13



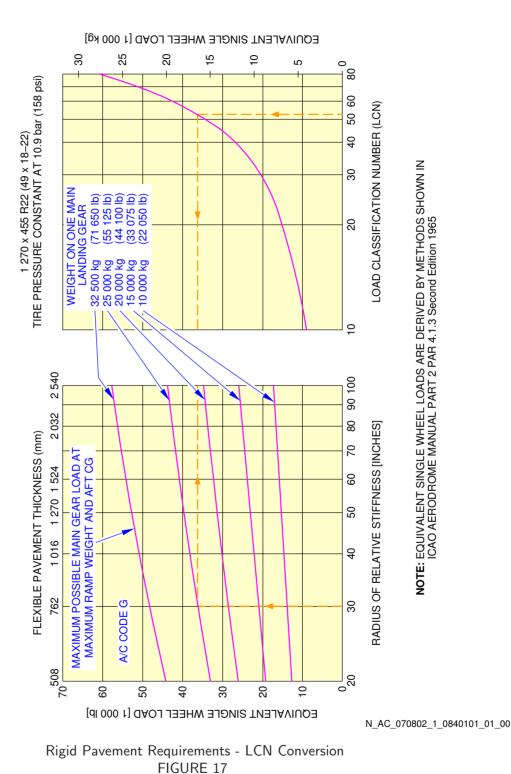
Rigid Pavement Requirements - LCN Conversion FIGURE 14



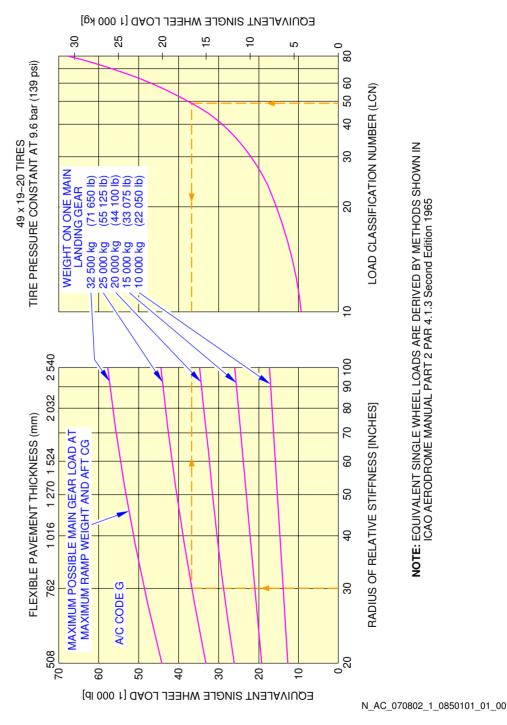
Rigid Pavement Requirements - LCN Conversion FIGURE 15



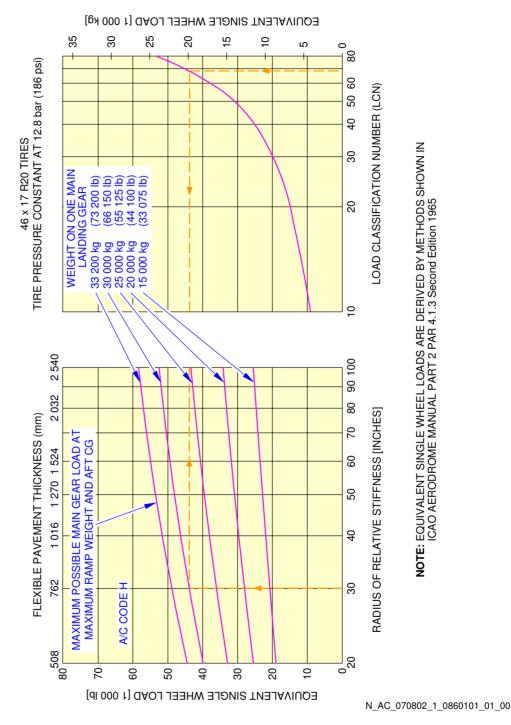
Rigid Pavement Requirements - LCN Conversion FIGURE 16



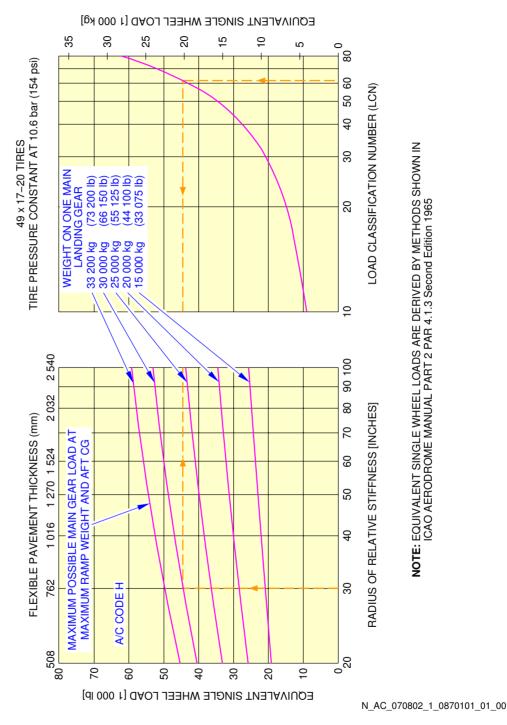
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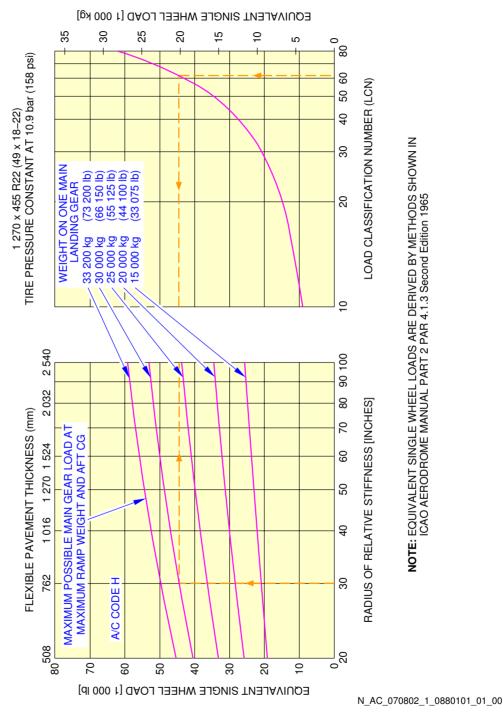
Rigid Pavement Requirements - LCN Conversion FIGURE 18



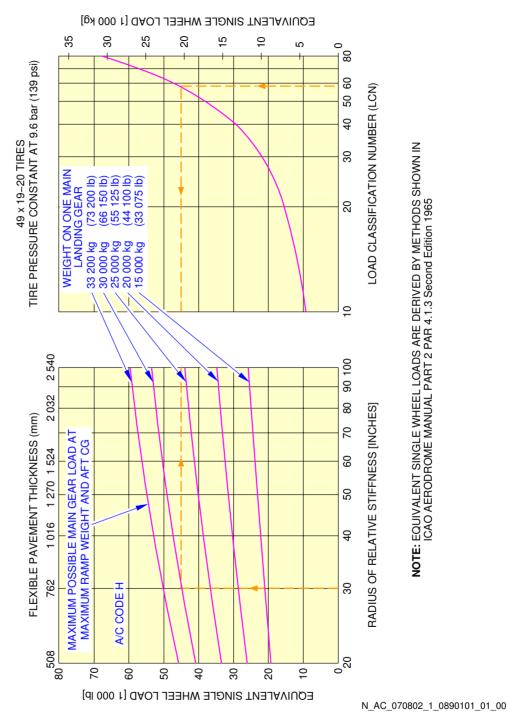
Rigid Pavement Requirements - LCN Conversion FIGURE 19



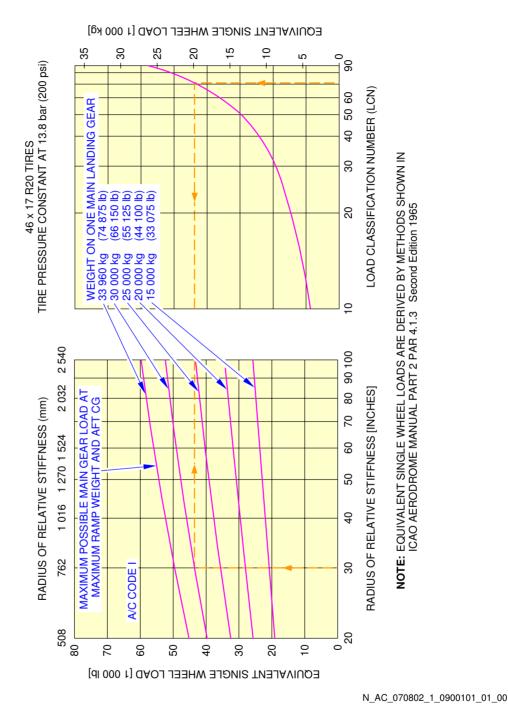
Rigid Pavement Requirements - LCN Conversion FIGURE 20



Rigid Pavement Requirements - LCN Conversion FIGURE 21



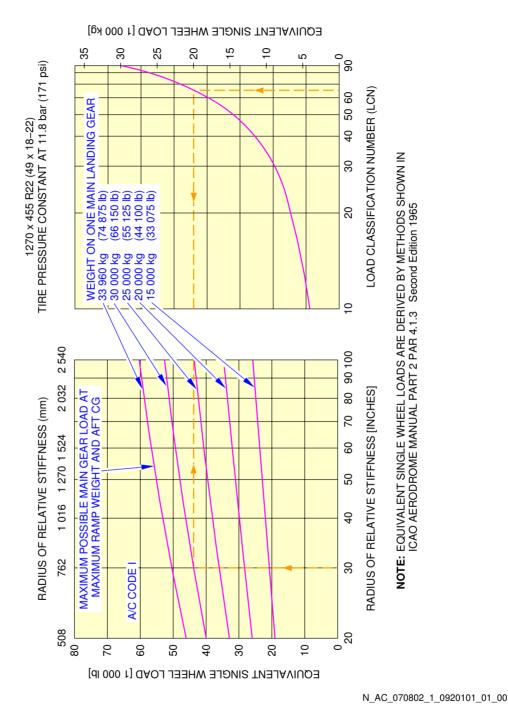
Rigid Pavement Requirements - LCN Conversion FIGURE 22



Rigid Pavement Requirements - LCN Conversion FIGURE 23



Rigid Pavement Requirements - LCN Conversion FIGURE 24



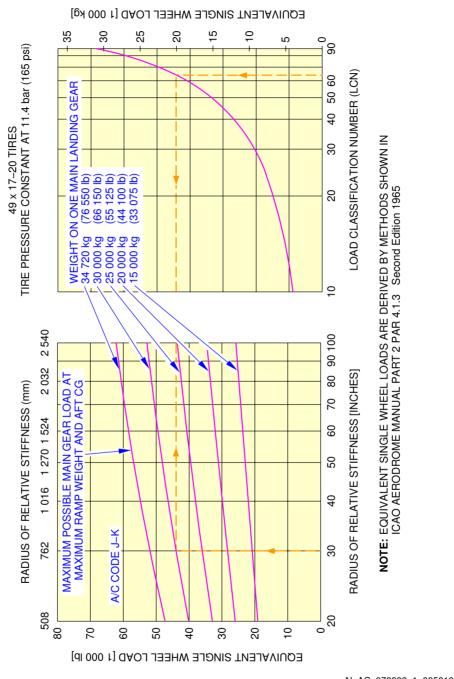
Rigid Pavement Requirements - LCN Conversion FIGURE 25



Rigid Pavement Requirements - LCN Conversion FIGURE 26



Rigid Pavement Requirements - LCN Conversion FIGURE 27



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Rigid Pavement Requirements - LCN Conversion FIGURE 28



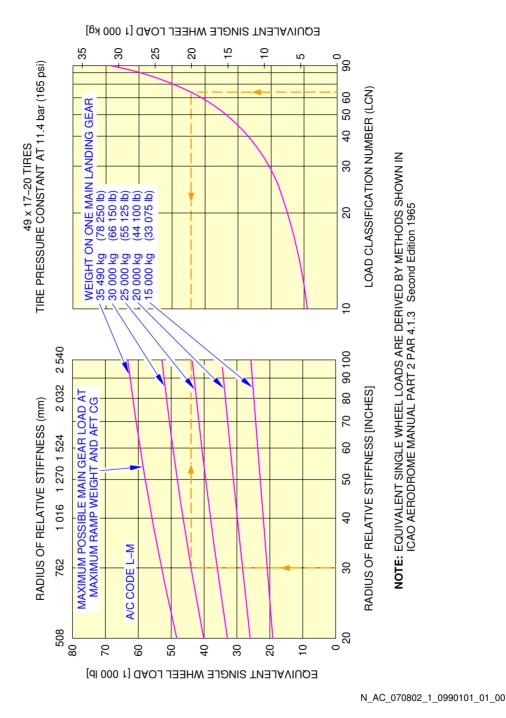
Rigid Pavement Requirements - LCN Conversion FIGURE 29



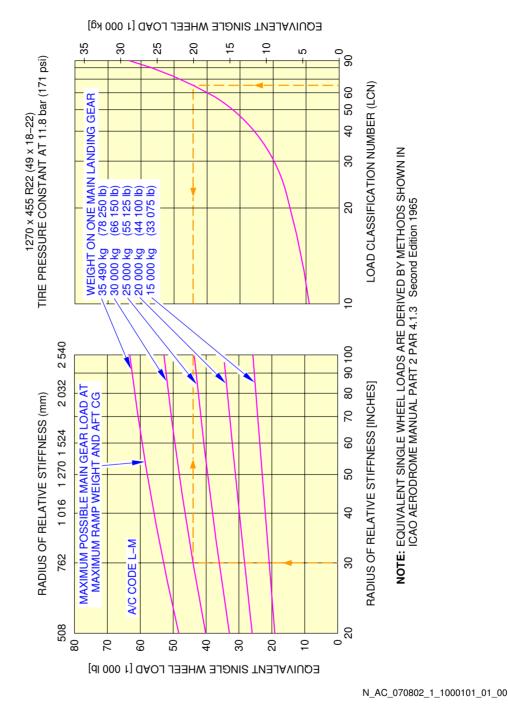
Rigid Pavement Requirements - LCN Conversion FIGURE 30



Rigid Pavement Requirements - LCN Conversion FIGURE 31



Rigid Pavement Requirements - LCN Conversion FIGURE 32



Rigid Pavement Requirements - LCN Conversion FIGURE 33

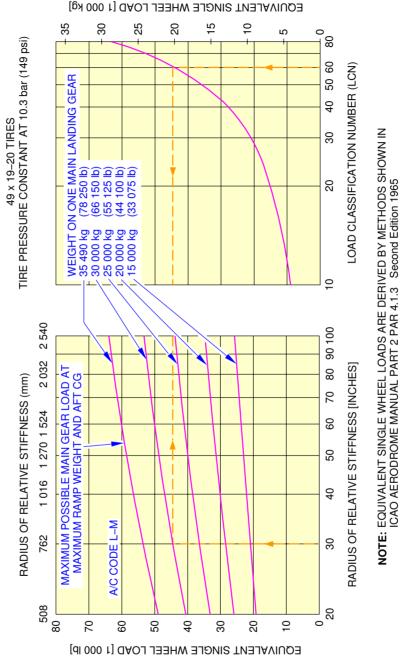


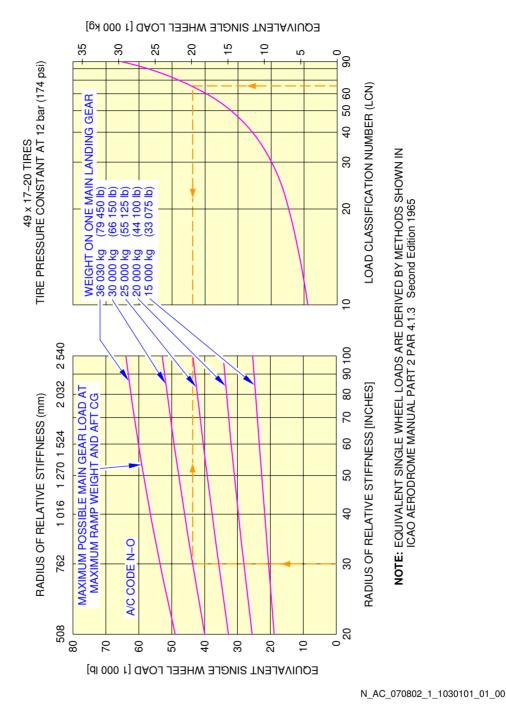
FIGURE 34

Rigid Pavement Requirements - LCN Conversion Rigid Pavement Requirements - LCN Conversion

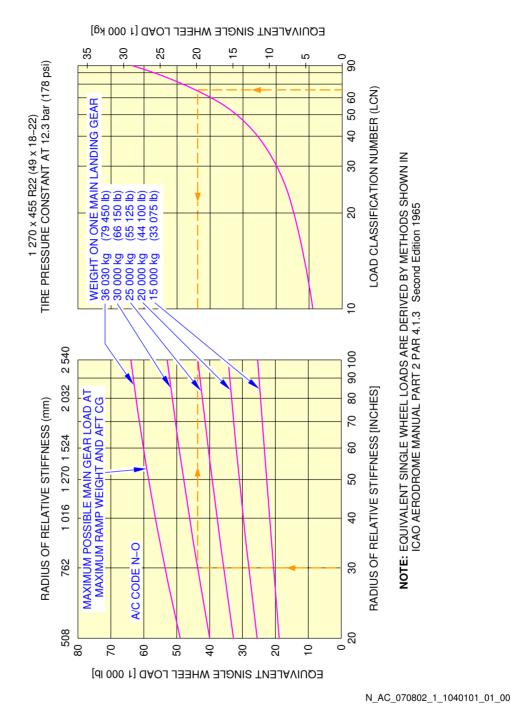
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Rigid Pavement Requirements - LCN Conversion FIGURE 35



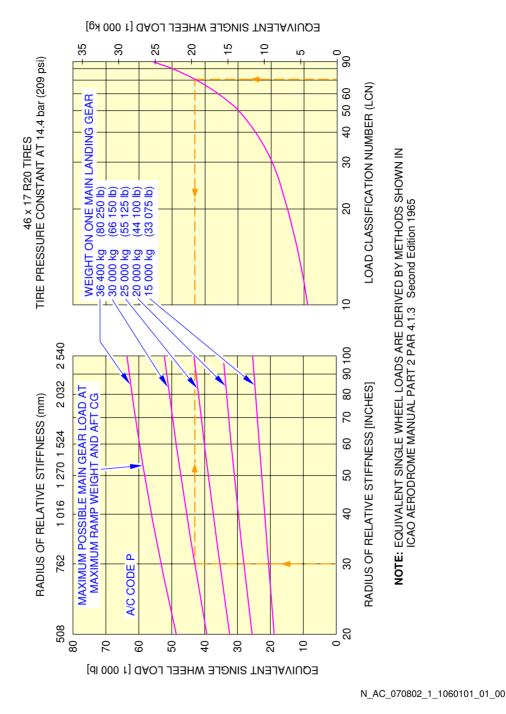
Rigid Pavement Requirements - LCN Conversion FIGURE 36



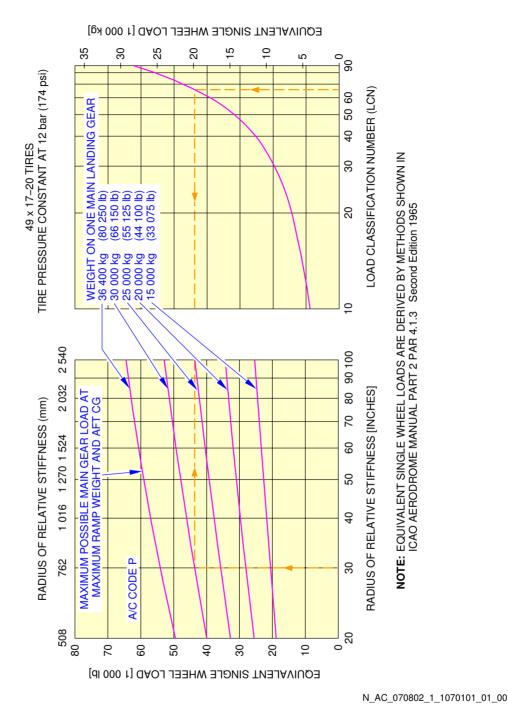
Rigid Pavement Requirements - LCN Conversion FIGURE 37



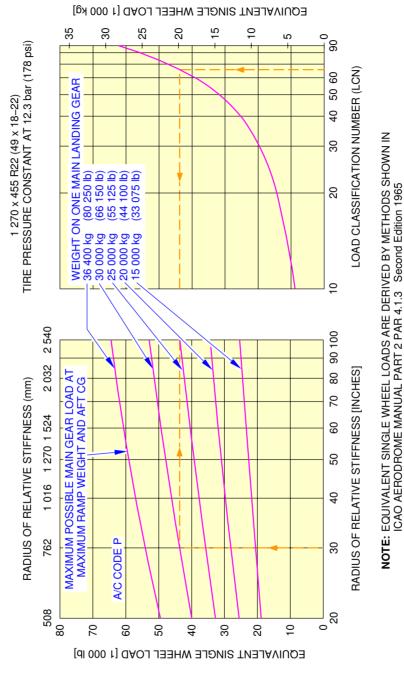
Rigid Pavement Requirements - LCN Conversion FIGURE 38



Rigid Pavement Requirements - LCN Conversion FIGURE 39

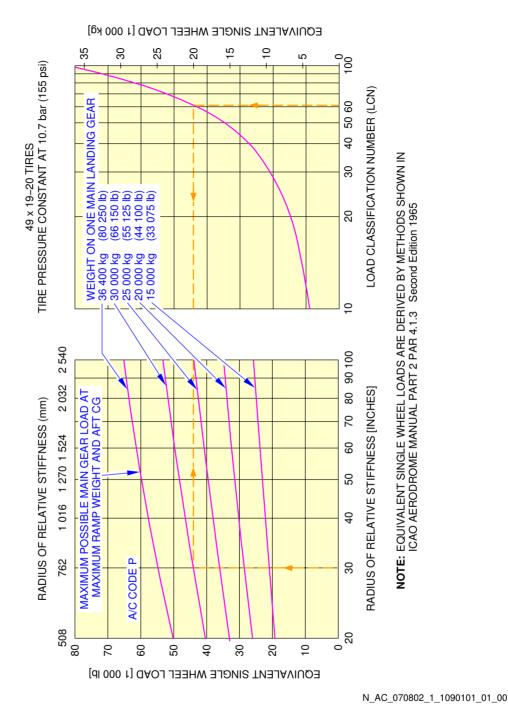


Rigid Pavement Requirements - LCN Conversion FIGURE 40

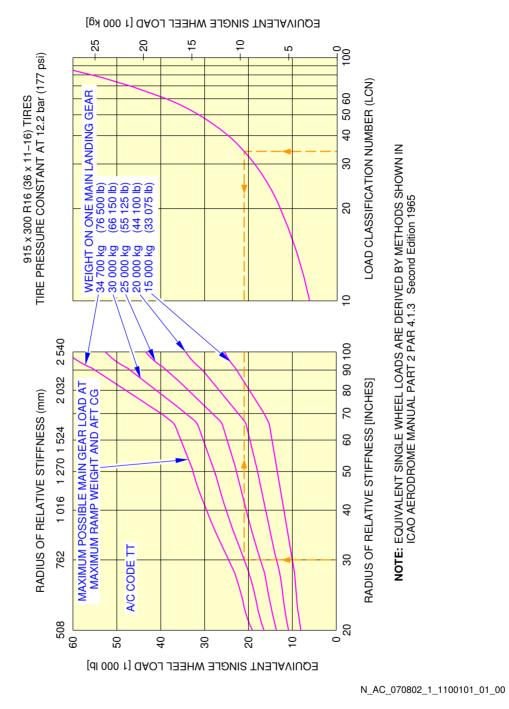


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Rigid Pavement Requirements - LCN Conversion Rigid Pavement Requirements - LCN Conversion FIGURE 41



Rigid Pavement Requirements - LCN Conversion FIGURE 42



Rigid Pavement Requirements - LCN Conversion FIGURE 43

### 7-8-3 Radius of Relative Stiffness (Other values of E and L)

\*\*ON A/C A320-100 A320-200

Radius of Relative Stiffness (Other values of "E" and "L")

1. General

The table of Section 7-8-1, Radius of Relative Stiffness, presents "L" values based on Young's Modulus (E) of 4 000 000 psi and Poisson's Ratio ( $\mu$ ) of 0.15.

To find "L" values based on other values of "E" and " $\mu$ ", see Section 7-8-4.

For example, to find an "L" value based on an "E" of 3 000 000 psi, the "E" factor of 0.931 is multiplied by the "L" value found in the table of Section 7-8-1.

The effect of variations of " $\mu$ " on the "L" value is treated in a similar manner.

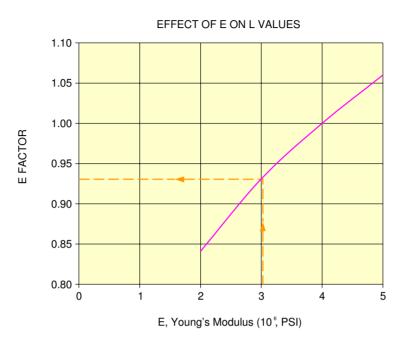
# 7-8-4 Radius of Relative Stiffness

\*\*ON A/C A320-100 A320-200

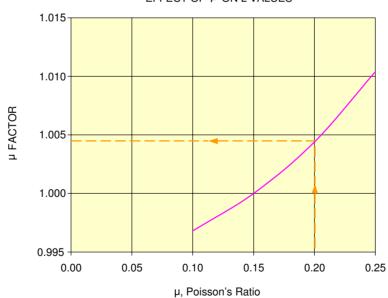
# Radius of Relative Stiffness

1. This section gives Radius of Relative Stiffness.

# \*\*ON A/C A320-100 A320-200



#### EFFECT OF µ ON L VALUES



 $\textbf{NOTE:} \ \ \text{BOTH CURVES ON THIS PAGE ARE USED TO ADJUST THE L VALUES OF TABLE 7-8-1}$ 

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Radius of Relative Stiffness (Effect E and  $\mu$  on "L" values) FIGURE 1

### 7-9-0 ACN/PCN Reporting System

\*\*ON A/C A320-100 A320-200

## ACN/PCN Reporting System

1. General

To determine the ACN of an aircraft on flexible or rigid pavement, both the aircraft gross weight and the subgrade strength must be known.

In the example shown in Section 7-9-1 Aircraft Classification Number – Flexible Pavement, A/C Code C, for an aircraft gross weight of 55 000 kg (121 250 lb) and medium subgrade strength (code B), the ACN for the flexible pavement is 28.

In the example shown in Section 7-9-2 Aircraft Classification Number – Rigid Pavement, A/C Code C, for an aircraft gross weight of 55 000 kg (121 250 lb) and medium subgrade strength (code B), the ACN for the rigid pavement is 32.

 ${\underline{\sf NOTE}}$ : An aircraft with an ACN equal to or less than the reported PCN can operate on that pavement, subject to any limitation on the tire pressure.

(Ref.: ICAO Aerodrome Design Manual Part 3, Chapter 1, Second Edition 1983).

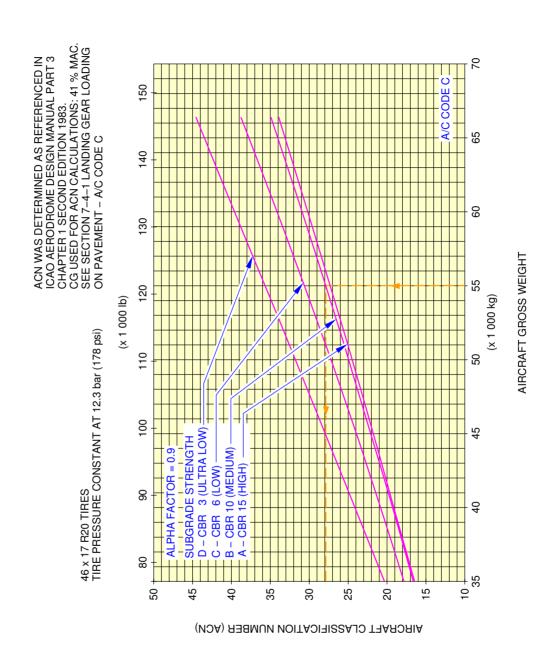
### 7-9-1 Aircraft Classification Number - Flexible Pavement

\*\*ON A/C A320-100 A320-200

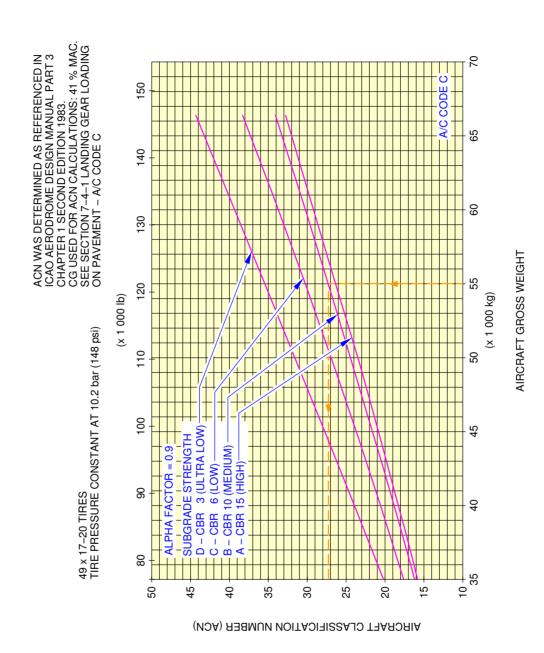
# Aircraft Classification Number - Flexible Pavement

1. This section gives the Aircraft Classification Number - Flexible Pavement.

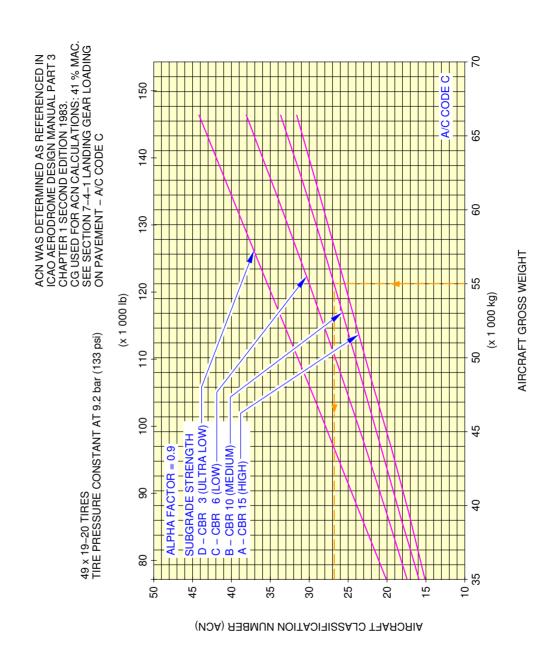
 $\underline{\mathsf{NOTE}}$ : For A/C Code definition, refer to chapter 7-1-0.



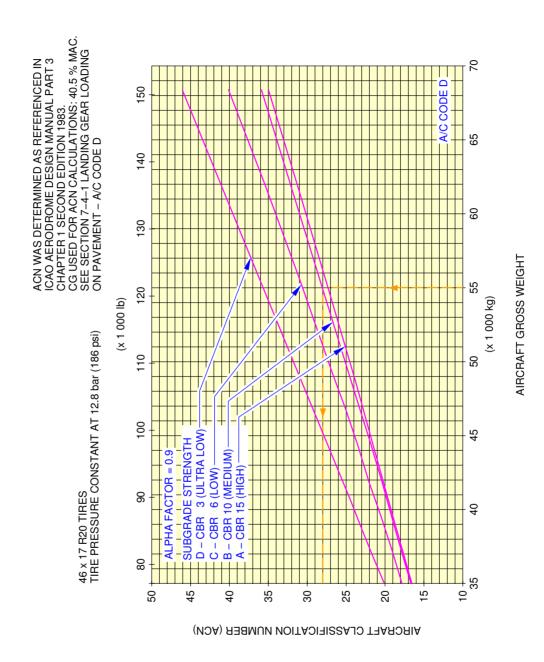
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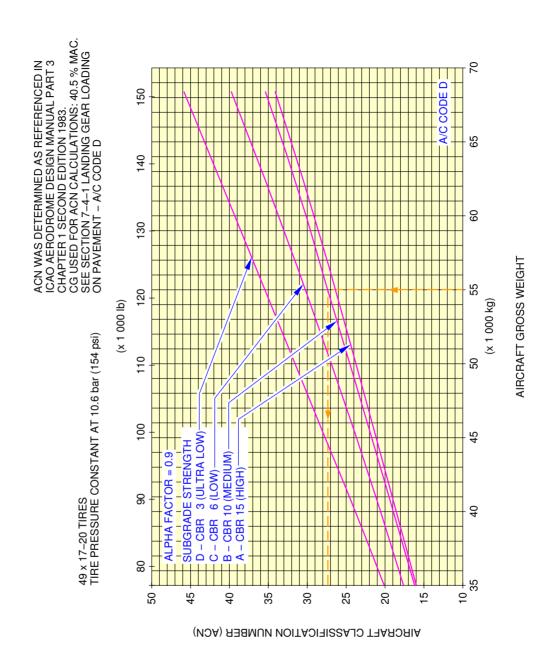
N\_AC\_070901\_1\_0810101\_01\_00



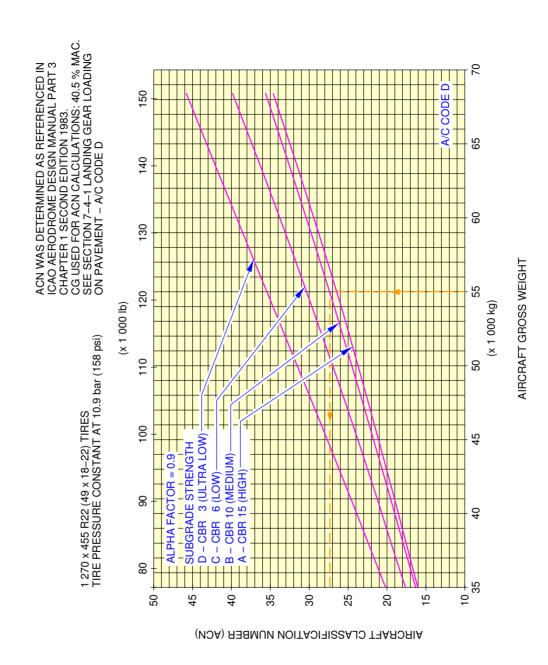
N\_AC\_070901\_1\_0820101\_01\_00



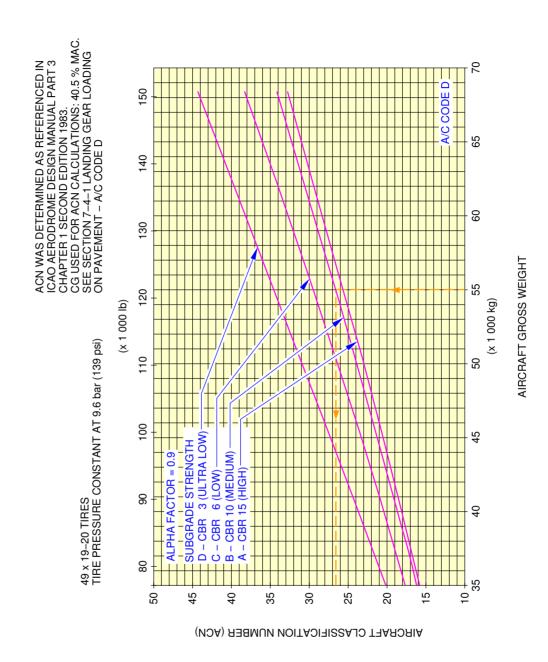
N\_AC\_070901\_1\_0830101\_01\_00



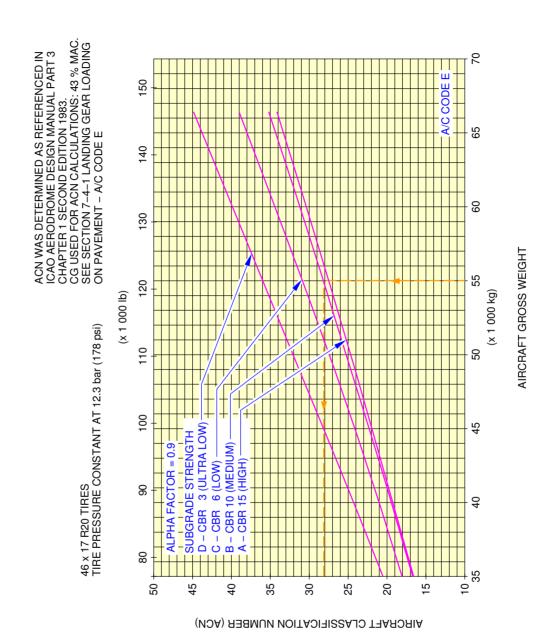
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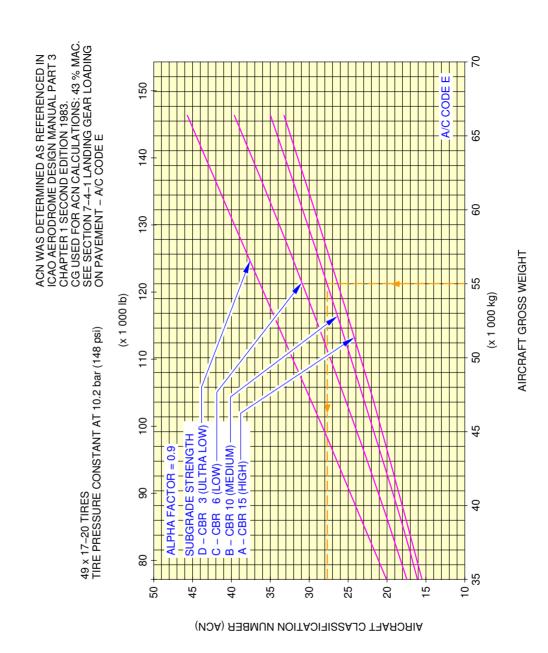
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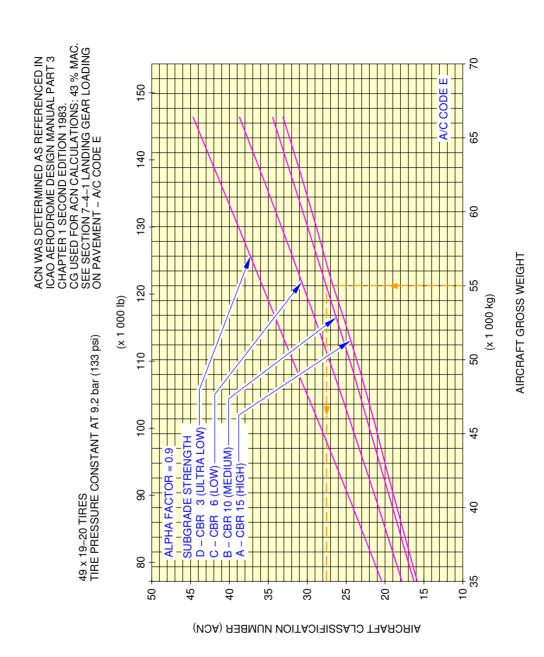
N\_AC\_070901\_1\_0860101\_01\_00



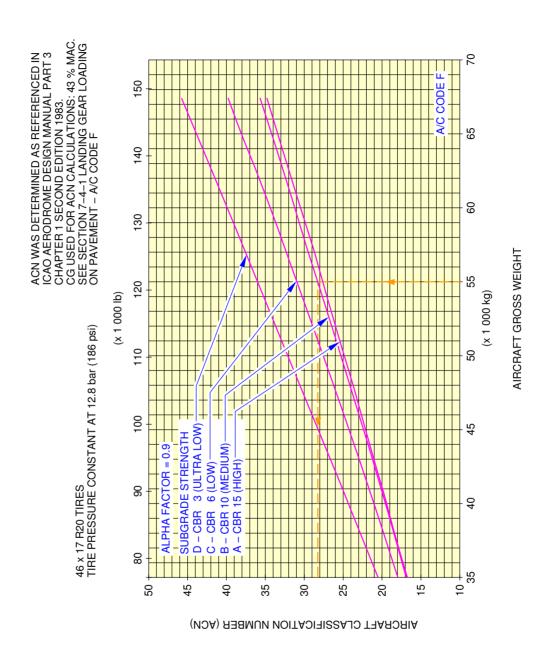
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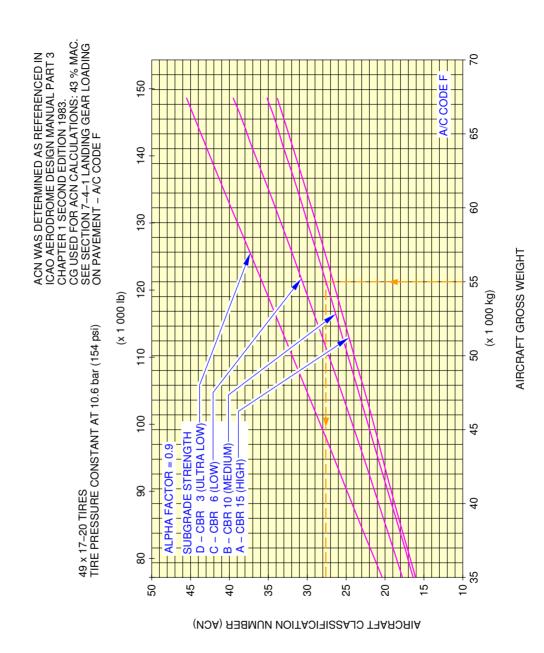
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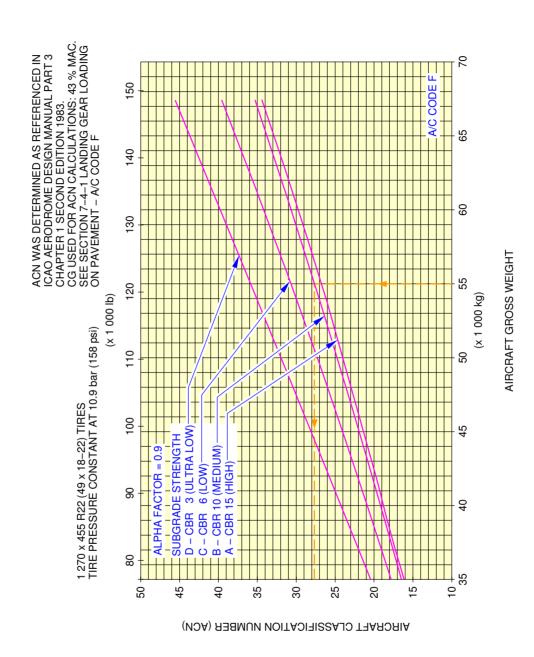
N\_AC\_070901\_1\_0890101\_01\_00



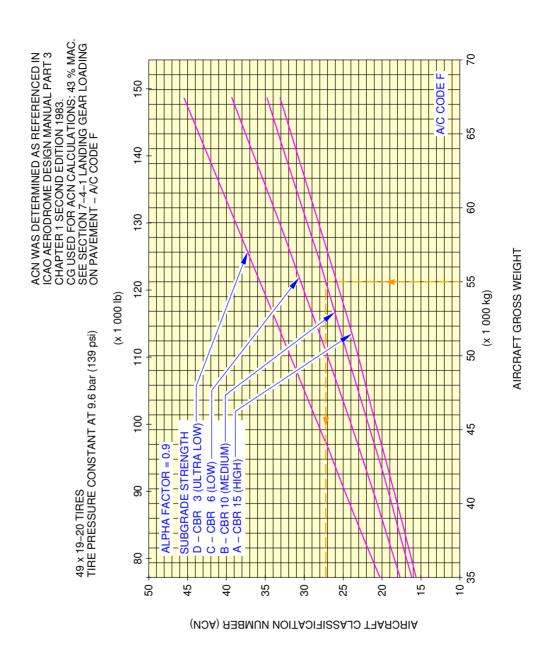
N\_AC\_070901\_1\_0900101\_01\_00



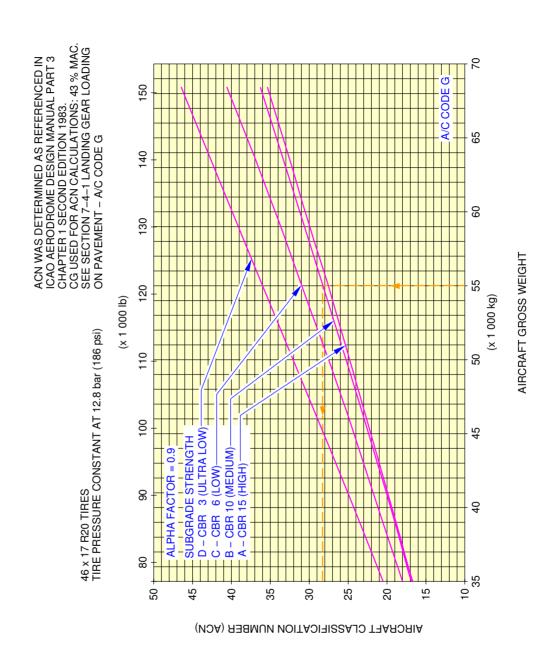
N\_AC\_070901\_1\_0910101\_01\_00



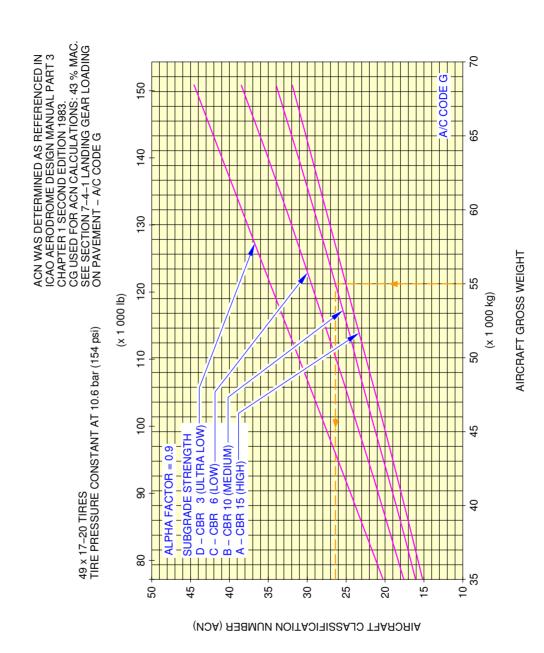
N\_AC\_070901\_1\_0920101\_01\_00



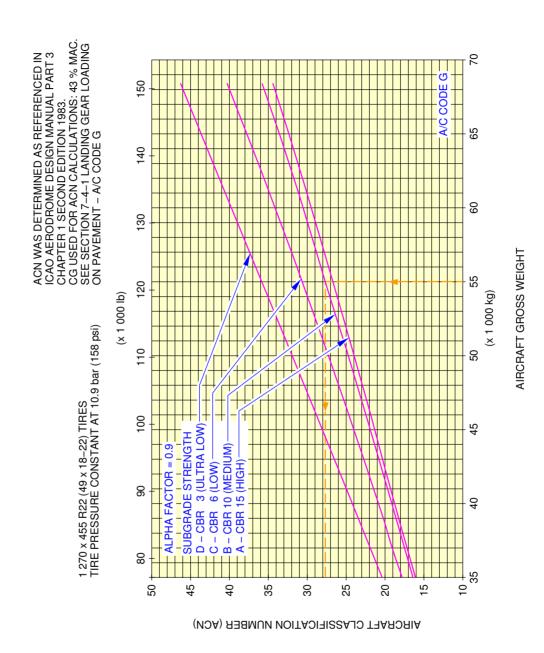
N\_AC\_070901\_1\_0930101\_01\_00



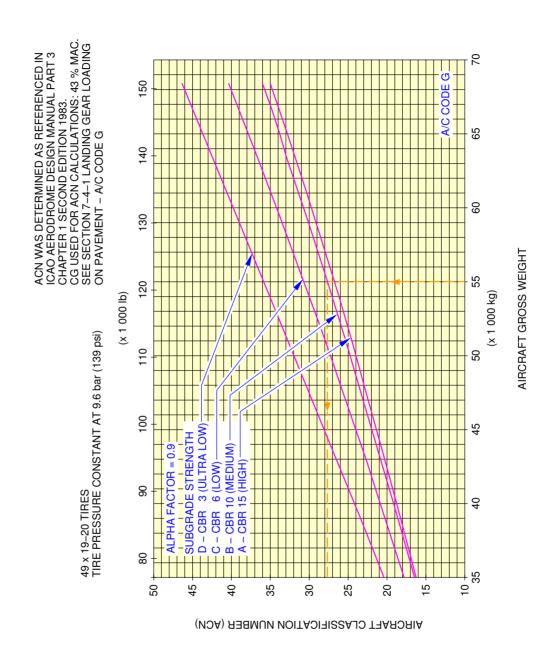
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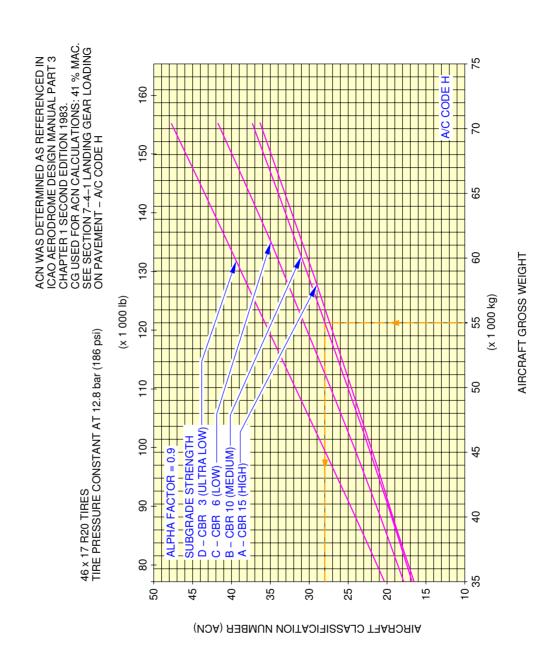
N\_AC\_070901\_1\_0950101\_01\_00



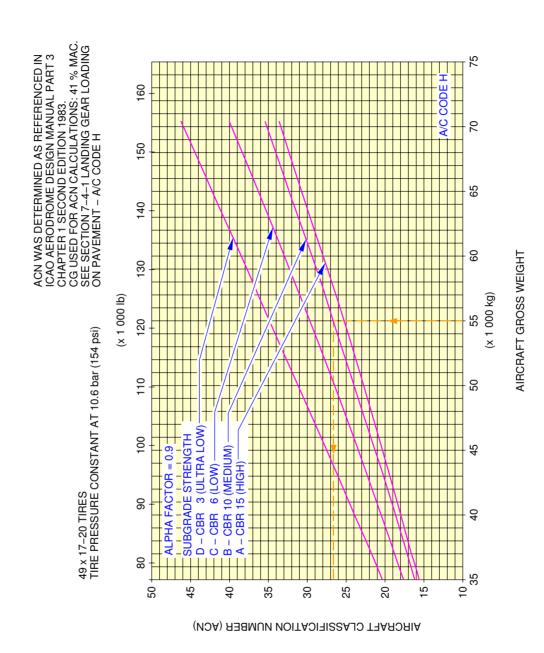
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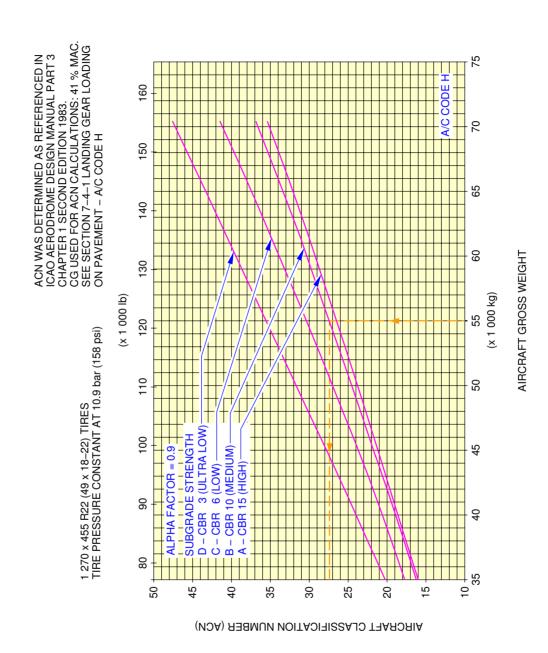
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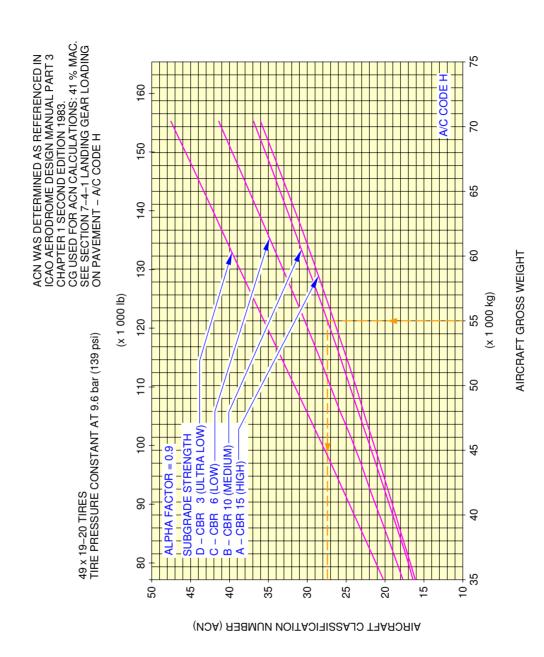
N\_AC\_070901\_1\_0980101\_01\_00



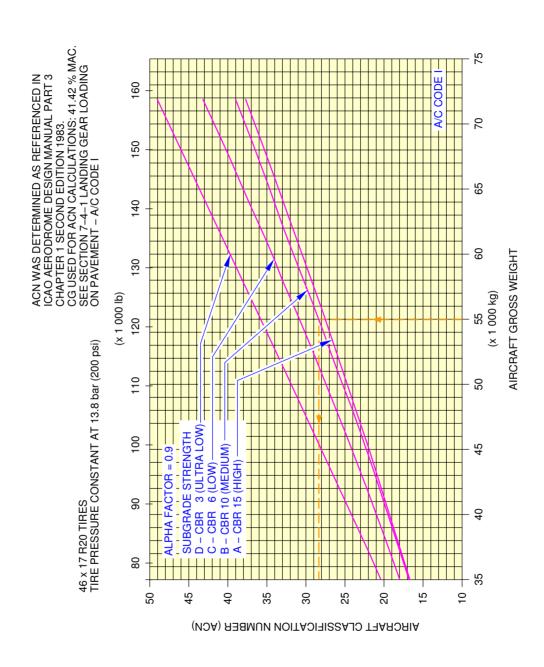
N\_AC\_070901\_1\_0990101\_01\_00



N\_AC\_070901\_1\_1000101\_01\_00

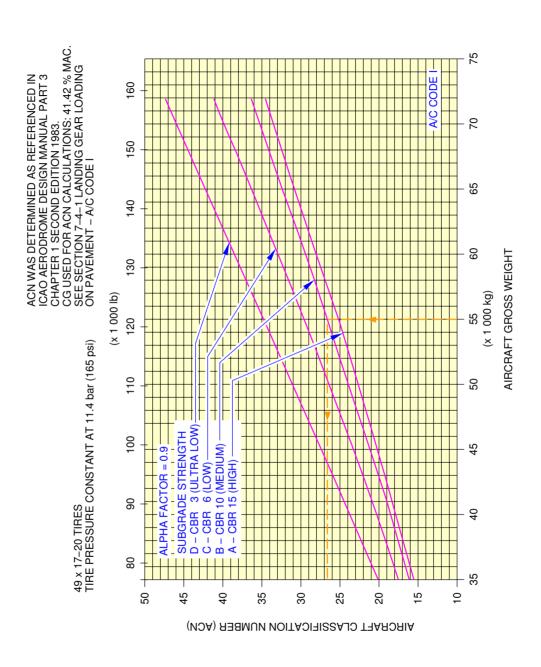


N\_AC\_070901\_1\_1010101\_01\_00



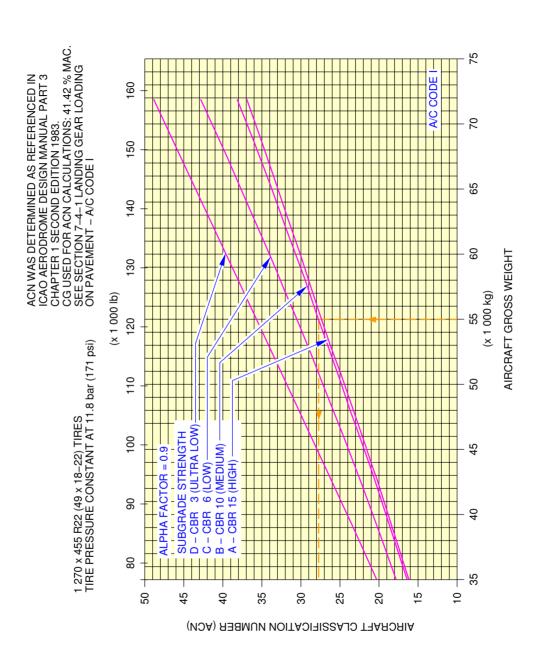
N\_AC\_070901\_1\_1020101\_01\_00

Aircraft Classification Number – Flexible Pavement FIGURE 23



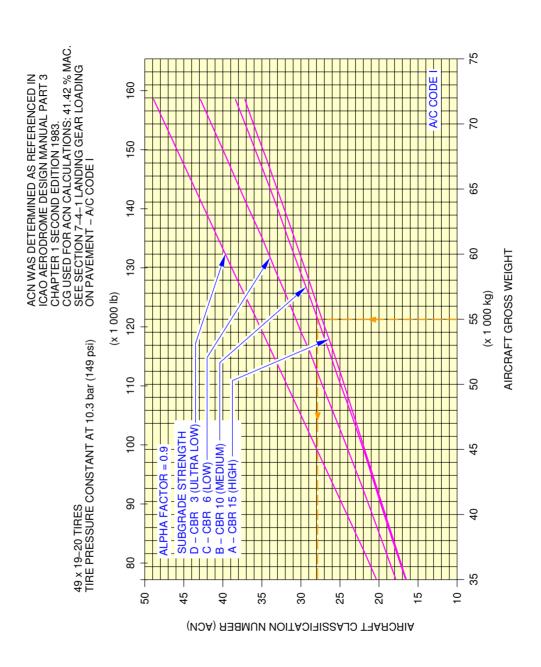
N\_AC\_070901\_1\_1030101\_01\_00

Aircraft Classification Number – Flexible Pavement FIGURE 24

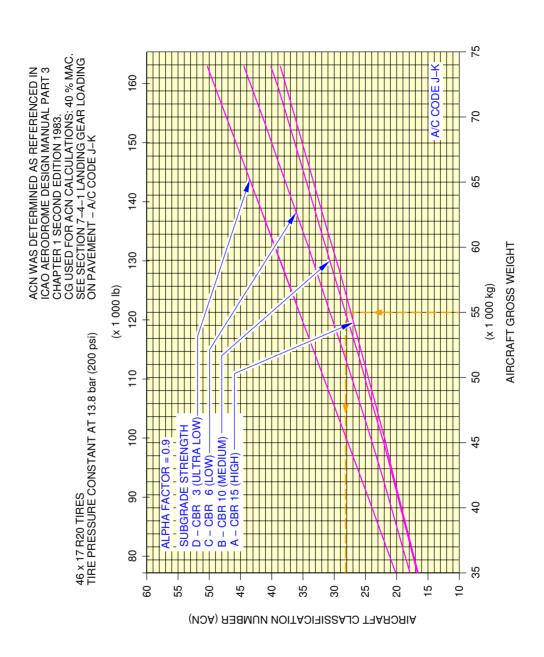


N\_AC\_070901\_1\_1040101\_01\_00

Aircraft Classification Number – Flexible Pavement FIGURE 25

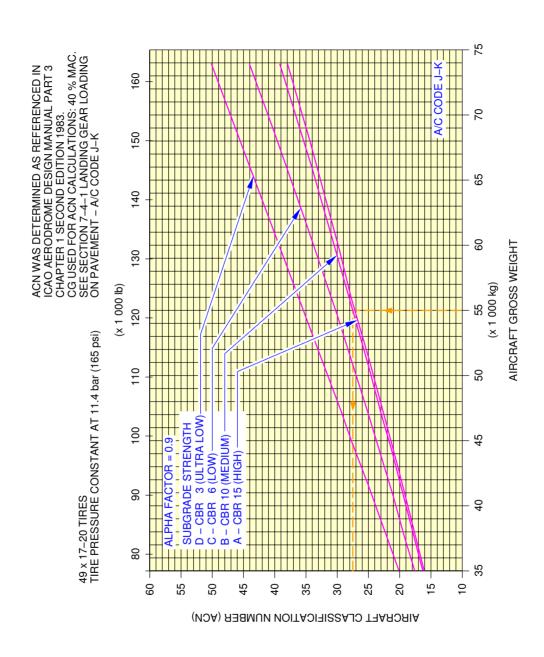


N\_AC\_070901\_1\_1050101\_01\_00



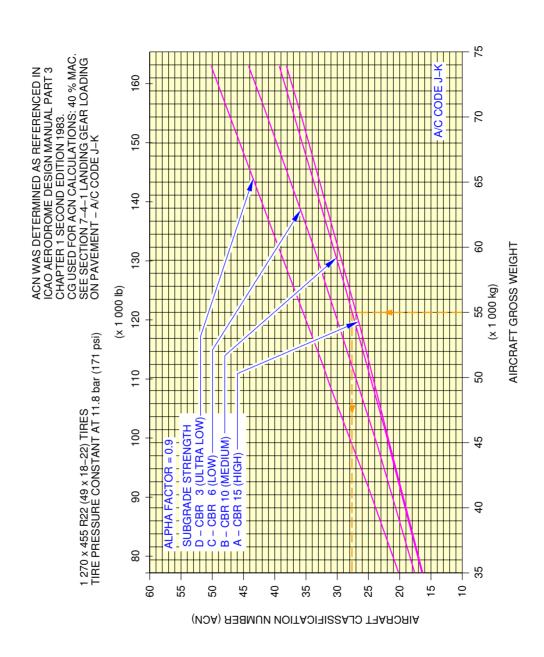
N\_AC\_070901\_1\_1060101\_01\_00

Aircraft Classification Number – Flexible Pavement FIGURE 27



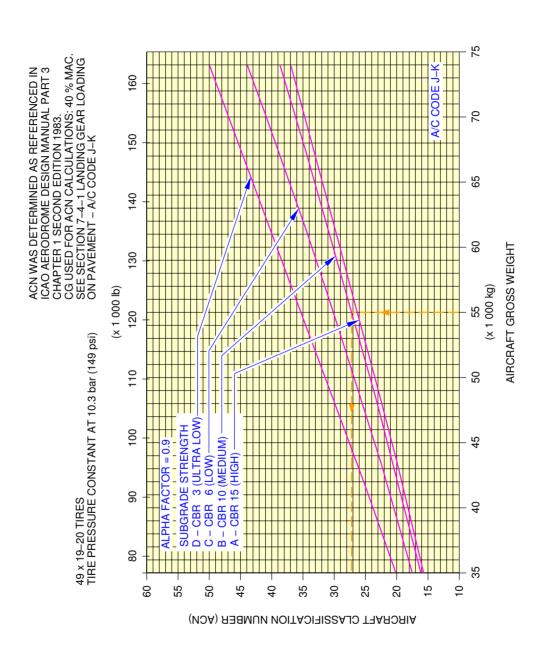
N\_AC\_070901\_1\_1070101\_01\_00

Aircraft Classification Number – Flexible Pavement FIGURE 28



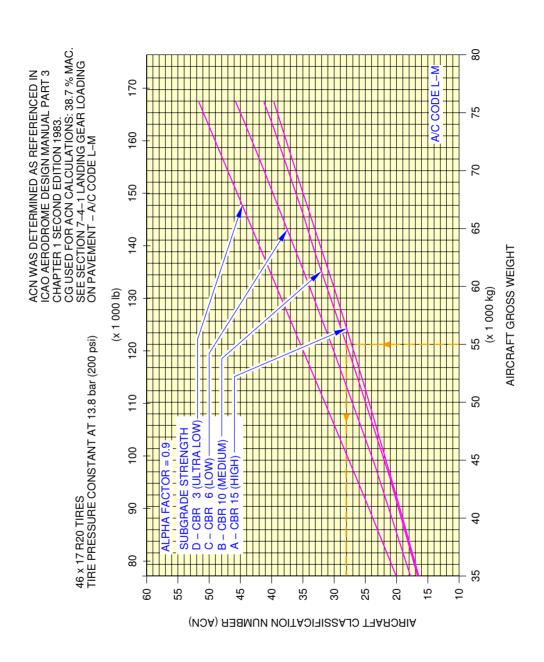
N\_AC\_070901\_1\_1080101\_01\_00

Aircraft Classification Number – Flexible Pavement FIGURE 29

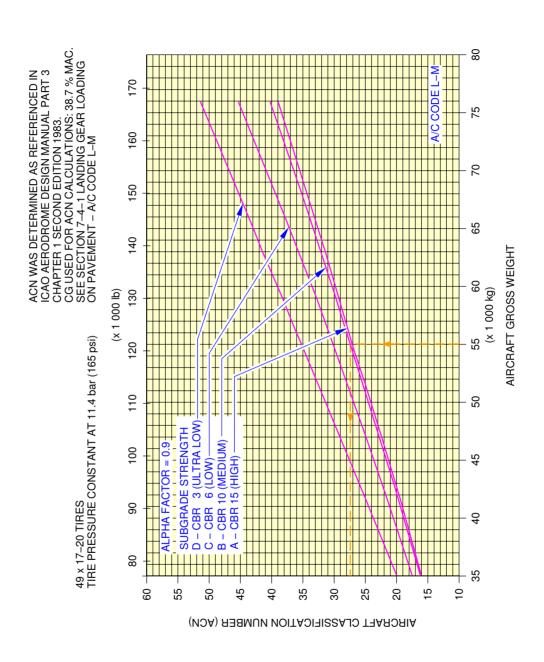


N\_AC\_070901\_1\_1090101\_01\_00

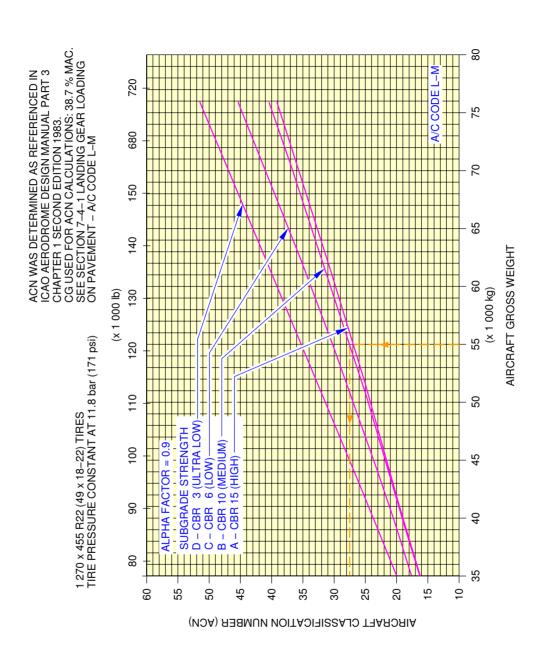
Aircraft Classification Number – Flexible Pavement FIGURE 30



N\_AC\_070901\_1\_1100101\_01\_00

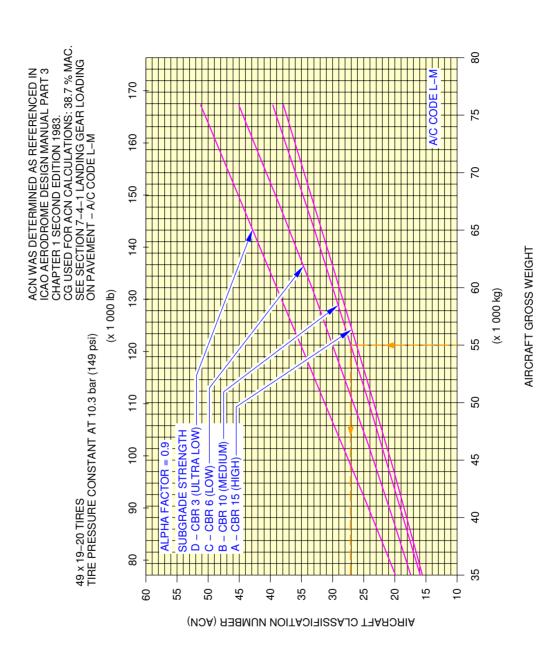


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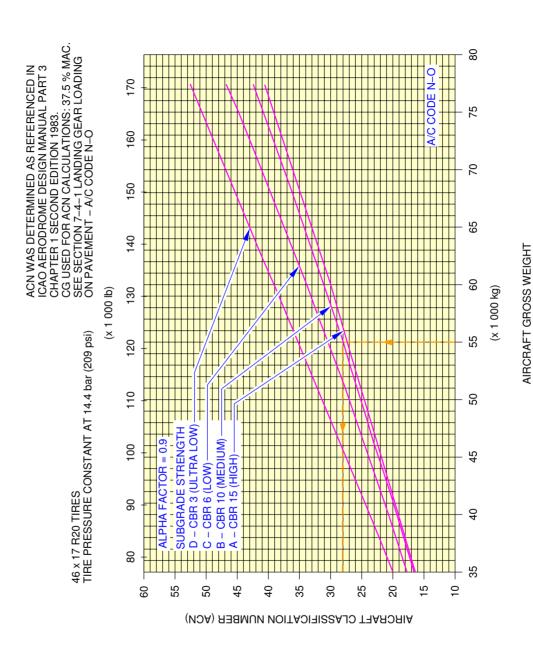


N\_AC\_070901\_1\_1120101\_01\_00

Aircraft Classification Number – Flexible Pavement FIGURE 33

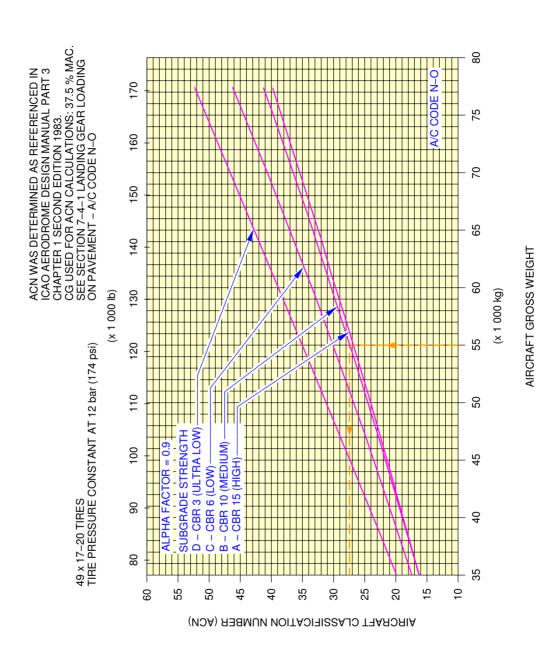


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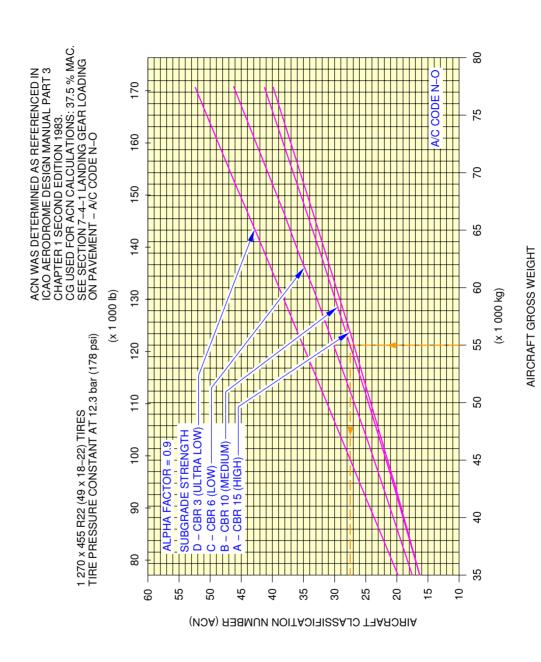


N\_AC\_070901\_1\_1140101\_01\_00

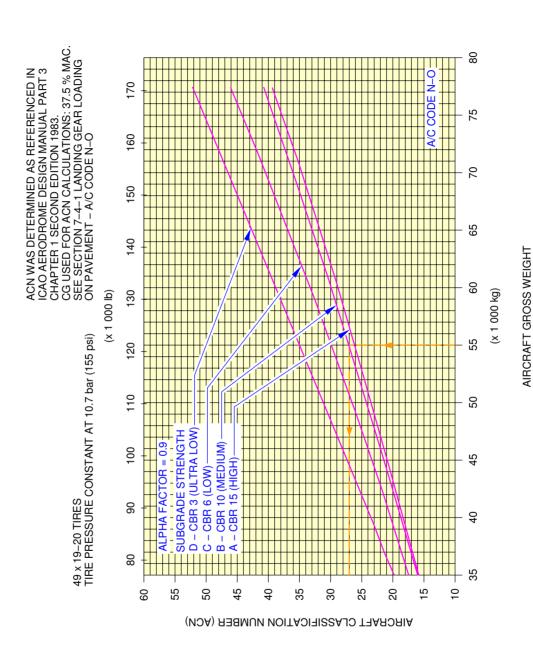
Aircraft Classification Number – Flexible Pavement FIGURE 35



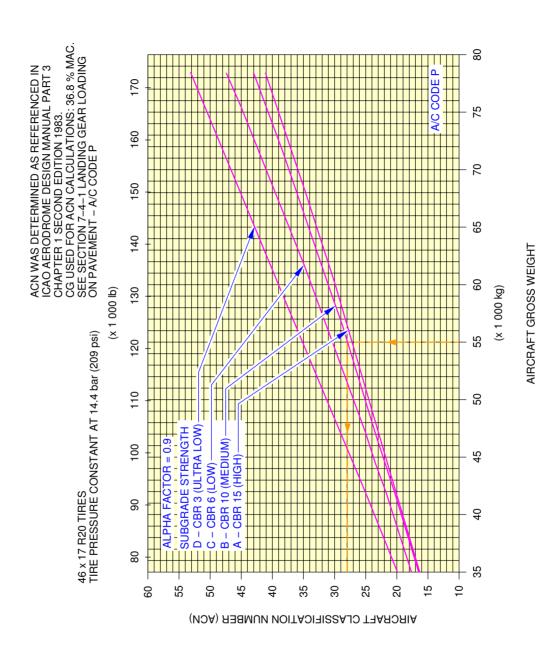
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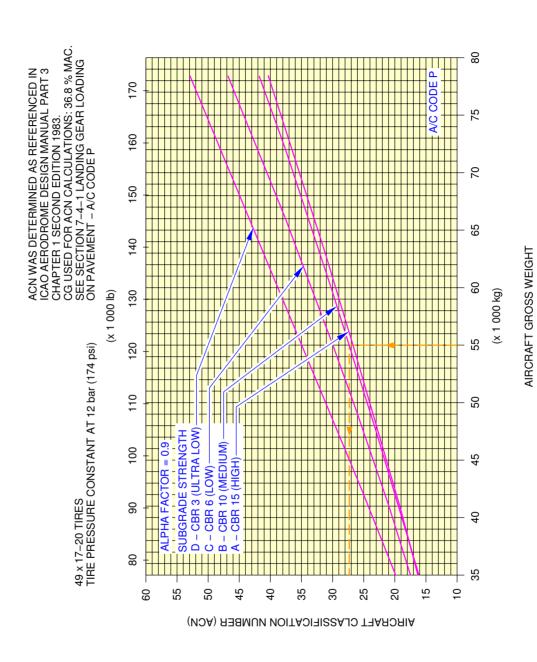
N\_AC\_070901\_1\_1160101\_01\_00



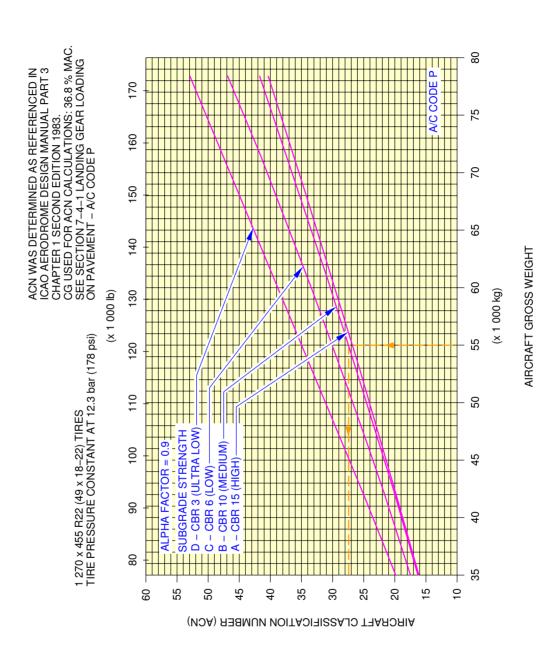
N\_AC\_070901\_1\_1170101\_01\_00



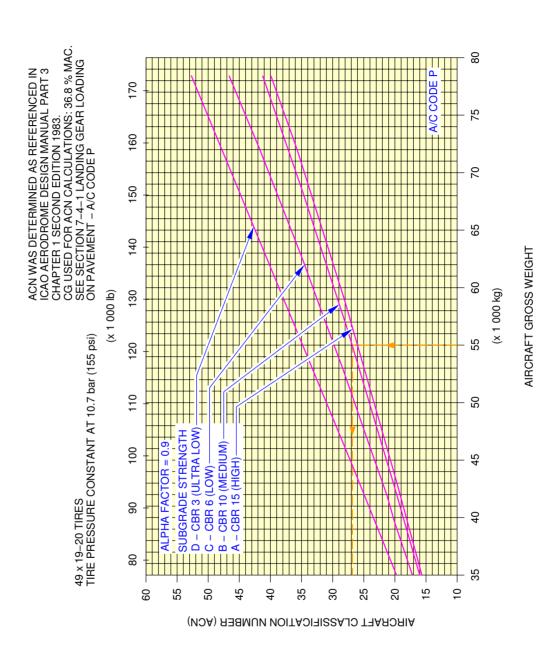
N\_AC\_070901\_1\_1180101\_01\_00



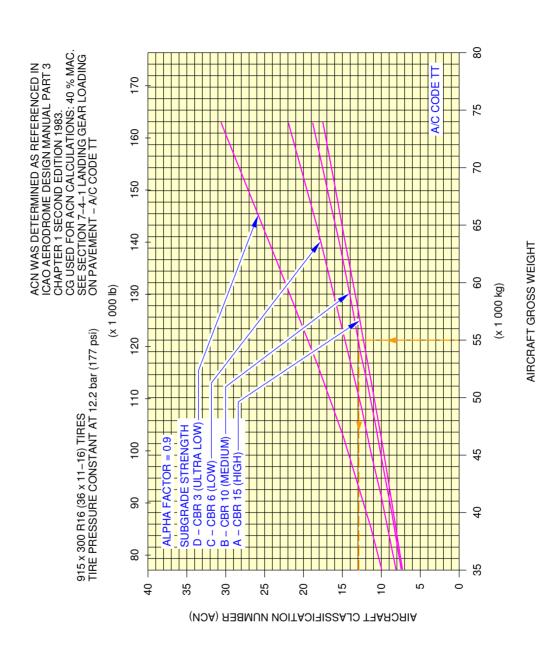
N\_AC\_070901\_1\_1190101\_01\_00



N\_AC\_070901\_1\_1200101\_01\_00



N\_AC\_070901\_1\_1210101\_01\_00



N\_AC\_070901\_1\_1220101\_01\_00

#### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

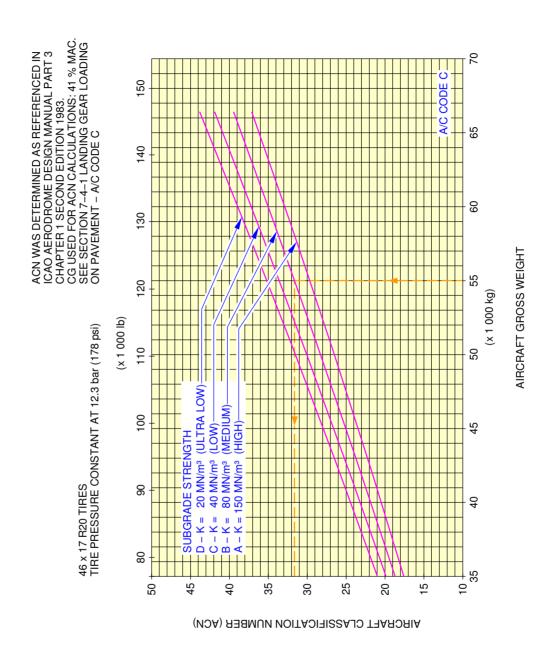
7-9-2 Aircraft Classification Number - Rigid Pavement

\*\*ON A/C A320-100 A320-200

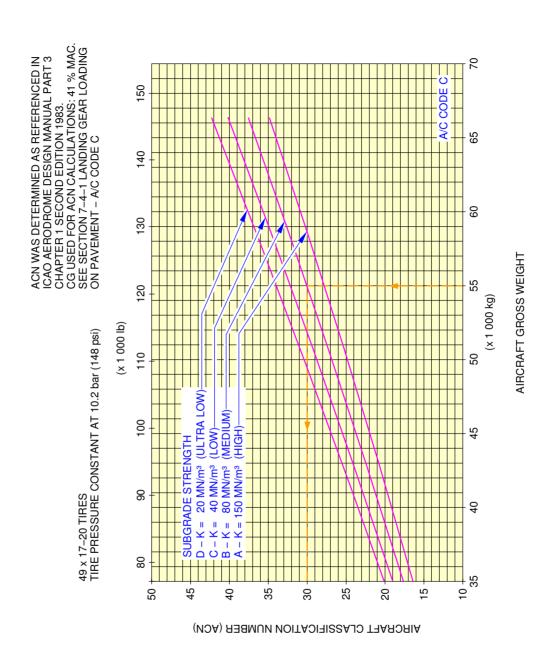
Aircraft Classification Number - Rigid Pavement

1. This section gives the Aircraft Classification Number - Rigid Pavement.

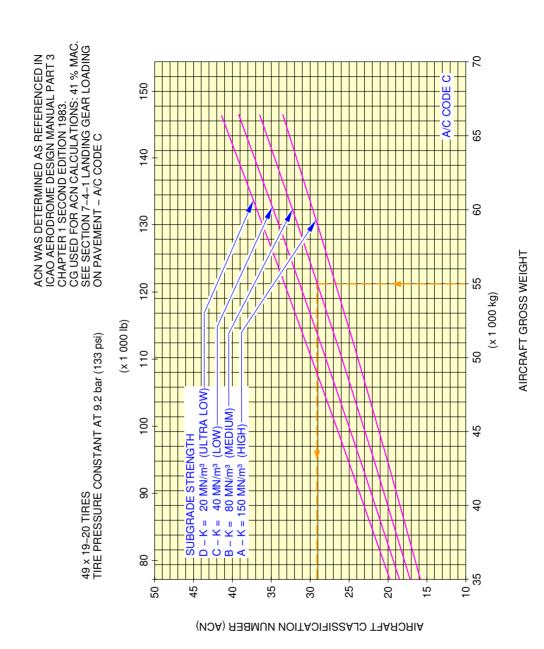
<u>NOTE</u>: For A/C Code definition, refer to chapter 7-1-0.



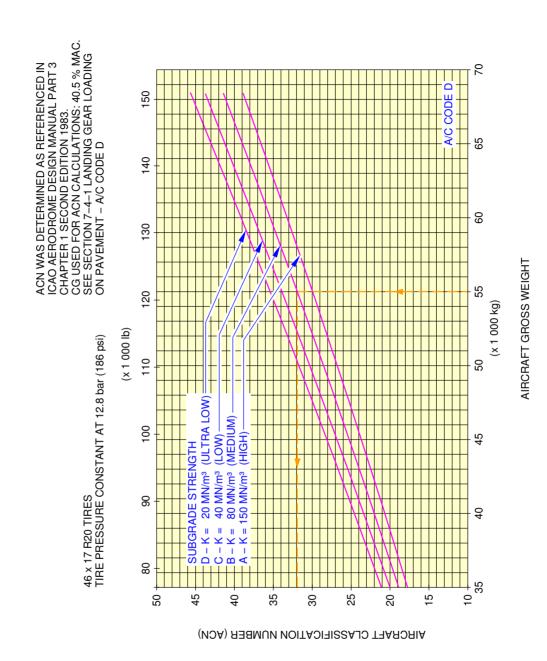
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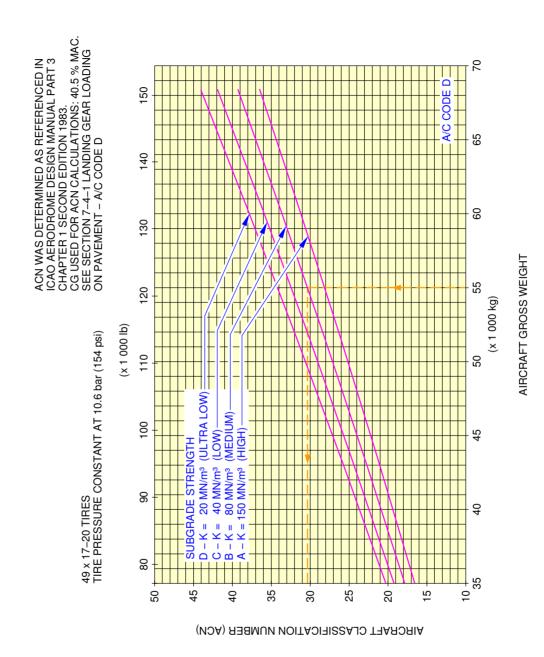
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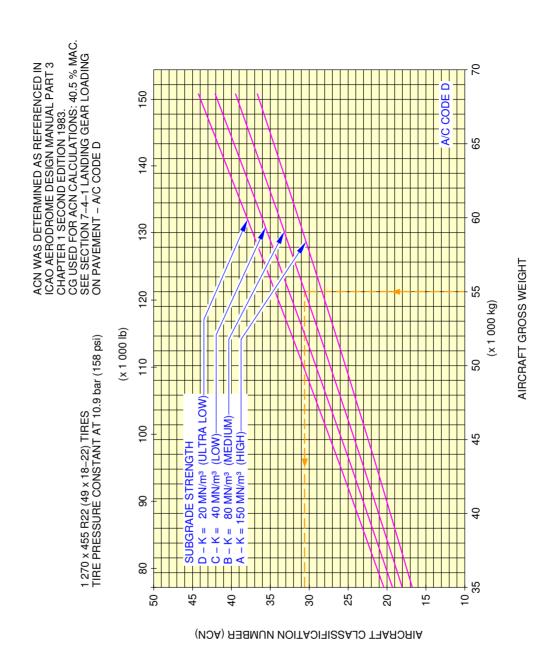
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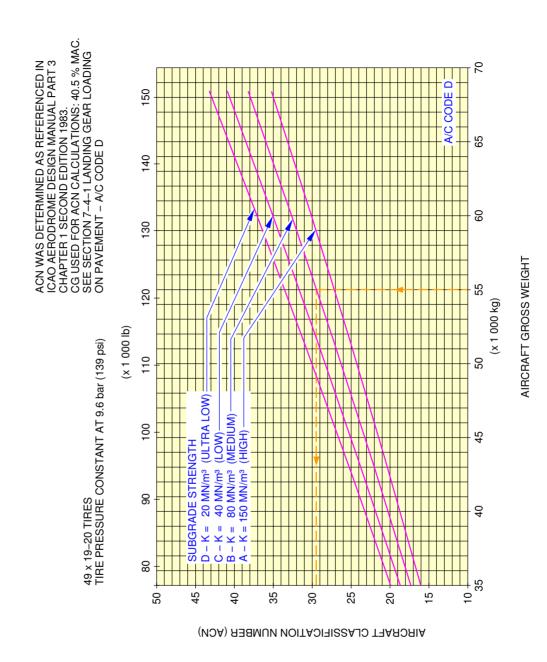
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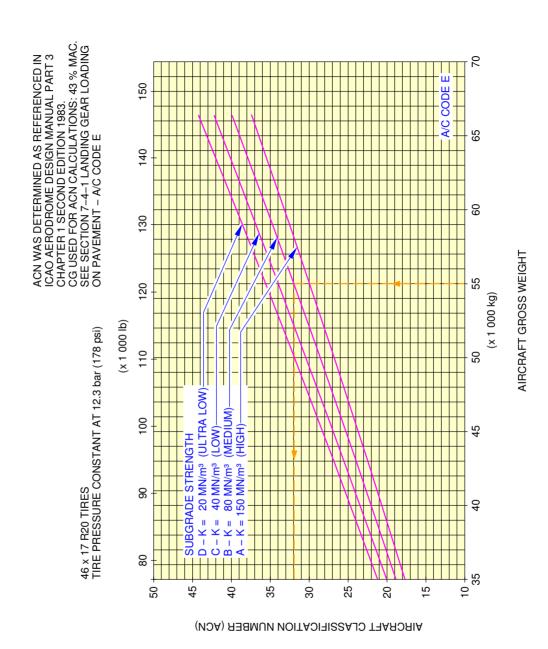
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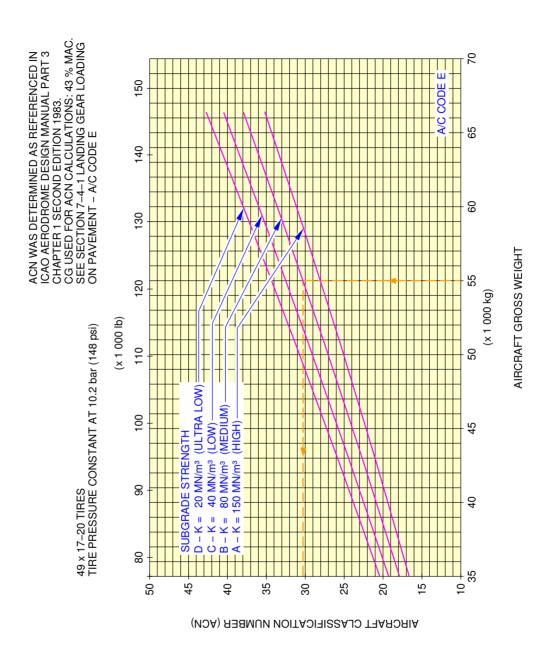
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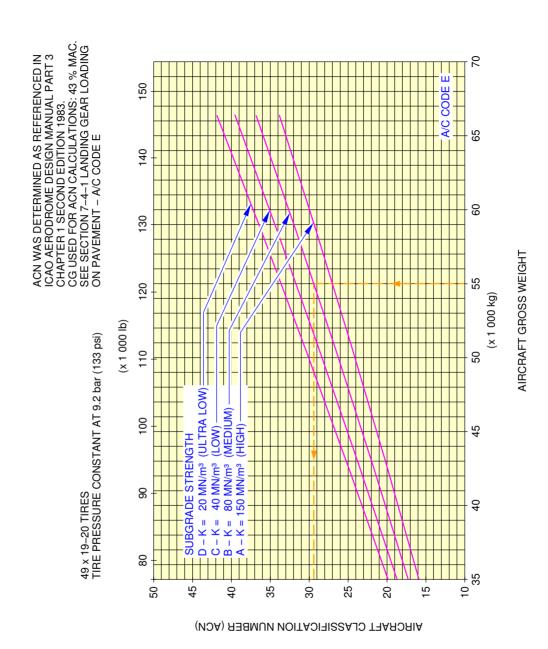
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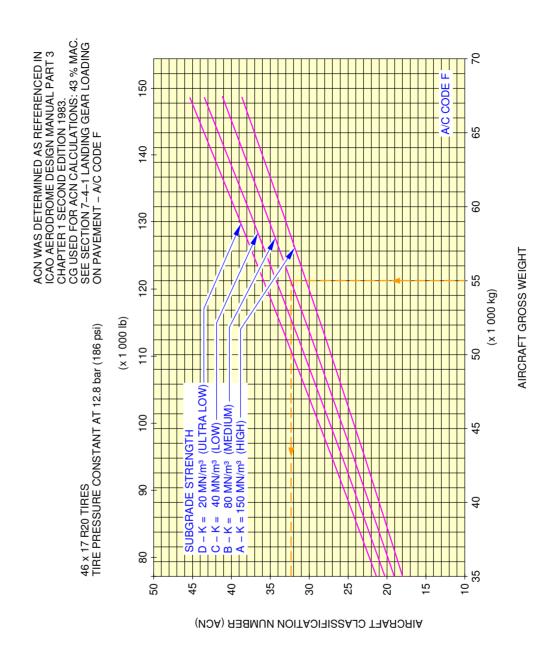
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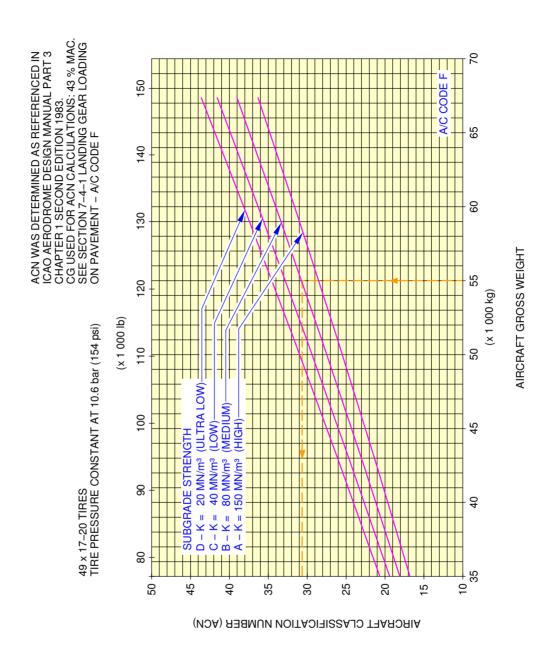
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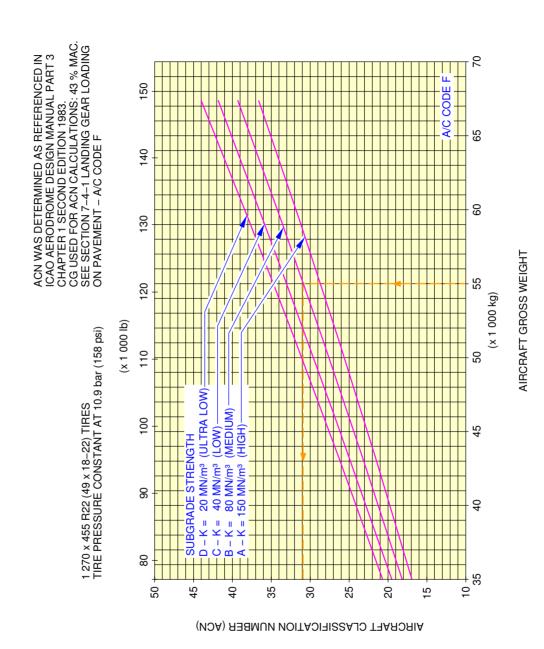
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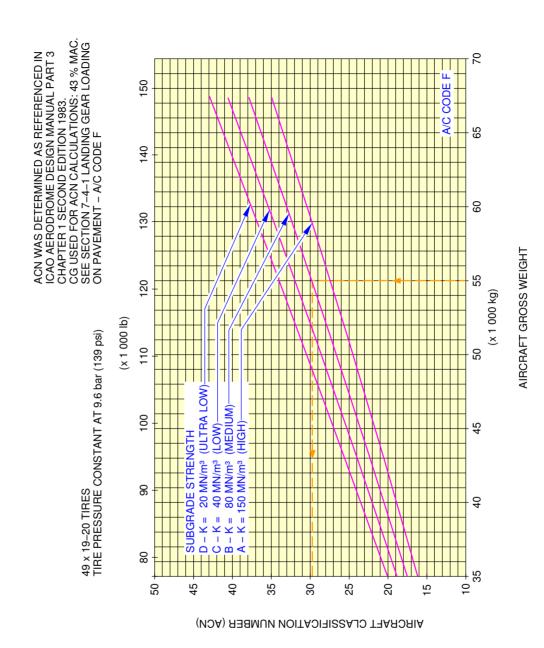
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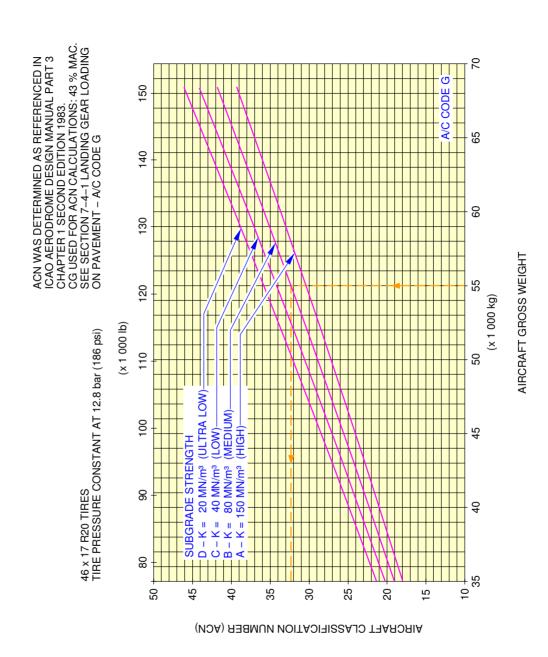
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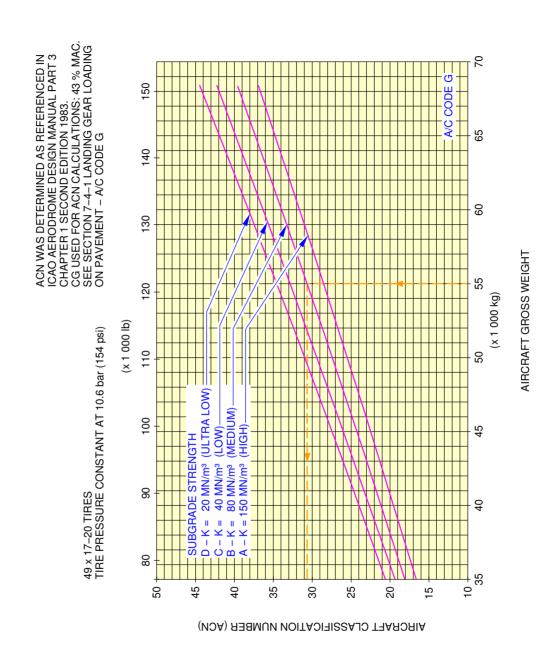
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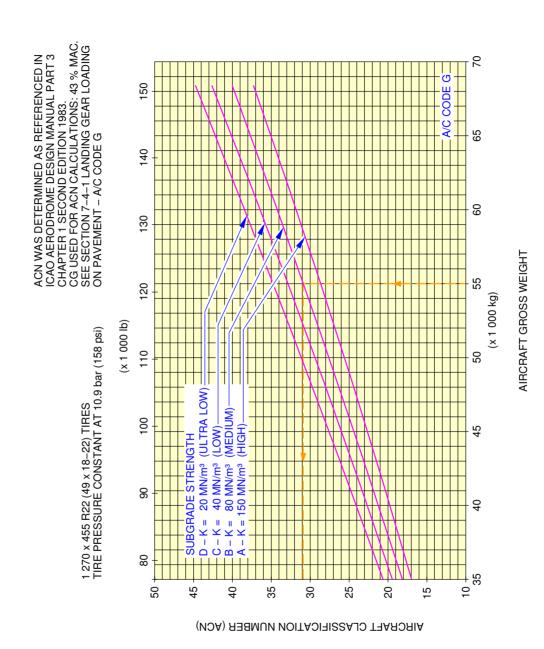
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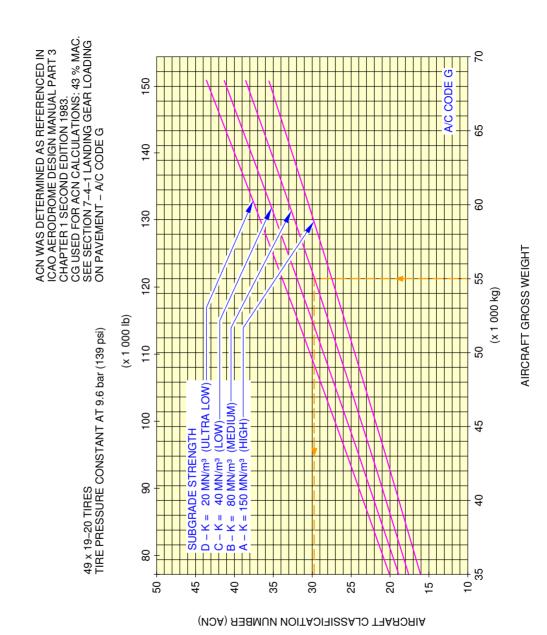
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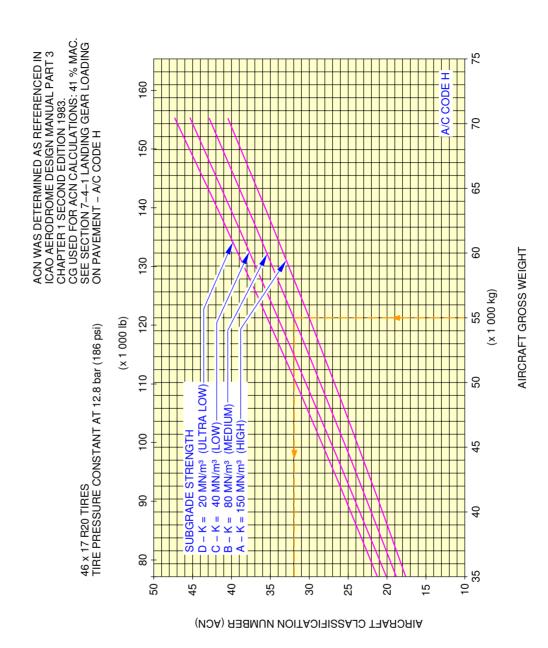
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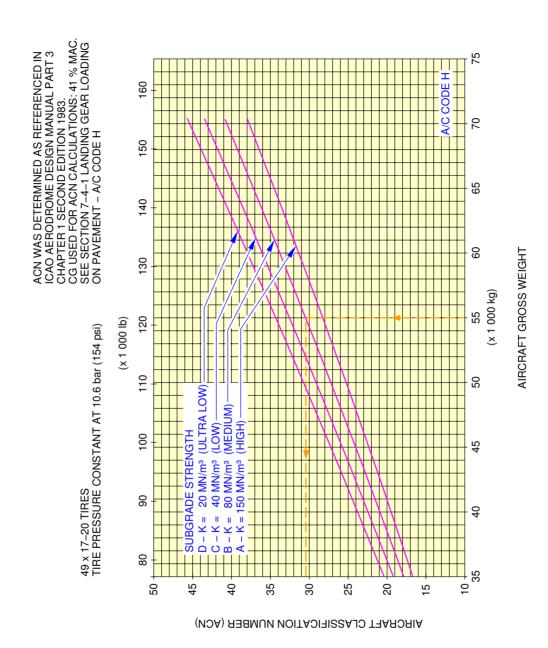
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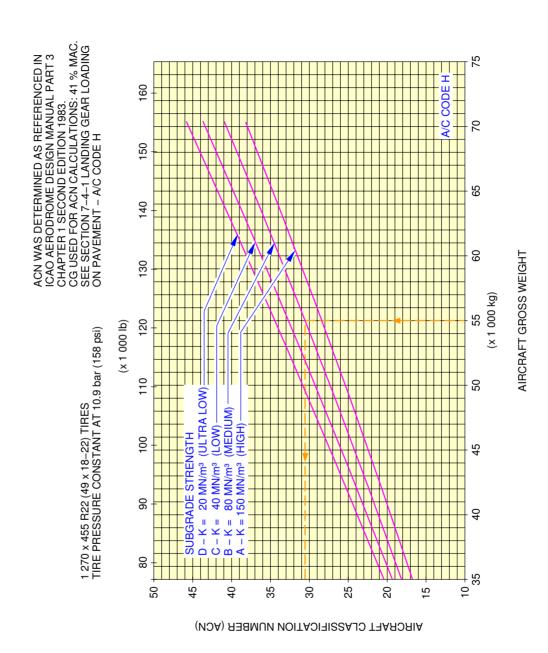
N\_AC\_070902\_1\_1380101\_01\_00



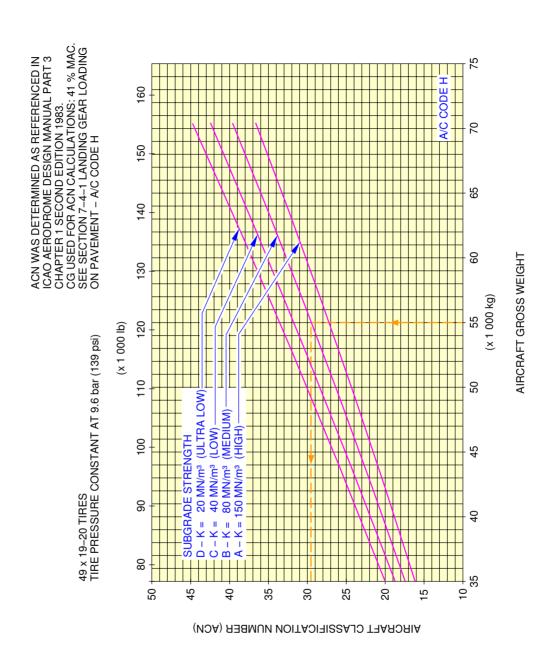
N\_AC\_070902\_1\_1390101\_01\_00



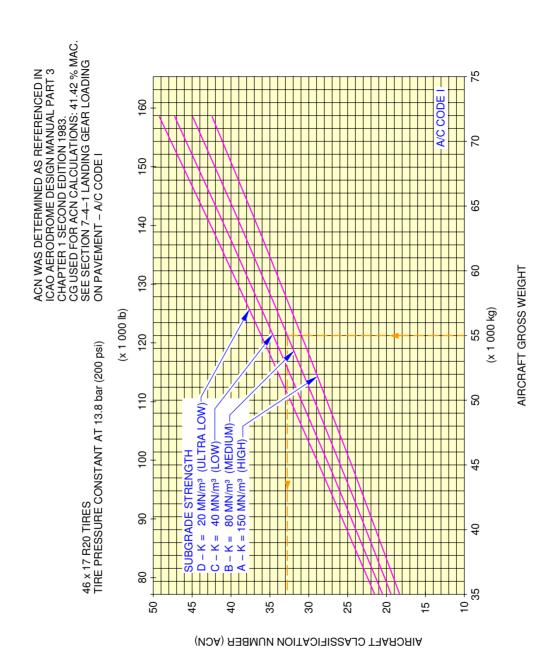
N\_AC\_070902\_1\_1400101\_01\_00



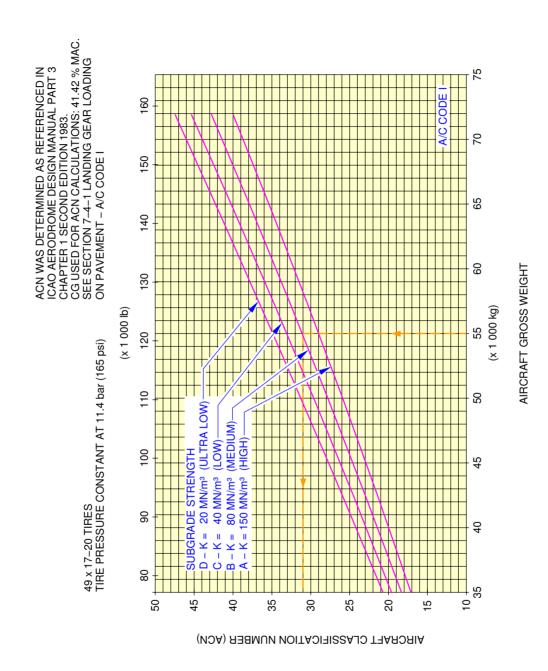
N\_AC\_070902\_1\_1410101\_01\_00



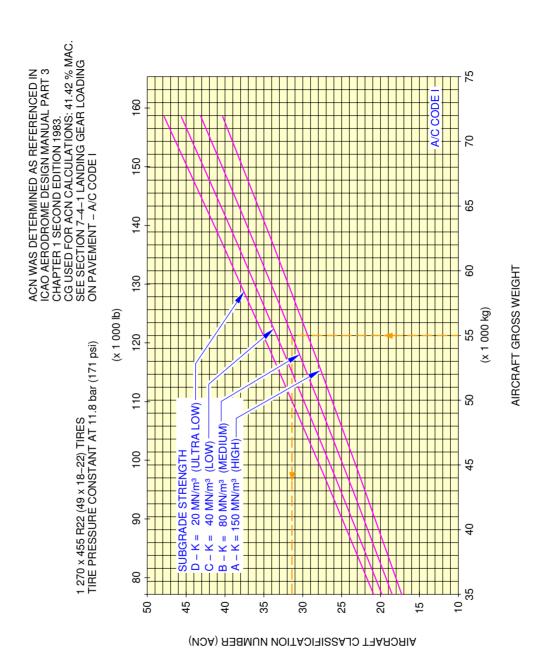
N\_AC\_070902\_1\_1420101\_01\_00



N\_AC\_070902\_1\_1430101\_01\_00

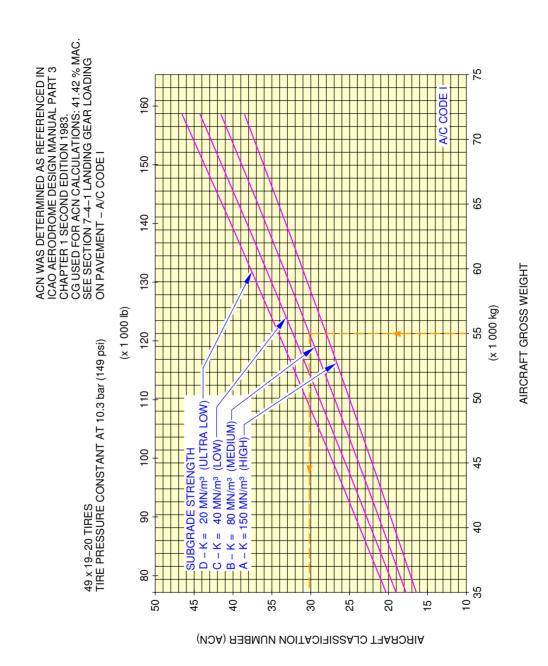


N\_AC\_070902\_1\_1440101\_01\_00



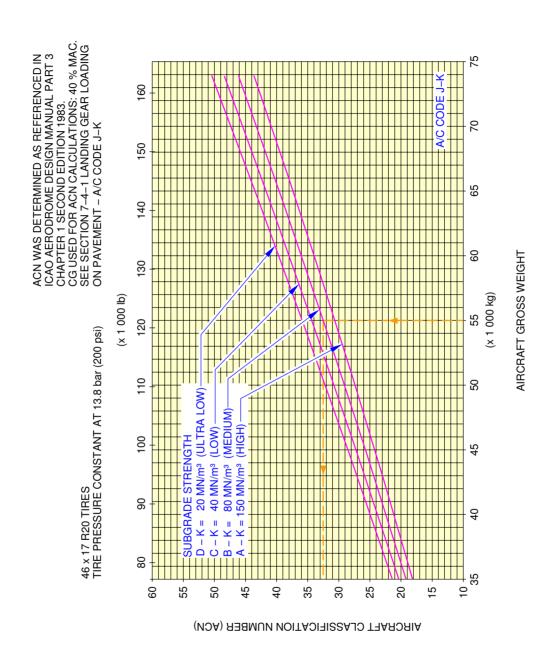
N\_AC\_070902\_1\_1450101\_01\_00

Aircraft Classification Number – Rigid Pavement FIGURE 25

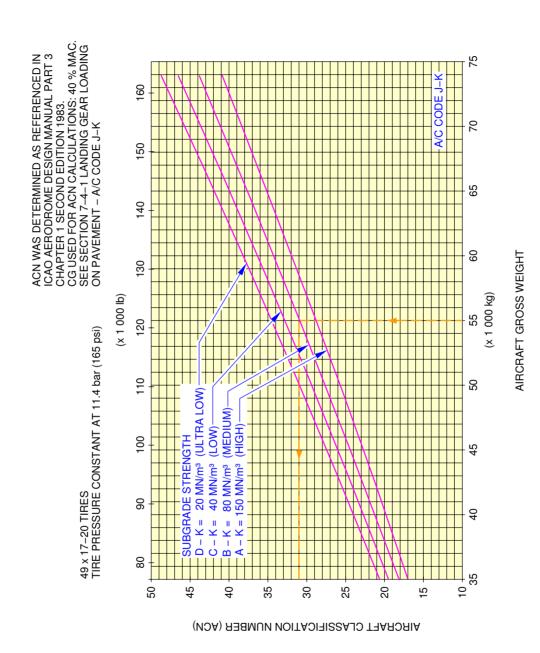


N\_AC\_070902\_1\_1460101\_01\_00

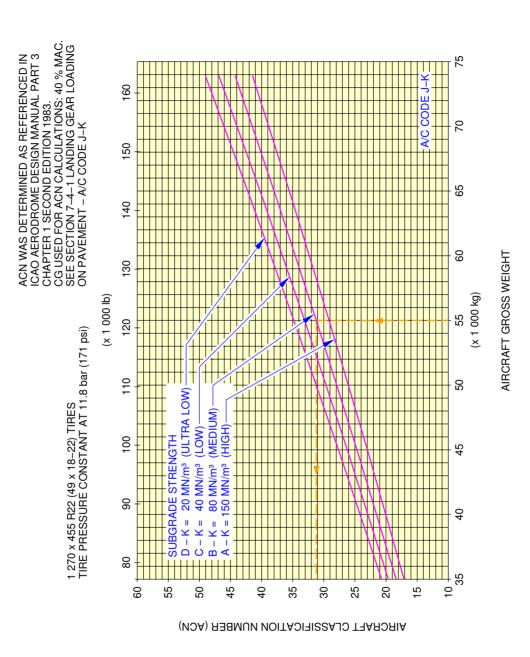
Aircraft Classification Number – Rigid Pavement FIGURE 26



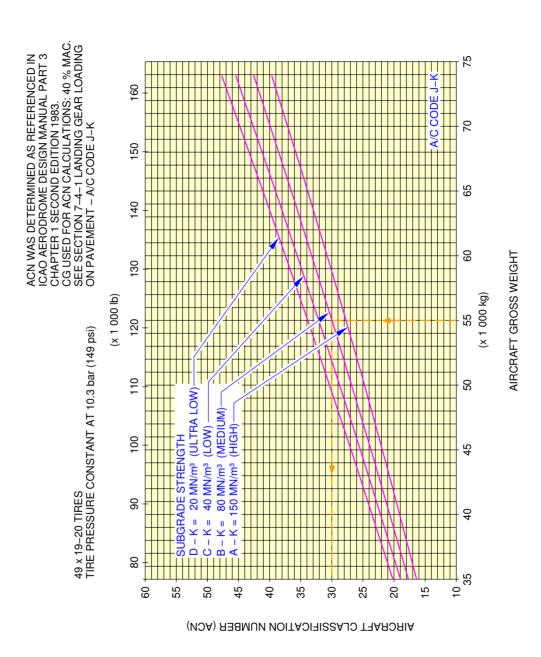
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N\_AC\_070902\_1\_1480101\_01\_00

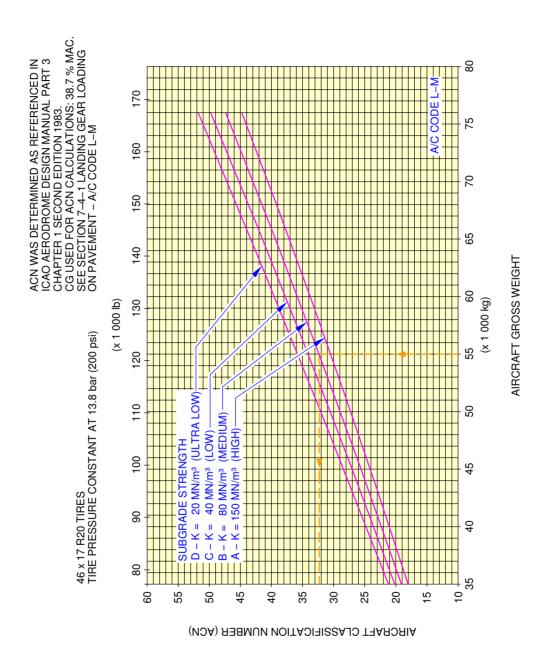


N\_AC\_070902\_1\_1490101\_01\_00

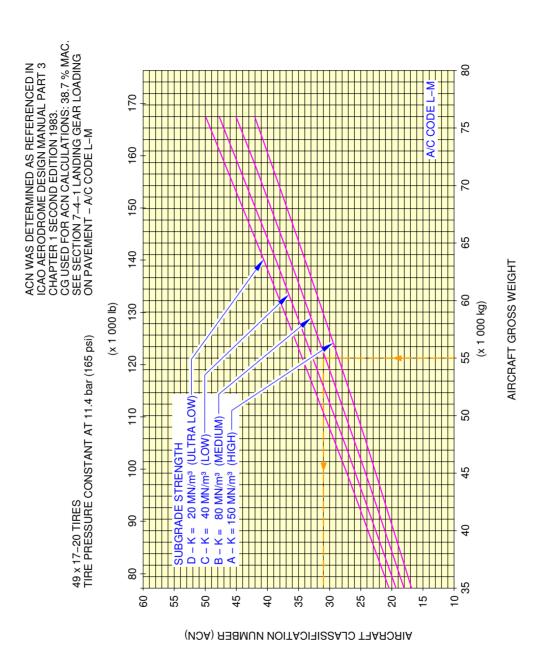


N\_AC\_070902\_1\_1500101\_01\_00

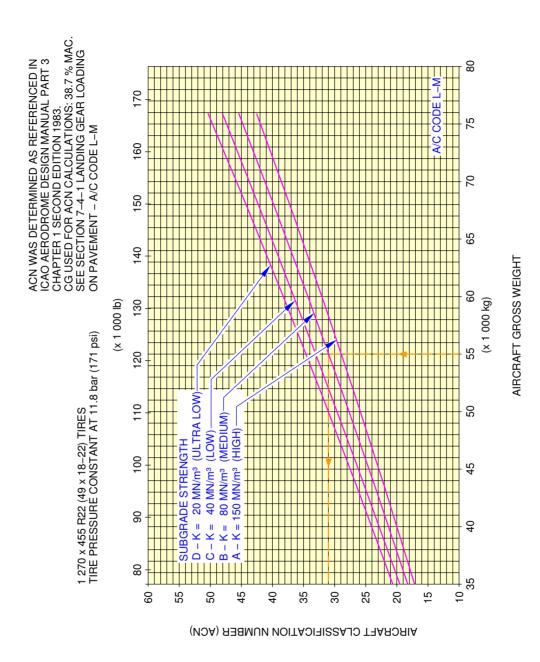
Aircraft Classification Number – Rigid Pavement FIGURE 30



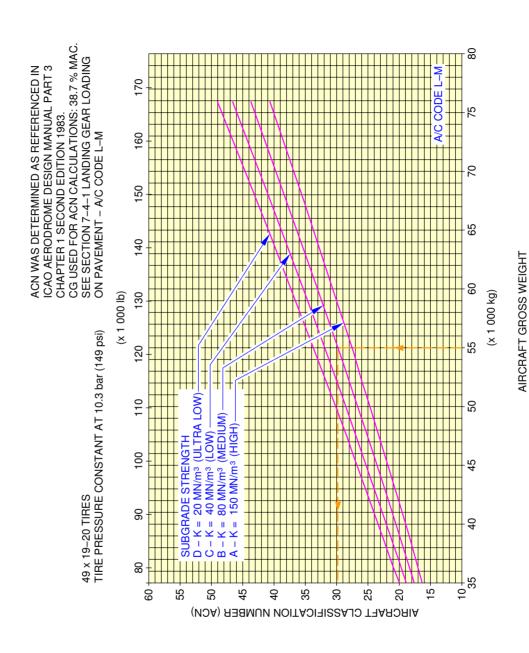
N\_AC\_070902\_1\_1510101\_01\_00



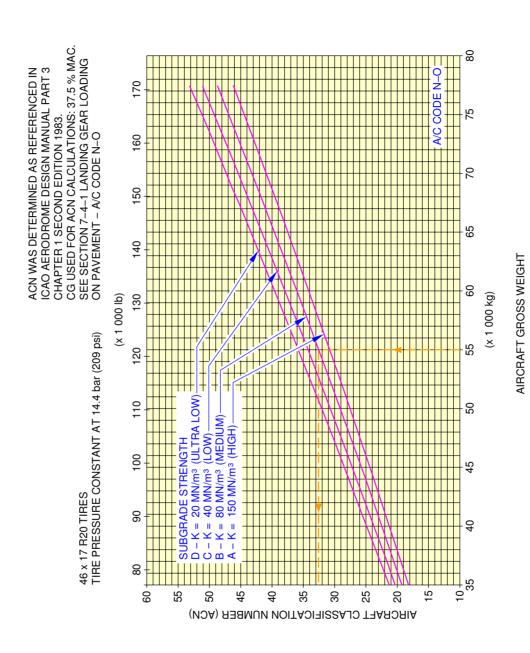
N\_AC\_070902\_1\_1520101\_01\_00



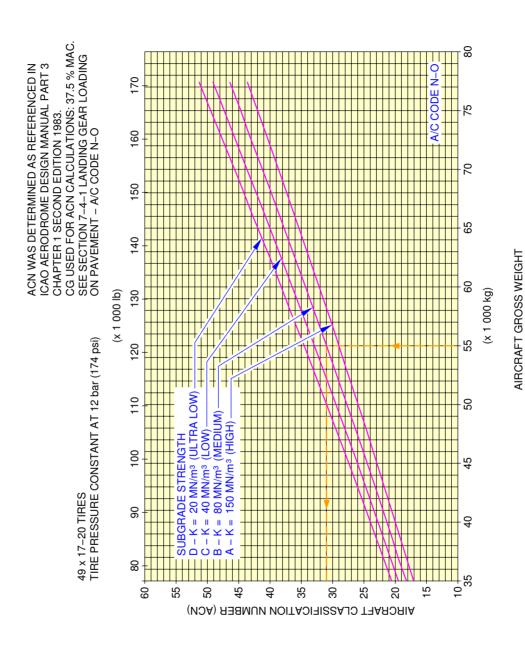
N\_AC\_070902\_1\_1530101\_01\_00



N\_AC\_070902\_1\_1540101\_01\_00



N\_AC\_070902\_1\_1550101\_01\_00



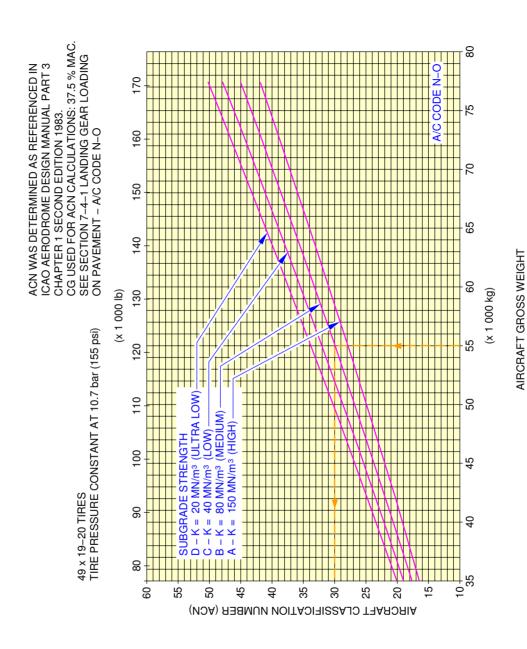
N\_AC\_070902\_1\_1560101\_01\_00

CG USED FOR ACN CALCULATIONS: 37.5 % MAC. SEE SECTION 7-4-1 LANDING GEAR LOADING ON PAVEMENT – AC CODE N-O (x 1 000 lb) 1 270 x 455 R22 (49 x 18–22) TIRES TIRE PRESSURE CONSTANT AT 12.3 bar (178 psi) 9 4 25 20 35 8 AIRCRAFT CLASSIFICATION NUMBER (ACN)

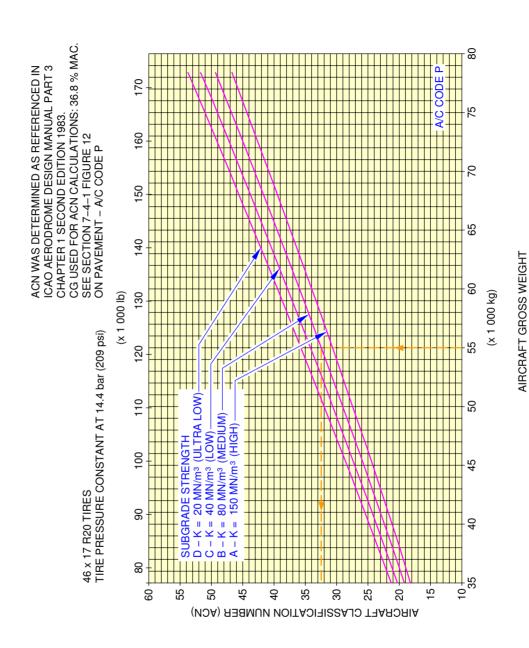
N\_AC\_070902\_1\_1570101\_01\_00

AIRCRAFT GROSS WEIGHT

Aircraft Classification Number – Rigid Pavement FIGURE 37



N\_AC\_070902\_1\_1580101\_01\_00



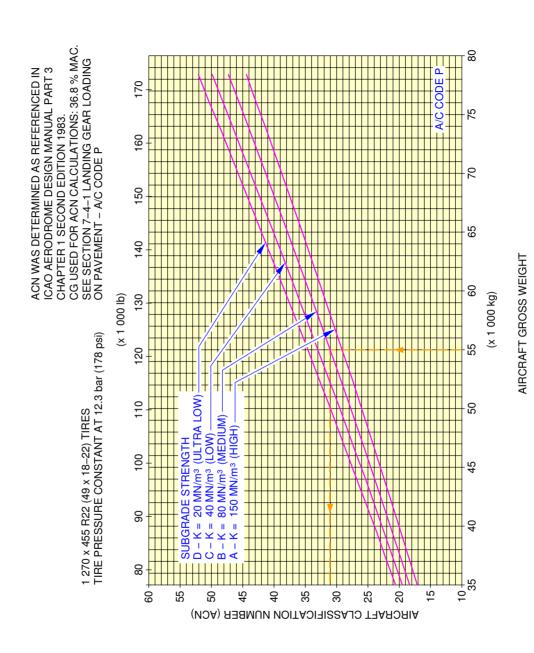
N\_AC\_070902\_1\_1590101\_01\_00

CHAPTER 1 SECOND EDITION 1983. CG USED FOR ACN CALCULATIONS: 36.8 % MAC. SEE SECTION 7-4-1 LANDING GEAR LOADING ON PAVEMENT – A/C CODE P (x 1 000 lb) 49 x 17–20 TIRES TIRE PRESSURE CONSTANT AT 12 bar (174 psi) 9 4 32 25 20 8 AIRCRAFT CLASSIFICATION NUMBER (ACN)

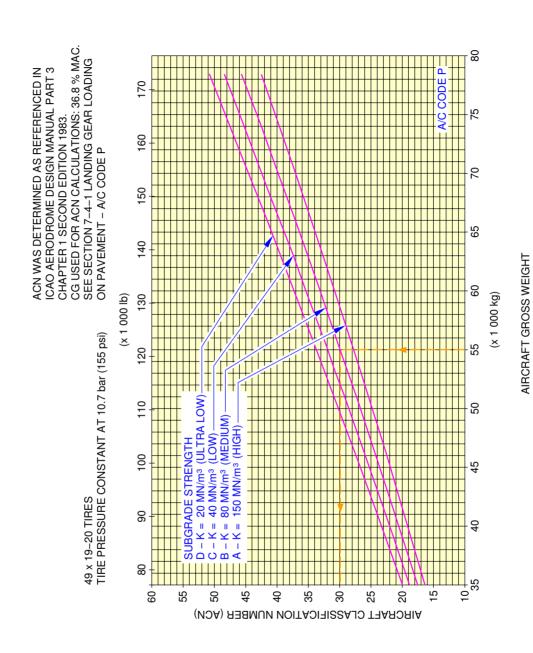
N\_AC\_070902\_1\_1600101\_01\_00

AIRCRAFT GROSS WEIGHT

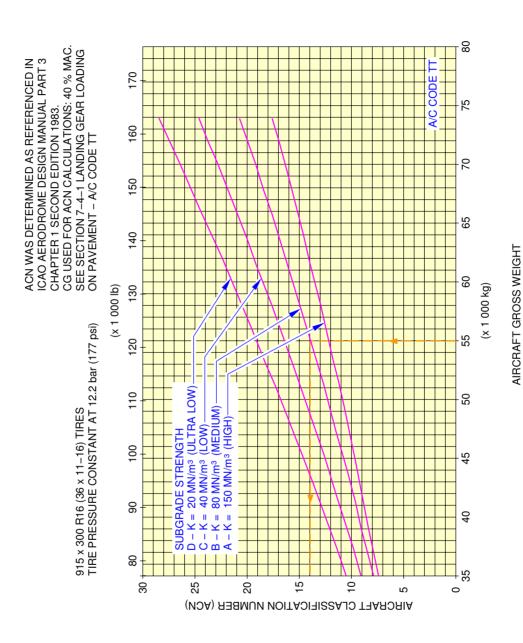
Aircraft Classification Number – Rigid Pavement FIGURE 40



N\_AC\_070902\_1\_1610101\_01\_00



N\_AC\_070902\_1\_1620101\_01\_00



N\_AC\_070902\_1\_1630101\_01\_00

#### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

### **DERIVATIVE AIRPLANES**

### 8-1-0 Possible Future Derivative Airplane

\*\*ON A/C A320-100 A320-200

### Possible Future Derivative Airplane

1. General

Derivative versions of the A320 are planned. All product line airplanes are studied for possible size changes that might be required for fulfilling future airline needs. History has proved that derivative airplanes of a given model can encompass both increases and decreases in linear dimensions and weight.

### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

# **SCALED DRAWINGS**

9-1-0 Scaled Drawings

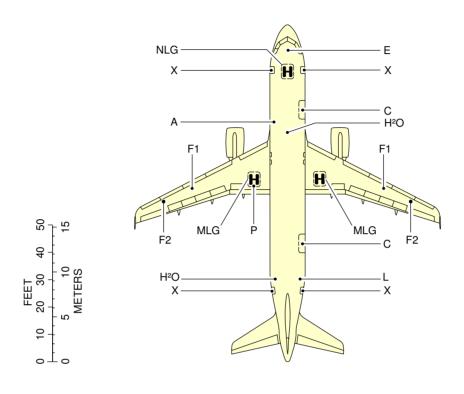
\*\*ON A/C A320-100 A320-200

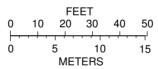
# **Scaled Drawings**

1. This section gives scaled drawings of the aircraft.

#### AIRPLANE CHARACTERISTICS FOR AIRPORT PLANNING

# \*\*ON A/C A320-100 A320-200





#### LEGEND:

A AIR CONDITIONING
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C CARGO COMPT DOOR L LAVATORY

E ELECTRICAL MLG MAIN LANDING GEAR
F1 FUEL (COUPLING) NLG NOSE LANDING GEAR

F2 FUEL (GRAVITY) P PNEUMATIC

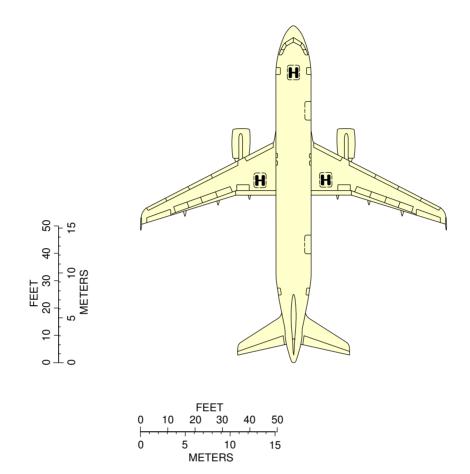
H<sup>2</sup>O POTABLE WATER X PASSENGER/CREW DOOR

NOTE: WHEN PRINTING, MAKE SURE TO ADJUST FOR PROPER SCALING.

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Scaled Drawing FIGURE 1

# \*\*ON A/C A320-100 A320-200



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Scaled Drawing FIGURE 2