

APPENDIX II-ZZ

Annual/100 Hour Inspection and Maintenance Checklist

ANNUAL/100 HOUR INSPECTION AND MAINTENANCE CHECKLIST

Use this inspection checklist outline as a convenient form with which to inspect the balloon. Note required information in the appropriate spaces provided. Refer to ACAI Part II, Section 5.0 for damage limitations, inspection criteria, and other critical details. The ACAI Manual, Section 6.0 includes repair and replacement procedures.

Date _____ W.O. _____ Inspected by _____

Balloon Owner
Name & Address _____

Balloon Model _____
Date of Manufacture _____
Registration Number _____
Total System Hours _____
Date Last Annual/100 Hr. _____
Hours Since Last Insp. _____

_____ Document Inspection
_____ Standard Airworthiness Certificate
_____ Registration Certificate
_____ Flight Manual
_____ Aircraft Logbook

Component Serial Numbers	Component Hours (if different than system hours)
Envelope _____	_____
Burner _____	_____
Basket _____	_____
Instruments _____	_____
Fuel Tanks (list types) _____	_____
_____	_____
_____	_____
_____	_____

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Note

This checklist is provided as an aid in performing the fabric tests required in Appendix II-A. This section includes critical information on testing procedures, inspection flow-charting, identification of key test areas, color-related test requirements, pass-fail criteria, examples and other data essential to completing the required evaluations.

Note

Inspection items highlighted with * are included as an Airworthiness Limitation found in section 3.0 of the ACAI.

ENVELOPE / FABRIC TESTING *			INITIAL APPROPRIATE BOXES		
Section # <i>'s</i>	Item	Inspect For	Yes	No	
Appendix II-A *	Envelope Testing (a) and (b)	275° Tell-tale Turned			

		More Than 150 Hours			

		More Than 2 Years Old			
			Mold Or Mildew Present		
			Fuel Consumption Increased		
			Note: If all of above are "No", no testing of standard Aerostar fabrics is required. If any "Yes", follow flow-chart routing.		
		(attach tell-tale here)	250° Tell-Tale Turned (If "Yes" Replace Tell-Tale)		
	Testing (a) Porosity		Average Less Than 50 cfm. (100 Hr. Requirement)		

			Porosity Area Less Than 10%		
			Average 50-75 Cfm. (50 Hr. Requirement)		
	Aerostar Fabric Testing (b) Strength Grab Tensile		More Than 45 Lbs. (100 Hr. Requirement)		

		More Than 35 Lbs. (50 Hr. Requirement)			
		Any single test below 30 lbs. (Fail)			
Aerostar Fabric Testing (c) Strength Tongue Tear		All Tests Above 3.7 Lbs. (Pass 100 Hr.)			

		Any Test Below 2.5 Lbs. and Above 1.75 Lbs. (Pass 50 Hr.)			
		Any Single Test Below 1.75 Lbs. (Fail)			
Aeromax / Aerolite Fabric Testing (b) Strength Grab Tensile		More Than 35 Lbs. (Pass 100 Hr. Requirement)			

		More Than 30 Lbs. (Pass 50 Hr. Requirement)			
		Any Single Test Below 30 Lbs. (Fail)			
Aeromax / Aerolite Fabric Testing (c) Strength Tongue Tear		All Tests Above 2.5 Lbs. (Pass 100 Hr.)			

		Any Test Below 2.5 Lbs. and Above 1.75 Lbs. (Pass 50 Hr.)			
		Any Single Test Below 1.75 Lbs. (Fail)			

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ENVELOPE / FABRIC TESTING (continued)			INITIAL APPROPRIATE BOXES	
<i>Section #</i>	<i>Item</i>	<i>Inspect For</i>	<i>Yes</i>	<i>No</i>
<i>Appendix II-A * (continued)</i>	Calendered Fabric <i>Testing (b) Strength Grab Tensile</i>	<i>More Than 35 Lbs. (100 Hr Requirement)</i> <i>(Requires Additional Tongue Tear Test)</i>		
		<i>More Than 30 Lbs. (50 Hr. Requirement)</i> <i>(Requires Additional Tongue Tear Tests)</i>		
		<i>Any Single Test Below 30lbs. (Fail)</i>		
	Calendered Fabric <i>Testing (c) Strength Tongue Tear</i>	<i>All (1) Tests Above 3.7 Lbs. (100 Hr. Requirement)</i> <i>Or</i> <i>All (5) Tests Above 2.5 Lbs. (100 Hr. Requirement)</i>		
		<i>All (5) Tests Below 2.5 Lbs. and Above 1.75 Lbs. (50 Hr. Requirement)</i>		
		<i>Any Single Test Below 1.75 Lbs. (Fail)</i>		
		<i>Federal Test Method Standard 191b</i>		
	<i>Testing Alternate (Factory Only)</i>	<i>Federal Test Method Standard 191b</i>		
	<i>Special Shapes</i>	<i>Contact Aerostar Before Proceeding</i>		
	<i>Testing Results</i>	<i>Passed Annual / 100 Hour</i>		
<i>Passed Annual / 50 Hour</i>				
<i>Fail Airworthiness</i>				

ENVELOPE			INITIAL APPROPRIATE BOXES			
<i>Section #'s</i>	<i>Item</i>	<i>Inspect For</i>	<i>Passed</i>	<i>Failed</i>	<i>Maint. Performed</i>	<i>Repaired Replaced</i>
<i>5.1.2 *</i>	<i>Fabric Inspection (Special Shapes; Includes Baffles, Catenaries, & Appendages)</i>	<i>Holes</i>				
		<i>Tears</i>				
		<i>Abrasions</i>				
		<i>Seam Separations</i>				
		<i>Heat Damage</i>				
		<i>Previous Repairs</i>				
<i>5.1.3. *</i>	<i>Webbing (Special Shapes; Includes Baffles, Catenaries, & Appendages)</i>	<i>Burns</i>				
		<i>Cuts</i>				
		<i>Abrasions</i>				
		<i>Stitching Secure</i>				
		<i>Previous Repairs / Splices</i>				

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Envelope (continued)			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.1.4 *	Suspension Cables; (1) Steel	Broken Wires				
		Kinks				
		Rust				
		Excessive Wear				
		Direct Flame Exposure				
	Suspension Cables; (2) Kevlar	Outer Cover Damage				
		Yellow Core Exposed				
		Heat Damage / Flexibility				
		Whip Wrap Broken Thread				
		Whip Wrap Heat Damage				
		Whip Wrap Abrasion				
		Thimble Rotation				
		Thimble Distortion Or Deformation				
	Kevlar Cables Require Proof Loading					
Note: * Kevlar Cables With More Than 2,000 Hours In Service Must Be Proof load Tested in Accordance With The Airworthiness Limitations, Chart 301 in Section 3.0 This Test Must Be Repeated Every 500 Hours Thereafter.						
5.1.5	Rally Load Frame	Cracks				
		Broken Welds				
		Quick Pins				
5.1.6 *	Four Point and Two Point Suspension Fittings	Structurally Sound				
		Cracks				
		Broken				
		Bolt / Nut Tightened – Quick Release Pin Functional				
5.1.7 *	Carabiner	Smooth Operation				
		Cracks				
		Bends				
		Spring Gate / Threaded Lock				
5.1.8 *	Rip –Top/Para-Rip Deflation Panel Fit	Proper Fit In Port				
		Minimum Slack Material Between Load Tapes (2" / 3")				
		Tears / Stress Areas				
Appendix II-G *	Hook and Pile Inspection & Testing	Hook & Pile Cleanliness, Damage, Debris				
		Hook & Pile Wear/Heat Deterioration				
		Hook & Pile Strength Test (30 Lbs.)				

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Envelope (continued)			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.1.10 *	Springtop™ Deflation Assembly	Proper Fit And Seal In Port				
		Increased Fuel Consumption?				
		Pocket Stitching / Fabric Integrity				
		Hook & Pile Debris (Super-pressure)				
		Lubricate Torsion Springs				
		Top Attachment Points Secure				
		Pocket Stitching / Fabric Integrity				
		Bent Spring				
	Actuation Lines	Fraying				
		Cuts				
		Abrasion				
		Burn Damage				
	Pulley Operation	Sheave Bushing Rolls Freely (Lubrication)				
		Cracks				
		Broken Pulley				
	Top Attachment Points	Fabric Tearing				
Stitching Broken / Loose						
5.1.11 *	Rip Top, Spring Top™ and Para-Rip Top Deflation Panel and Accessories	Fabric And Stitching Intact				
		Tears				
		Abrasion				
		Broken Stitching				
	Deflation Panel Pull Out Cable 3/32" (early rip tops)	Broken Strand				
		Kinks				
		Rust				
		V-Ring Wear (1/16" Max.)				
	Deflation Panel Pull Out Strap (Kevlar or Nylon) 20% damage in 12"	Abrasion				
		Cuts				
		Burns				
		Routing Ring Jamming (Upper 55')				
	Snap & D-ring Stitching at Gondola End of Pull Out Strap	Function Properly				
		Abrasion				
		Broken Stitching				
		Loose Stitching				

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Envelope (continued)			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.1.12 *	Parachute Top	Proper Fit And Seal In Port				
		High Fuel Consumption				
		Webbing Torn / Separated From Fabric				
		Cords Undamaged, Knots Secure				
	Pull Line	Inner Core Damage				
		Outer Cover Damage				
		Excessive Shrinkage (5' Slack)				
	Envelope Anchor Points (Stickman)	Wear				
		Abrasion				
		Broken Stitching				
		Damaged Webbing				
	Routing Ring Attachment (near base of envelope) Stitching, Webbing, Cords	Abrasion				
		Cuts				
		Burns				
		Knots Secure				
		Excessive Wear				
Pulley Rigging	Line Fraying					
	Pulley Lubrication					
5.1.13 *	Aerochute Top	Proper Fit & Seal In Port				
		High Fuel Consumption				
	Webbing / Center Patch	Cuts				
		Tears				
		Broken Stitching				
	Combination Lines	Cuts				
		Abrasion / Wear				
		Burns				
		Knots, Secure				
	Pull Line	Inner Core Damage				
		Outer Cover Damage				
		Excessive Shrinkage (5' Slack)				
	Envelope Anchor Points (Stickman)	Wear				
		Abrasion				
		Broken Stitching				
Damaged Webbing						

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Envelope (continued)			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.1.13 * (continued)	Routing Ring Attachment (near base of envelope) Stitching, Webbing, Cords	Abrasion				
		Cuts				
		Burns				
		Knots Secure				
		Excessive Wear				
	Pulley Rigging	Line Fraying				
		Pulley Lubrication				
	Apex Cords	Abrasion / Wear				
		Knots Secure				
Verify Lengths						
5.1.14 *	Maneuvering Vent / Rotator	Clean And Test Hook And Pile Fasteners				
		Check Fabric Edges And Webbing For Damage				
		Check Control Line Guide Ring Attachments				
		Check Control Lines For Damage				
5.1.15	Envelope Skirt / Dipper	Inspect Fabric, Webbing And Velcro For Damage				
		Inspect Skirt Hoop For Damage				
Compliance With All Applicable Service Bulletins And Airworthiness Directives						
Notes:						

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Burner Systems			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.2.1	Burner Assembly	General Integrity				
5.2.2 *	Blast Valve Servicing	Replace O-Ring And Copper Gasket Lubricate With Krytox				
5.2.3 *	Blast Valve Operation	Proper Operation And No Leaks				
5.2.4	HPIII Trigger Assy.	Smooth Operation				
5.2.5 *	Metering Valve	Proper Operation, No Leaks				
		Valve Stem Straight				
		Packing Nut Tight				
5.2.6 *	HPII Update Pilot, HPIII	Vapor Converter Serviced				
		Pilot Light Orifice Removed, Cleaned, Inspected for Damage and Orifice Checked With .011 Go Gauge				
		Proper Operation				
5.2.7 *	Liquid Pilot Light Valve Servicing	Proper Operation				
		Lubricate Handle				
5.2.8 *	Pilot Light (Screen Head Style)	Proper Operation				
5.2.9 *	Vapor Pilot Light Valve Servicing	Check Valve Stem Packing Nut				
5.2.10 *	Burner Fitting	Integrity, No Leaks				
5.2.11 *	Pressure Gauge	Proper Operation, No Leaks				
5.2.12 *	Burner Operation	Proper Flame Alignment, Proper Operation				
5.2.13 *	Gimbal	Proper Operation				
5.2.14 *	Burner W/Elec. Blast Battery Power Cables & Connections	Proper Operation				
		Verify Charge				
		Damage				
5.2.15 *	Burner W/Elec. Ignition Battery Power Cables & Connections	Proper Operation				
		Verify Charge				
		Damage				
5.2.16	Piezo Electric Igniter	Proper Operation - Adjust Electrode				
		Clean Or Replace				

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Burner Systems (continued)			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.2.17	<i>Glow Valve</i>	<i>Proper Operation</i>				
	<i>Handle</i>	<i>Free From Damage</i>				
	<i>Nozzle Bracket</i>	<i>Loose, Heat Damage</i>				
	<i>Nozzle Orifice</i>	<i>Unobstructed</i>				
	<i>Pilot Tube</i>	<i>Adjustment</i>				
Compliance With All Applicable Service Bulletins And Airworthiness Directives						
Notes:						

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Fuel Systems						
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.3.1 * Appendix II-E	Fuel Tanks	Inspect For Structural Integrity, No Leaks				
		Verify That Dot 173.34(E) (10) External Visual Or Hydrostatic Inspection Date Is Current				
		Pressure Relief Valve Replaced (5 Yr. - 10 Gal)				
Note: Remove all 10 gallon fuel cylinders from service per Service Bulletin SB-137						
5.3.2 *	Tank Liquid Valves	Proper Operation, No Leaks, Shuts Off Completely				
5.3.3 *	Tank Vapor or Liquid Nupro Valve	Nupro Valve Stem Packing Nut Torqued, Proper Operation, No Leaks, Shuts Off Completely				
5.3.4 *	Pilot Light Regulator	Proper Operation, No Leaks				
5.3.5 *	Fuel Quantity Gauge	Proper Operation, No Leaks				
5.3.6 *	Fuel Hose Inspection	Submersion Leak Test				
		Abrasion				
		Cuts				
		Rusting				
		Corrosion				
	Fuel Hose	10 Yr. Replacement				
	Fuel Line With Male POL Fitting	Replace O-Ring				
5.3.7 *	Fittings	No Leaks				
		No Corrosion, Crossthreading				
5.3.8	Fuel Supply System	Test For No Leaks				
5.3.9 *	Pressure Relief Valve	No Signs of Leaks or Discharge				
		Adapters And Caps In Place				
		5 Year Replacement (10 Gal. Tanks)				
5.3.10	Tank Liquid Level Valve (Spit Valve)	No Leaks, Proper Operation, Shuts Off Completely				
Compliance With All Applicable Service Bulletins And Airworthiness Directives						
Notes:						

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Basket			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.4.1 *	Rattan	Damage Within Allowable Limits				
		Previous Repairs				
5.4.2 *	Plywood Floors	Decay				
		Delamination				
		Integrity				
5.4.3 *	Tanks Straps	Fasteners, Buckles				
		Webbing Abrasions, Cuts				
		Stitching				
		Anchors & Vertical Supports				
		Top Strap Position (Vertical Tanks)				
5.4.4	Tank Shoes	Secured To Floor				
		No Damage				
5.4.5	Fire Extinguisher	In Good Condition / No Damage				
		Secured In Gondola				
		Recharged As Required				
5.4.6	Interior Handles	In Good Condition / No Damage				
5.4.7	Exterior Handles	In Good Condition / No Damage				
5.4.8	Scuff Leather	Loose				
		Tears				
		Abraded Holes				
5.4.9 * Hardware	Quick Release Pins	Bent Pins				
		Heads Loose				
		Removal Without Depressing Button				
	Wirelock Pins	Bent Pins				
		Proper Pin For Gondola Model				
		Spring Gate Secure				
Aircraft Bolts / Nuts	In Good Condition / No Damage					
Floor /Skid Hardware	In Good Condition / No Damage					
Seat Hardware	In Good Condition / Holds Seat Securely					

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Basket (continued)			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.4.10 *	Skids (All Models)	Secure				
		Decay				
		Cracks				
		Excessive Wear				
		Loose Butt Joints				
		Bolts Wearing Weaving Substrate Cracked Or Damaged				
Note : *	Inspect All Aluminum And Stainless Steel Tubing In Sections 5.4.12 Through 5.4.14 In Accordance With The Details And Specification Of Section 5.4.11. Inspect Each Tube To Insure That There Is No Cracking, Kinking, Buckling, Collapse, Localized Overstress, Deep Scratches, Uncontrolled Localized Bends, Uncontrolled Gradual Bends, Beyond Acceptable Limits.					
5.4.12	Lower Gondola Frames	In Good Condition No Damage Beyond Limits (See Section 5.4.11) Properly Secured				
5.4.13 *	Lower Frame / Superstructure Interface (All Models)	No Oversized Holes In Tubing				
		Holes Properly Aligned				
		Interface Pin Removed & Inspected				
		Over-sleeves Removed & Inspected				
		Quick Pin Keeper Installed (If Needed)				
		All Hardware In Good Condition And Properly Tightened				
5.4.14 *	Superstructures (All Models)	In Good Condition No Damage Beyond Limits (See Section 5.4.11) All Hardware Secure And In Good Condition Burner Block Alignment				
	4-Point Aluminum	Lower Load Blocks Inspect For Damage Verify SB# 133 Compliance (Redundancy Cable)				
5.4.15	4-Point Load Blocks	Secure / No Damage				
5.4.16	Burner Block (4-Point & AFX)	Secure / No Damage / Proper Alignment				
5.4.17	2-Point Burner / Load Block	Secure / No Damage / Proper Alignment				
5.4.18	RB Ride Gondolas	Side-Rail Frame In Good Condition Welded And Clamped Connections Interior Passenger Pads / Dividers Entry / Exit Steps				
	RB6, RB8, RB12	Secondary Lower Frames Pilot Compartment /Floor / Spacers				

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Basket (continued)			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.4.19 *	AFX Top Frame Tubes	Bends				
		Cracks				
		Damage				
	AFX Load Fittings	Main Blocks				
		Socket Tubes				
		Lugs				
	AFX Carabiners	Smooth Operation				
		Excessive Wear				
	AFX Support Rods	Surface Damage				
		Bends				
		Heat Damage				
	AFX Leather Cover	"Hinge" Damage				
		Webbing Stitching Intact				
AFX Lower Frame Rod Sockets	Cracks					
	Bends					
	Hole Distortion					
AFX Stabilizer Brace	Secure					
AFX Cables (Upper And Lower)	Broken Stands					
Lower AFX Cable	Service Letter #112 Compliance					
AFX Hardware	Secure / Undamaged					
5.4.20 *	Aluminum Square Perimeter Tubing (Model G only)	Cracked				
		Broken				
		Weld Failure				
5.4.21	Fiberglass Liners (Model G only)	Hole More Than 3 Inches				
		Cracks More Than 4 Inches				
Compliance With All Applicable Service Bulletins And Airworthiness Directives						
Notes:						

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Instruments			Initial Appropriate Boxes			
Section #S	Item	Inspect For	Passed	Failed	Maint. Performed	Repaired Replaced
5.5.1	General Inspection	Mounted Securely ----- Battery Voltage Checked				
5.5.2	Standard Altimeter	Pressure/Altitude Check				
	Ball 655 Altimeter	Verify Proper Reading				
	Ball M-55 Altimeter	Verify Proper Reading				
	Ball M57R Altimeter	Verify Proper Reading				
5.5.3	Rate-Of-Climb	Verify Proper Functioning				
5.5.4	Thermocouple Wire / Sensor	End Cracking ----- Separation Of Wires				
	Digital Wire / Sensors	Wires And Connectors Inspected ----- Sensors Inspected				
5.5.5	Thermocouple Operation	Proper Operation ----- Accuracy ($\pm 5^{\circ}\text{F}$)				
5.5.6	Digital Pyrometer Operation	Proper Operation ----- Accuracy ($\pm 5^{\circ}\text{F}$)				
5.5.7	AEGIS IR™ Operation	Verify Operation ----- Check For Accuracy ($\pm 5^{\circ}\text{F}$) ----- Battery Voltage Checked				
		Temperature Probe	Undamaged			
		Receiver (Optic)	Undamaged ----- No Lens Scratches			
5.5.8	Ball M57R Pyrometer	Battery Voltage Checked ----- Verify Operation ----- Check For Accuracy ($\pm 5^{\circ}\text{F}$)				
Compliance With All Applicable Service Bulletins And Airworthiness Directives						
Notes:						