



PRE-PURCHASE EVALUATION BEST PRACTICES



With the Support of



Developed By

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SPECIAL THANKS

With sincere gratitude to George Kleros, Zach Ungerleider, Delray Dobbins, Josh Perkins, and Mark Thibault for their invaluable contributions and subject matter expertise.

FEEDBACK WELCOME

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For more information: <https://iada.aero/members/ppe-best-practices>

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OVERVIEW

Pre-purchase evaluations are core to the aircraft transaction process. Over the years, these events have grown to become more time-consuming and have, in many cases, taken on more technical activities and risk than reasonably necessary. These conditions have brought the industry to a point where we chose to revisit the entire process and offer a more practical and financially reasonable approach to reduce unnecessary risk and make the entire process more efficient and effective for all parties. Transaction timelines have steadily increased in recent years due, in part, to increased amounts of requested evaluation tasks, limited MRO availability, clarity on original equipment manufacturer (OEM) guidance and how that aligns or misaligns with expectations, as well as ongoing supply chain parts challenges. All of these strain and burden the entire process for all parties involved. Too often, large-scale work scopes are initiated not because of a maintenance manual directive or a known aircraft issue but simply because the aircraft is changing ownership. This practice is inefficient, prolongs the transaction process and creates unnecessary burdens.

When an aircraft is sold, it is always essential to review the logbooks, determine whether the aircraft is enrolled in any maintenance programs, identify coverage gaps if any and focus work scope efforts accordingly. When it comes to the engines, many business aircraft today are covered by comprehensive engine and airframe maintenance programs. In such cases, a full engine borescope inspection is generally unnecessary during the transaction process. If the aircraft has 100% coverage and the program transfers to the buyer (as is typical), the maintenance risk for future events or issues lies with the program provider. Additionally, if the engines and airframe are less than 10 years old (for example only) or have recently undergone major engine or airframe inspections (e.g., 92 month, 8C, Hot Section or Overhaul), a full inspection may not necessarily be required or even recommended. It is important to note that most engine programs do not cover “transaction-driven” borescope inspections. Any findings from these inspections can lead to delays and disputes over who is responsible for the resulting maintenance costs, which may be avoidable altogether. Given that, it is ALWAYS recommended that you consult with the engine OEM and engine program provider (if applicable) prior to taking any action on the engines.

The following pages are intended to clarify the different levels of a suggested pre-purchase work scope and offer practical direction on “when to do what.” These best practices will also help those involved define what should drive the inspection scope based on key variables such as age, hours, usage and regional operating condition. Bottom line, these best practices are offered to educate and align buyers, sellers and those involved in the transaction process and are only suggestions and recommendations of best practices assembled by the IADA maintenance committee. Lastly, the aircraft pre-purchase event direction and terms should align with the terms found within the Aircraft Purchase Agreement (APA) and/or Letter of Intent (LOI). The APA and LOI typically dictate the terms in which the Pre-Purchase Agreement will be conducted, so alignment of the work scope to these documents is crucial for a successful inspection and transaction.

DISCLAIMER

The information contained in these aircraft pre-purchase best practices is provided solely to the membership of IADA and NBAA for the purpose of providing considerations for our membership to think through when planning for aircraft pre-purchase evaluations.

These best practices are not intended to be and do not claim to be definitive.

While input has been sought, and included from relevant OEM providers, this document does not replace the OEM provider's guidance regarding pre-purchase evaluations; the OEM provider's guidance remains the definitive standard.

The information provided herein is not professional legal advice, and the information provided herein does not create an advisory or attorney-client relationship between IADA or NBAA and the user of this document.

The information contained herein is provided "as is" and may not always be complete or current.

INTENDED USE

Determine Level of Evaluation for Pre-Purchase Evaluation

The determination as to the level of pre-purchase evaluation (PPE) to be accomplished should always be determined by experienced individuals or companies that have expertise in certain types or models. These best practices will provide areas for consideration to help decide if a hangar survey/visual inspection is substantial enough to accept the aircraft for delivery or whether a detailed PPE should be performed at an MRO facility.

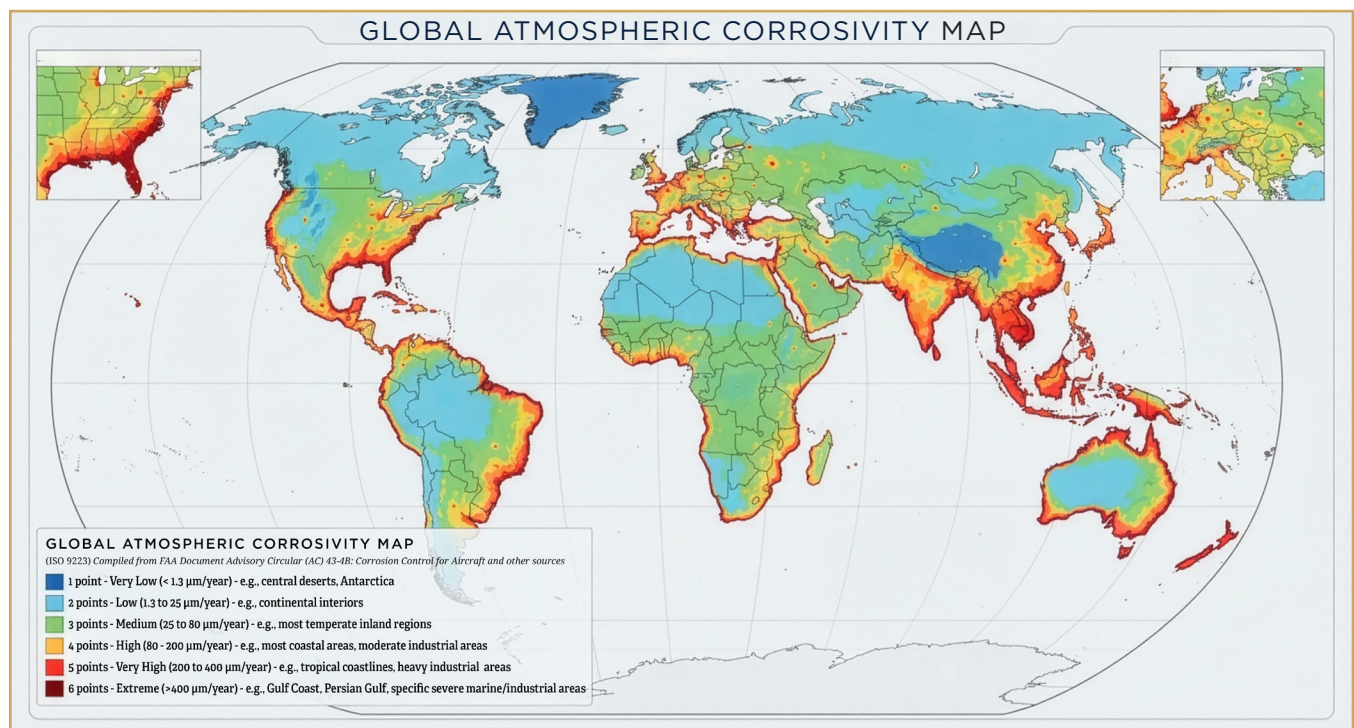
Items considered will encompass multiple factors that all relate to the aircraft's historical and current operational life. The score table developed by the IADA steering group will help guide the decision on the level of PPE required.

Scope of Work for Hangar Survey/Visual (Non-MRO Event)

The scope of work is as follows: (1) perform an on-site visual review of the aircraft's interior and exterior; (2) review the aircraft logbooks, records, and other provided documentation (hereinafter referred to as the Evaluation); (3) conduct an aircraft acceptance flight for onboard system checks; and (4) submit findings either verbal or written that provide a general overview and cursory review of the aircraft's current condition and records, based on the information available at the time of the Evaluation.

This is not intended to assess the aircraft's mechanical condition, nor is any data herein intended to be construed as a comprehensive inspection of the aircraft's mechanical condition.

Environmental tables for scoring: Make note of the aircraft operational location most frequented, then record the number in the aircraft survey chart.



See Appendix C, page 34, for a larger version of this map

IMPORTANT NOTE

The following “Aircraft Survey Points Chart” is a tool to help you consider several important factors about the aircraft, including but not limited to its condition and how/where it has been operated in order to guide you to a suggested type of pre-purchase evaluation. THIS IS ONLY A GUIDELINE and not a firm ruling on what type of event you should pursue. The points system was chosen simply to “weight” various factors to help all parties involved have a clearer view of the next possible and reasonable steps. There are no hard and fast rules here, only suggested guidelines to help bring clarity to the PPE event. You will know more about the aircraft than this guide will provide and should always take your insight into consideration first and use this tool only to help you consider as many important areas as possible. Regardless of the total calculated, you should choose a path forward that ensures that a reasonable and educated PPE event takes place. Again, the score table below is NOT an absolute, and the numbered questions following are assumptions made on an average aircraft operating in moderate conditions. Note, there can be extreme examples where one or two questions under extreme circumstances would dismiss an initial hangar survey and drive a full PPE regardless of low scores in other areas of the table.

AIRCRAFT SURVEY POINTS CHART

	CRITERIA	NOTES	POINTS
1	<p>AGE OF THE AIRCRAFT:</p> <p>0 to 5 years 1 point 6 to 10 years 2 points 10 to 15 years 3 points 15 years or older 4 points</p>	Older airframes have more accumulated cycles/hours, greater wear, and higher exposure to obsolescence and unscheduled maintenance. Age is a primary driver of maintenance cost and operational availability.	
2	<p>WHERE IS THE AIRCRAFT LOCATED?</p> <p>(Reference: Corrosivity Map, Appendix C, page 34)</p>	Aircraft based in industrial, coastal, or high-pollution areas are exposed to corrosive agents (salt air, chemical emissions) that accelerate airframe and component degradation, much like the humidity factor.	
3	<p>HAS THE AIRCRAFT BEEN INACTIVE FOR MORE THAN 6 OR 12 MONTHS?</p> <p>No 0 points 6 Months 2 points 12 Months 4 points</p>	An aircraft idle for an extended period requires more extensive return-to-service inspections and is prone to seal/gasket degradation, corrosion, systems issues from inactivity, and fuel tank contamination damage, ultimately increasing risk of reliability and cost to maintain.	
4	<p>AVERAGE FLEET UTILIZATION COMPARED TO ACTUAL?</p> <p>Fleet normal 0 points Below 40% 1 point Above 40% 2 points</p>	Utilization above or below fleet norms distorts expected component life consumption versus actual. Overutilization accelerates wear while underutilization can mask deferred maintenance and increase corrosion risk.	
5	<p>HAS THE AIRCRAFT BEEN STORED INSIDE OR OUTSIDE?</p> <p>Inside 0 points Outside 4 points</p>	Outdoor storage exposes the aircraft to weather, UV, and temperature changes, accelerating deterioration of paint, seals, and structure compared with a hangared aircraft; storage condition is a direct proxy for physical condition risk.	
6	<p>IS THE AIRCRAFT AIRFRAME ON A PROGRAM?</p> <p>Yes 0 points No 1 point</p>	Enrollment of the airframe on a maintenance program provides predictable, budgeted maintenance costs and transferable benefits to a buyer. An airframe off program carries unknown future cost exposure and is left exposed to deferred maintenance and lower marketability.	

CRITERIA			NOTES	POINTS
7	<p>ARE THE ENGINE(S) ON A PROGRAM?</p> <p>Yes 0 points</p> <p>No 4 points</p>		<p>Engine programs (e.g., power-by-hour) spread overhaul costs across the engine's life cycle and are likely to have all maintenance accomplished because it is paid for by the program. Engines off program expose the owner/buyer to large, unpredictable overhaul expenses and inherent unscheduled cost risk.</p>	
8	<p>IS THE APU ON A PROGRAM?</p> <p>Not Applicable 0 points</p> <p>Yes 0 points</p> <p>No 2 points</p>		<p>As with engines, auxiliary power unit (APU) program enrollment manages overhaul cost risk and supports value retention. An APU off program carries similar cost and inherent unscheduled cost risk, though typically smaller in magnitude.</p>	
9	<p>IS THE AIRCRAFT OPERATED PART 135 COMMERCIAL CHARTER?</p> <p>Yes 2 points</p> <p>No 0 points</p>		<p>Charter operation typically involves higher utilization, more frequent cycles, more wear on interior and exterior, and a broader range of operating conditions/multiple pilots than private use, potentially increasing wear and risk relative to a non-charter operation.</p>	
10	<p>IS THE AIRCRAFT ON A MAINTENANCE TRACKING PROGRAM?</p> <p>Yes 0 points</p> <p>No 1 points</p>		<p>A recognized maintenance tracking program ensures complete, accurate, and transferable maintenance records. An aircraft without a tracking program for the records carries a higher risk and increases valuation uncertainty.</p>	
11	<p>HAS A RECENT MAJOR INSPECTION BEEN COMPLETED?</p> <p><i>Example: 20yr/96mo/192mo/2C/Etc. within previous 12 months</i></p> <p>Yes 0 points</p> <p>No 3 points</p>		<p>Whether a major scheduled inspection (e.g., heavy/2C check) has recently been completed indicates how much near-term, high-cost maintenance exposure remains before the next inspection is due. This is when discrepancies are discovered and corrected. Typically, it is preferred to buy an aircraft "post" major inspection because any discovered faults were corrected.</p>	
TOTAL				

SCORING TABLE	
Total points at or below 10	HANGAR SURVEY
Total points between 10 and 15	POTENTIAL HANGAR SURVEY (ELEVATED RISK)
Total points at 16 or above	MRO PPE SUGGESTED
Total points at 20 or above	MRO EXTENSIVE PPE SPECIFIC TASKS MODEL FOCUS

AIRCRAFT HANGAR SURVEY SETUP

The Hangar Survey is segregated by two approaches: Static Tasks and Operational Tasks.

Static Tasks — Checks or tasks to be performed on systems and equipment that can be accomplished in a hangar using only electric/hydraulic power. The OEM recommended power cart amperage and frequency phase should be used. All of the aircraft lighting and most of the cabin equipment can be checked for function and operation using electrical power. Systems requiring hydraulic pressure, bleed air and pressurization would require special ground support equipment but can be performed during the operational checks out of the hangar or in flight.

Operational Tasks — Checks or tasks to be performed utilizing the aircraft electric, hydraulic and bleed air systems either on the ground or in flight. Typically, if an aircraft is equipped with an APU, it may not be necessary to run the aircraft engines to perform airframe checks. If the aircraft does not have an APU installed, running the aircraft engines outside will provide the normal system pressures and will function as designed for verification of proper operation and function. Engine operation may not be needed to perform operational system checks.

Time Required — Hangar surveys can vary in the amount of time that is required to perform the airframe operational checks, logbook research, engine ground run and flight tests. One should always consider there may be more than one vendor to support the process. Typically engine checks such as borescopes or oil samples would be performed by a qualified individual or company with the proper equipment. The setup and coordination on availability of vendors will need to be solidified before starting the process. Depending on the age of the aircraft, operational time and airport access restrictions, a basic hangar survey will take two to three days with proper coordination to complete the physical tasks. Generally, if a report is to be issued as to the condition of the aircraft, expect two to three more days for the final product.

Note: *If there are discrepancies noted or items discovered that need resolution, that is not considered part of the hangar survey and may extend the out-of-service time of the aircraft.*

Tasks That Require Specialized Qualifications

Engine Borescope — Borescope should only be performed by individuals or companies that are qualified on that model engine or APU, and that have the proper equipment and manuals.

Aircraft Operational Ground Runs — These should be performed by an individual or company that is qualified, such as a pilot with a current type rating for the model or qualified mechanic. It is recommended that the aircraft owner authorize in writing who will be allowed to operate the aircraft.

ENGINE SURVEY LIST

The survey of the engine requires both static and operational tasks. The static tasks are a visual observation by a qualified person using flashlight, inspection mirror and minor utilities such as ladders and protective equipment. Specialized equipment such as a borescope and hand tools will be required to perform certain tasks and must be accomplished by a qualified person who can legally sign off on maintenance actions. Operational tasks will be performed outside by qualified individuals. It is recommended that at least two individuals be present for safety during any of the tasks. All hangar safety rules and safety practices around aircraft should be followed to ensure protection to the individual and the aircraft.

PPE Engine On Program

Engine program providers may decline discrepancies found during an out-of-sequence borescope inspection, and this can make findings from a pre-buy a non-covered event, which would increase financial risk to the seller and increase the cost of the transaction. Buyers should take their confidence from the program coverage, and focus on program exclusions such as foreign object damage/debris (FOD) and corrosion. In any situation, contact your program provider for guidance prior to any engine inspections. It is best practice to coordinate with the engine program provider before APA negotiations begin. Generally, most engine program providers will allow performance runs, spectrometric oil analysis program (SOAP) samples, FOD inspections and logbook review. It is suggested that these items be surveyed at the prebuy. If available, review engine health monitoring data for recent flights and anomalies. In all cases, please refer to the engine program provider for current guidance.

A thorough review of the Life Limited Parts (LLP), Life Cycle Fatigue (LCF) parts and Life Limited Components (LLC), to verify life remaining, is needed. Failure to review these components can result in substantial financial exposure and downtime.

PPE Engine Not On Program

It is suggested that a full core borescope, 5-point performance runs, SOAP samples, Accessory Gearbox pressure checks (if applicable) and logbook research be conducted to ensure full transparency of the engine condition. IADA recommends performing tasks on the engine that align with tasks necessary to get the engine on a given engine program.

A thorough review of the LLP, LCF parts and LLC to verify life remaining, is needed. Failure to review these components can result in substantial financial exposure & downtime.

Foreign Object Damage/Debris (FOD) Inspection

The FOD inspection is to ensure that any foreign object damage is captured during the prebuy inspection. This inspection is typically limited to the fan as well as first and second LPC stages. Logbook entry is made. Should FOD be detected, then the active aircraft insurance policy would be responsible for the claim. Post-transaction reports of FOD events will raise questions on when the incident occurred. Performing this task eliminates that doubt.

ENGINE SURVEY		
RECORD ENGINE HOURS AND CYCLES		
ENGINE PRESERVATION DOCUMENTS <i>(If Inactivity Is Noted)</i>		
TASK	ENGINE PROGRAM YES	ENGINE PROGRAM NO
ENGINE RECORDS REVIEW		
SERVICE BULLETIN STATUS		
PERFORM A 5-POINT RUN (UNBLOCKED)* <i>N1, N2, ITT Margin</i>		
VERIFY THAT ENGINE PARAMETERS AND OPERATIONAL PERFORMANCE MEET ACCEPTABLE STANDARDS* • <i>N1, N2 power of the day</i> • <i>Vibration level</i> • <i>Fuel Flow</i> <i>Oil/ Fuel/Pneumatic — Press and Temperature</i>		
EEC FAULT CODES/CP INDICATION CASS		
ACCESSORY GEAR BOX PRESSURE CHECK <i>If Applicable</i>		
A DISCRETIONARY FOD VISUAL INSPECTION VISUAL FIRST STAGE FAN 1ST STAGE INLET OF LP COMPRESSOR IF ALLOWED BY ENGINE PROGRAM PROVIDER ** <i>Note B</i>		
REVIEW OF THE LAST SCHEDULED BORESCOPE REPORT <i>(Review ER, TV, Extensions)</i>		
VISUAL EXTERIOR (OPEN COWL) <i>Oil Leaks, Fuel Leaks, Condition Of Lines/Harnesses</i>		
CONFIRM DATA PLATES <i>Engine and accessory components, record serial numbers and note condition</i>		

TASK	ENGINE PROGRAM YES	ENGINE PROGRAM NO
CHIP DETECTOR INSPECTION		
VISUAL EXTERNAL/ACCESSIBLE ENGINE CASE SURFACES FOR CORROSION		
INLET DETAILED LIP AND FLANGE VISUAL CORROSION****		
THRUST REVERSER — DETAILED VISUAL FOR CORROSION*****		
RECORD ALL SYSTEM PARAMETERS		
RETRIEVE — PAST TREND HISTORY (If performed)		
RETRIEVE OIL SAMPLE HISTORY AND PERFORM SOAP (If applicable, if recommended by OEM)		
OIL FILTER INSPECTION***		
COMPRESSOR CORE BORESCOPE INSPECTION (See Note B)		
TURBINE SECTION BORESCOPE (See Note A)		

Special Notes

- * Check with OEM for proper procedures and measurements
- ** Visual survey to be performed with light and mirror — no borescope
- *** Perform task if recognized by OEM to be relevant information
- **** Non-Covered Engines, research to understand risks when performing
- ***** If inlet and thrust reverser are covered under a program
CHECK WITH PROGRAM PROVIDER BEFORE PERFORMING TO VERIFY COVERAGE

Note A — If task is performed without prior clear indication of engine failure or performance issues, it is typically not covered by a maintenance program and may lead to costly repairs and delays for the seller.

Note B — Should an indication on the fan or inlet present evidence of FOD, consult with engine program representative and aircraft insurance.

Note C — IF ENROLLED ON AN ENGINE PROGRAM, CHECK WITH PROGRAM PROVIDER BEFORE PERFORMING ANY BORESCOPE ACTIVITY. FAILURE TO OBTAIN AUTHORIZATION MAY RESULT IN FINDINGS NOT BEING COVERED BY THE ENGINE PROGRAM.

AUXILIARY POWER UNIT SURVEY LIST

AUXILIARY POWER UNIT (APU) SURVEY		
TASK	APU PROGRAM YES	APU PROGRAM NO
RECORD APU TIMES AND CYCLES		
LOGBOOK REVIEW VERIFICATION OF LLP CARDS		
VISUAL SURVEY APU ENCLOSURE		
VISUAL CHIP DETECTOR		
OPERATIONAL CHECK <ul style="list-style-type: none"> • Start time and (exhaust gas temperature (EGT) recorded • Bleed air pressure recorded • Perform engine start and note APU EGT and bleed air pressure • Operate for 20 minutes under load (environmental systems) • Note any cabin oil smell or visual smoke PERFORM NORMAL SHUTDOWN – OBSERVE AND RECORD <ul style="list-style-type: none"> • Spool down time 		
COMPRESSOR INLET BORESCOPE FOD		
OIL SAMPLE <i>(If applicable)</i>		
TURBINE SECTION BORESCOPE		

APU Overview

APU Without Program: It is recommended that a full core borescope, APU condition run, SOAP samples, Accessory Gearbox pressure checks and logbook research be conducted to ensure full transparency of the engine condition.

APU Enrolled On Program: Contact engine program provider to verify any prebuy exclusion.

Honeywell MSP will allow a FOD inspection of the APU inlet if access to the inlet requires removal or disassembly. If a borescope is required to perform FOD inspection of the APU inlet, the borescope task should only be performed with MSP approval.

NOTE: *Oil residue or wetting from a leaking carbon seal may not be grounds for removal of the APU. Consult with OEM technical support to make the determination if the APU needs to come off wing.*

FOD inspection is to ensure that any foreign object damage is captured during the prebuy inspection. This inspection is typically limited to the fan as well as first and second. Logbook entry is made. Should FOD be detected, then the active aircraft insurance policy would be responsible for the claim. Post-transaction reports of FOD events will raise questions on when the incident occurred. Performing this task eliminates that doubt.

IF ENROLLED ON AN APU PROGRAM, CHECK WITH PROGRAM PROVIDER BEFORE PERFORMING ANY BORESCOPE ACTIVITY. FAILURE TO OBTAIN AUTHORIZATION MAY RESULT IN FINDINGS NOT BEING COVERED BY THE ENGINE PROGRAM.

AIRFRAME SURVEY LIST: EXTERIOR

The airframe survey of the exterior encompasses a visual observation by a qualified person using flashlight, inspection mirror and minor utilities such as ladders and protective equipment. It is strongly suggested this be performed with the aircraft in a hangar, access to ground power that will be connected to the aircraft and proper lighting. All hangar safety rules and safety practices around aircraft must be followed to ensure protection to the individual and the aircraft. **Note:** These are sample areas and may not apply to all aircraft.

AIRFRAME EXTERIOR SURVEY		
MSG-3 ZONE TASK	VISUAL SURVEY	
ZONE 100 NOSE SECTION	Nose radome Nose gear bay area Nose gear and tires	Windshields Side DV windows Pitot tubes/AOA
ZONE 200 RIGHT FUSELAGE	Fuselage skin Passenger windows Antennas	Access doors
ZONE 300 RIGHT WING	Leading edge Lower skin Landing gear bay Landing gear wheels and brakes Upper wing surface	Winglet Lights Flaps/spoilers/slots Ailerons
ZONE 400 EMPENNAGE	APU inlet and exhaust area Access doors Equipment bay Lights	Skin surfaces Horizontal stab Rudder
ZONE 500 LEFT WING	Leading edge Lower skin Landing gear bay Landing gear wheels and brakes Upper wing surface	Winglet Lights Flaps/spoilers/slots Ailerons
ZONE 600 LEFT FUSELAGE	Fuselage skin Passenger windows Antennas	Access doors
ZONE 700 POWERPLANT PYLON	Inlet/lip and skin Acoustic and ice panels inner Cowlings	Thrust reversers Pylon upper/lower

EXTERIOR/PAINT	
EXTERIOR LAST PAINT (AGE):	Review records for last paint
PAINT COLORS:	Record
PAINT CONDITION	Perform visual walk-around

AIRFRAME SURVEY LIST: INTERIOR

INTERIOR SURVEY — GENERAL ATA25			
ITEM	VISUAL CONDITION	MECHANICAL FUNCTION	OPERATION CHECK
CLUB SEATS			
TABLES			
CREDENZA			
DIVAN			
BED CONVERSION			
CREW REST			
FWD LAV			
AFT LAV			
BAGGAGE AREA			
CABINETS STORAGE			
GALLEY			
GALLEY LIGHTS			
CABIN LIGHTING			
CABIN CONTROL PANEL			
SEAT LIGHTS			
LAV LIGHTS			
BAGGAGE LIGHTS			
CABIN MANAGEMENT SYSTEM			

GALLEY & CABIN EQUIPMENT	
EQUIPMENT/SYSTEM	PASS/INOP/OBSOLETE/NOT APPLICABLE
COFFEE BREWER	
ESPRESSO MAKER	
AIR CHILLER	
MICROWAVE OVEN	
HIGH-TEMPERATURE OVEN	
DUAL COMBO CD/DVD/MP3 CREDENZA UNIT	
MONITOR (LH FORWARD, RH AFT)	
MONITOR (CREDENZA)	
CABIN FAX/PRINTER/SCANNER MACHINE	

AIRCRAFT COCKPIT AND CABIN CONNECTIVITY

PHONE & INTERNET OPERATIONAL CHECKS (TEST FLIGHT)		
EQUIPMENT/SYSTEM	MODEL	TEST LINK SPEED UP/DOWN
LEGACY PHONE SYSTEM (IRIDIUM)		
LEGACY AIR TO GROUND (ATG)		
SATELLITE COMMUNICATION (SATCOM)		

NOTE: Verify equipment installed against aircraft records and check for obsolescence and advise accordingly.

COCKPIT AVIONICS	
AVIONICS SUITE	
NOMENCLATURE	OPERATIONAL CHECK
AIR DATA COMPUTER (ADC)	
COCKPIT VOICE RECORDER (CVR)	
DISPLAY UNITS (DU)	
EMERGENCY LOCATOR TRANSMITTER (ELT)	
ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS)	
FLIGHT DATA RECORDER (FDR)	
GLOBAL POSITIONING SYSTEM (GPS)	
HIGH FREQUENCY (HF) COMMUNICATIONS (COMM)	
INTEGRATED STANDBY FLIGHT DISPLAY (ISFD)	
INTERNAL REFERENCE UNIT (IRU)	
NAVIGATION (NAV) COMM UNIT	
RADIO ALTIMETER (ALT)	
RADIO INTERFACE UNIT (RIU)	
TRAFFIC COLLISION AVOIDANCE SYSTEM (TCAS) II	
VERY HIGH FREQUENCY (VHF) COMMUNICATION (COMM) VOICE/DATA RADIO MODULE	
WEATHER RADAR	

RECORDS REVIEW

Aircraft Records

The physical logs, historical records, work order packages, and related documentation are important to fully understand the aircraft maintenance history and condition. Records may be kept in a variety of containers and stored in an office or secure cabinet.

The process for records and logbook review must be approached methodically and organized to ensure there are no gaps in time or missing data that would affect the airworthiness and value of the aircraft. A proper records review will take anywhere from several hours to days depending on the aircraft age, total time and how the aircraft was operated, and overall condition of the available records, including legibility and language issues.

Best practice would be to utilize the computer maintenance tracking program (if there is one) and verify maintenance entries recorded in the records to ensure accuracy and consistency.

Proper working space is a must along with a reasonably sized table in order to spread out documents to allow research of airworthiness tags, work packages, and specific documentation.

A list of proper documents to review are as follows (but not limited to):

- a) Current Weight and Balance
- b) Equipment List (required for import and export) must specify accuracy
- c) Records for Life Limited Parts replacements
- d) AD Compliance — Aircraft/Engine/APU
- e) Major Repairs/Alterations Forms 337, ICAs, AFM Supplements
- f) Airworthiness Certificate
- g) Registration
- h) Current total time and cycles of aircraft, engines, APU hours
- i) Aircraft Bulletins Compliance — Mandatory Service Bulletins/Customer Bulletins/Alert Bulletins/Mandatory Service Letter (CIL) as applicable per model
- j) Required Manuals

Test Flight

An evaluation or test flight is typically required following return to service from the pre-purchase evaluation. This flight is utilized to identify discrepancies of the aircraft not observed while on the ground or in maintenance. Below are the recommended test flight items for operational check:

Review the OEM test flight criteria and pilot credentials and verify with insurance that test pilots are approved.

APPENDIX A: EXAMPLES OF SUGGESTED PHOTOS

When surveying an aircraft, photographs should be taken to record the condition of key areas to give the prospective buyer(s) and seller(s) a closer look at the asset. The following are suggested photos of a sample aircraft showing suggested key areas to record. Your aircraft may differ, and your aircraft may present other issues needing to be photographed and recorded. Photographing an aircraft is only one method of information gathering when completing an aircraft specification package; photographs by themselves do not represent a full view and full understanding of an aircraft's condition.

Aircraft Exterior Photos

1: Nose Cone/Radome/Nose Gear



Aircraft Exterior Photos

2: RH Side



3: RH Wing LE



4: RH Upper Wing Trailing Edge to Fuselage



5: RH MLG Assembly and Tires



6: RH MLG Tires



7: RH Rear, Engine



Aircraft Exterior Photos

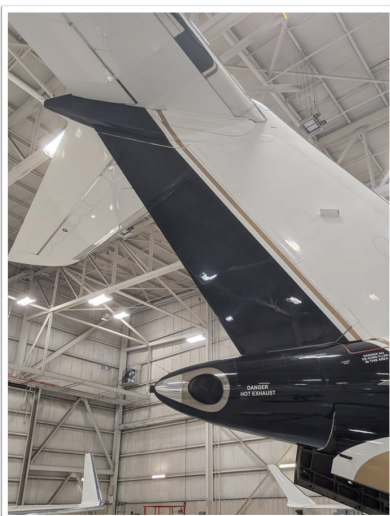
8: RH Engine Intake



9: RH Engine Exhaust



10: RH Tail



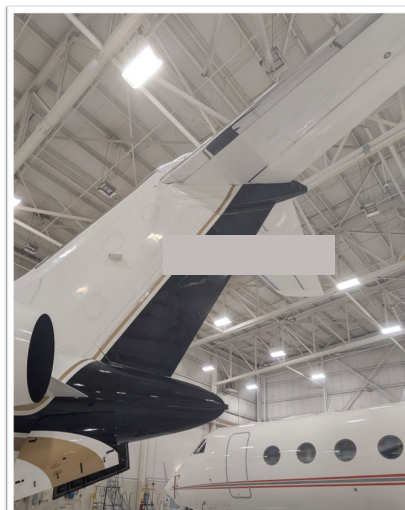
11: Empennage



12: Empennage



13: LH Tail



Aircraft Exterior Photos

14: LH Engine Exhaust



15: LH Engine Intake



16: LH Rear, Engine



17: Fuselage, Baggage Access



18: LH MLG Assembly and Tires



19: LH MLG Tires



Aircraft Exterior Photos

20: LH Wing LE



21: LH Side



22: LH Rear, Engine



23: Fuselage, Baggage Access



24: LH MLG Assembly and Tires



25: LH MLG Tires



Aircraft Interior Photos

1: LH Entry Bulkhead



2: RH Entry Bulkhead



3: Cockpit



4: Galley



5: Galley Monitor

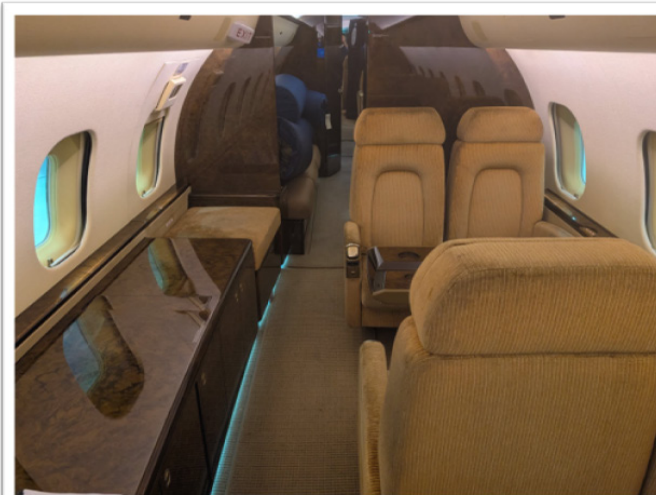


6: Forward Cabin Looking Aft



Aircraft Interior Photos

7: Mid-Cabin Looking Aft



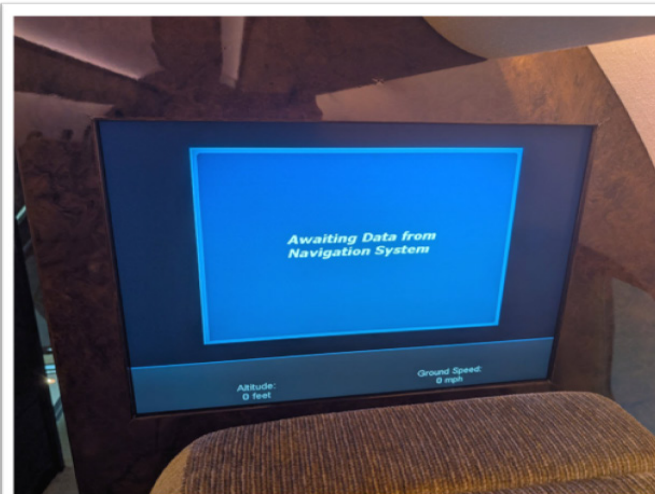
8: Aft Cabin Looking Forward



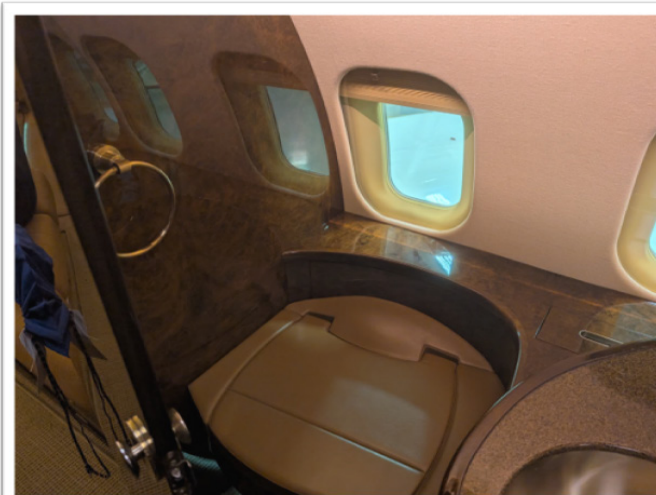
9: Cabin Drink Rail



10: Cabin Monitor



11: Aft Lavatory



APPENDIX B: TERMS & DEFINITIONS

Aircraft Acceptance Flight — A test flight conducted as part of the pre-purchase evaluation process to evaluate aircraft performance and verify the operational status of onboard systems. Sometimes called an “observation flight,” it is performed after the physical ground inspection is complete and used to confirm that all flight systems, avionics, communications, and cabin equipment function within acceptable parameters. The acceptance flight is the final airborne check before the buyer confirms technical acceptance. (Sources: Flying Magazine; West Star Aviation)

Aircraft Purchase Agreement (APA) — The definitive, legally binding contract between buyer and seller that governs the purchase and sale of an aircraft. Typically executed after a letter of intent (LOI) and the buyer’s deposit into escrow, the APA memorializes the transaction terms — including the aircraft description (make, model, airframe, engine, and APU serial numbers), purchase price, deposit and escrow arrangements, allocation of taxes, and the delivery condition the seller must meet at closing. For the pre-purchase process specifically, the APA defines the scope of the pre-purchase evaluation; sets the time frames for inspection, discrepancy remediation, and closing; establishes what constitutes a discrepancy and which party bears the cost of correcting it; and specifies the buyer’s rights to accept, reject, or conditionally accept the aircraft. Once mutually executed, the APA binds both parties and governs the remainder of the transaction through title transfer at closing. (Sources: Bizjet Law; Duncan Aviation; AvBuyer; Assets America)

Aircraft Transaction — The complete legal and commercial process by which ownership of an aircraft is transferred from seller to buyer. The process typically includes a letter of intent (LOI), aircraft purchase agreement (APA), deposit into escrow, pre-purchase evaluation, remediation of discrepancies, and closing with title transfer. (Source: Bizjet Law)

Airworthiness — The condition of an aircraft that meets the two-prong FAA standard: (1) it conforms to its type certificate (as modified by applicable Supplemental Type Certificates), and (2) it is in a condition for safe operation. Per 14 CFR § 3.5(a), “airworthy means the aircraft conforms to its type design and is in a condition for safe operation.” (Source: FAA/AOPA)

Airworthiness Directives — Airworthiness Directives (ADs) are legally enforceable regulations issued by the FAA in accordance with 14 CFR Part 39 to correct an unsafe condition in a product. Part 39 defines a product as an aircraft, engine, propeller, or appliance. (Source: FAA.gov Regulations/Policies)

Average Fleet Utilization — The mean number of flight hours or cycles accrued per year across a specific aircraft model’s active fleet. Used as a benchmark to assess whether a given aircraft’s usage is above or below the norm for its type. Aircraft operating significantly above average utilization may exhibit accelerated wear and warrant a higher level of pre-purchase scrutiny. (Source: Aviation Week Tracked Aircraft Utilization data)

Auxiliary Power Unit (APU) — A small, self-contained gas turbine engine installed on the aircraft (typically in the tail cone or an aft equipment bay) that provides electrical power and pneumatic (bleed air) output independent of the main engines. The APU is used to power onboard systems, supply air for environmental control and cabin pressurization, and provide bleed air for main-engine starting, both on the ground and, on many aircraft, in flight. During a pre-purchase evaluation the APU is surveyed for hours and cycles, life-limited component status, and operational performance — including start time, EGT, and bleed air pressure under environmental-systems load. (Sources: SKYbrary; Honeywell; NBAA)

Bleed Air Pressure — The pneumatic pressure of compressed air tapped from the compressor stages of a turbine engine or APU and routed to aircraft systems for cabin pressurization, environmental control, engine starting, and anti-icing. During an APU operational check, bleed air pressure is recorded to confirm the APU is delivering sufficient pneumatic output for its intended ground support functions. (Source: Boeing 737 NG Pneumatics documentation)

Business Aircraft — Any general aviation aircraft — fixed-wing or rotary wing, piston or turbine — used for business purposes. Per NBAA, the fleet ranges from single-pilot propeller aircraft to large-cabin intercontinental jets. The vast majority of business aircraft seat six passengers and fly average trip lengths under 1,000 nautical miles. (Source: NBAA Business Aircraft page)

Buyer — The individual, company, or entity seeking to acquire ownership of an aircraft through a purchase transaction. In a pre-purchase evaluation context, the buyer typically commissions and pays for the evaluation and is responsible for negotiating the scope of discrepancy remediation with the seller prior to technical acceptance. (Source: Bizjet Law; West Star Aviation)

Chip Detector — A magnetic sensing device installed in an aircraft engine oil system, gearbox, or APU lubrication circuit that attracts and captures ferrous metal particles circulating in the oil. The presence of metal particles may indicate internal component wear or impending failure. When sufficient particles bridge the circuit gap, an electronic signal or cockpit caution indication is generated, alerting maintenance personnel to inspect the lubrication system. (Source: SKYbrary/Magnetic Chip Detector (MCD))

Commercial Charter — The operation of an aircraft for compensation or hire under 14 CFR Part 135, in which the aircraft and crew are provided to customers on an on-demand basis. Aircraft operated in commercial charter service typically accumulate higher hours and cycles than comparable privately operated aircraft, which is reflected in the pre-purchase scoring model. (Source: FAA 14 CFR Part 135)

Compressor Core Borescope Inspection — A non-destructive visual inspection of the internal compressor section of a turbine engine, performed using a borescope — a flexible or rigid optical instrument with an integrated camera and light source. The inspection allows technicians to examine compressor blades, vanes, and case surfaces for FOD, corrosion, erosion, cracking, and other anomalies without engine disassembly. (Sources: Global MX; USA Borescopes; Holstein Aviation)

EEC (Engine Electronic Controller) — A digital computer and its related accessories that monitor and control engine performance parameters, including fuel flow, thrust management, and engine protection functions. The EEC is the core component of a FADEC (Full Authority Digital Engine Control) system, processing multiple flight-condition inputs up to 70 times per second to optimize engine efficiency. When standing alone (i.e., not full authority), the EEC allows manual pilot intervention; in full FADEC systems, it has sole authority over engine operating parameters. (Source: SKYbrary EEC; FAA FADEC)

EGT (Exhaust Gas Temperature) — The temperature of the exhaust gases exiting a turbine engine after the combustion process, sometimes referred to as Turbine Outlet Temperature (TOT). EGT is a key engine health monitoring parameter recorded during engine runs and acceptance flights. Abnormal EGT readings can indicate fuel system issues, cooling malfunctions, or turbine section degradation. Monitoring EGT margin (the difference between observed EGT and the engine's redline limit) is standard practice during pre-purchase engine evaluation. (Sources: SKYbrary EGT; FAA AMT Handbook Powerplant)

Engine and Airframe Maintenance — Per the FAA, maintenance means the inspection, overhaul, repair, upkeep, and preservation of an aircraft and its engines, including the replacement of parts. For business aircraft, this encompasses all scheduled and unscheduled work performed on both the airframe (structure, systems, and avionics) and propulsion systems (engines and APU) in accordance with the aircraft manufacturer's maintenance manual and applicable regulatory requirements. (Sources: FAA/Boeing Global Services; NBAA Maintenance)

Engine and Airframe Programs — Hourly cost maintenance programs (HCM) offered by OEM manufacturers (such as Pratt & Whitney ESP, Rolls-Royce CorporateCare, and Honeywell MSP) or independent providers (such as JSSI) that cover scheduled and unscheduled maintenance events for an aircraft's engines, airframe, and APU. Operators pay a fixed fee per flight hour into the program, which accrues reserves to cover future inspection, repair, and component replacement costs. Enrollment in recognized engine and airframe programs stabilizes ownership costs, protects against unbudgeted repair expenses, and is widely regarded by lenders and appraisers as enhancing residual value at resale. (Sources: JSSI; AvBuyer; Pratt & Whitney)

Engine Borescope — A non-destructive inspection (NDT) method in which a flexible optical instrument equipped with a miniature camera and light source is inserted through access ports in a turbine engine to visually examine internal components — including compressor blades, turbine blades, combustion chambers, and stator vanes — without disassembly. Borescope inspections detect cracks, corrosion, erosion, carbon buildup, and foreign object damage (FOD). They are routinely performed as part of pre-purchase evaluations and at manufacturer-specified intervals or following unusual events such as bird strikes. (Sources: Global MX; Holstein Aviation; Covington Aircraft; USA Borescopes)

Engine Original Equipment Manufacturer (OEM) — The company that designed and manufactured the aircraft's engines. For business jets, common engine OEMs include Pratt & Whitney Canada (PT6, PW300, PW600 series), Rolls-Royce (BR700 series), Honeywell (TFE731, HTF7000 series), and GE Aviation (CF34 series). The engine OEM establishes mandatory maintenance schedules, time between overhaul (TBO) limits, life-limited component (LLC) requirements, and authorized service center networks. OEM engine maintenance programs — such as P&W Canada's ESP, Rolls-Royce CorporateCare, and Honeywell's MSP — provide enrolled operators with cost-per-hour coverage for scheduled and unscheduled engine events. (Sources: JSSI; SKYbrary; NAFA)

Engine Preservation — A set of procedures performed on aircraft engines that will be inactive for an extended period (typically 30 days or more) to prevent corrosion and deterioration of internal components. Preservation typically involves treating the fuel system with preservation fluid, circulating corrosion-inhibiting oil through the lubrication system, sealing air intakes and exhaust ports, inserting desiccant bags to absorb moisture, and installing dehydrator plugs in place of spark plugs. Engine manufacturers (including Lycoming, Continental, Pratt & Whitney Canada, and Honeywell) publish specific preservation procedures in their maintenance manuals that are FAA-mandated and legally required to be followed. Buyers reviewing an aircraft with storage history should verify that manufacturer-approved preservation procedures were documented and followed, particularly for aircraft based in humid or coastal environments. (Sources: Duncan Aviation; Lycoming Service Letter L180B; Air Power Inc.)

Engine Preservation Documents — Written records, logbook entries, and maintenance sign-offs documenting that proper engine preservation procedures were performed in accordance with the manufacturer's maintenance manual during any period when the aircraft was inactive or in storage. These documents typically identify the preservation method used, the specific materials applied (such as MIL-C-6529 preservative compounds), the date preservation was performed, and the authorized mechanic or technician who completed and signed off on the work. Buyers and their technical representatives review engine preservation documents during the pre-purchase evaluation to assess whether engines have been properly protected from corrosion during idle periods, as unpreserved storage can significantly accelerate internal wear and may require costly remediation. (Sources: Duncan Aviation; Flying411.com; VREF/Piston Power)

Evaluation — In the context of a business aircraft pre-purchase evaluation, a comprehensive assessment of the aircraft's physical condition, maintenance history, records integrity, and operational status conducted on behalf of a prospective buyer. An evaluation typically encompasses both a ground inspection (structural, systems, avionics, and cosmetic review) and a records inspection (logbooks, AD compliance, service bulletins, damage history, and maintenance program enrollment). The evaluation may also include an acceptance flight to verify in-flight performance. The results are compiled in a written inspection report that identifies discrepancies, airworthy items, and items requiring remediation, and forms the basis for the buyer's technical acceptance decision. (Sources: West Star Aviation; Welsch Aviation; TAG Aviation)

FADEC (Full Authority Digital Engine Control) — FADEC is a system consisting of a digital computer, called an electronic engine controller (EEC) or engine control unit (ECU), and its related accessories that control all aspects of aircraft engine performance. (Source: SKYbrary)

FOD (Foreign Object Debris/Damage) — The acronym FOD refers to two related concepts in aviation: (1) foreign object debris, defined by the FAA as any object located in an inappropriate location in the airport or aircraft environment with the capacity to injure personnel or damage aircraft (FAA Advisory Circular 150/5210-24); and (2) foreign object damage, meaning the physical harm caused to an aircraft or engine by such objects. In the context of pre-purchase engine inspections, FOD typically refers to engine damage caused by the ingestion of debris through the intake — such as stones, runway material, tools, or bird strikes — which can cause visible nicks, cracks, or erosion on compressor and turbine blades. Borescope inspections of fan, compressor, and turbine sections are a primary means of assessing FOD during a pre-purchase evaluation. (Sources: FAA AC 150/5210-24; SKYbrary; West Star Aviation)

Hangar Survey — A detailed visual inspection of the aircraft conducted in a hangar or controlled indoor environment as part of the pre-purchase evaluation process. Unlike a ramp or apron walk-around, the hangar survey provides adequate lighting and access to inspect the full exterior of the aircraft — including the fuselage skin, control surfaces, landing gear, engine nacelles, inlets, and cowlings — for corrosion, delamination, repair patches, paint anomalies, and structural irregularities. The hangar survey is typically one of the first steps in a physical pre-purchase evaluation and helps identify items requiring further investigation through borescope, non-destructive testing (NDT), or records research. (Sources: West Star Aviation; TAG Aviation; code7700.com)

Historical and Current Operational — A review of the aircraft's complete operational history and current operational status, including the environments and conditions in which the aircraft has been operated throughout its service life. This review covers prior geographic regions of operation (including whether the aircraft has been operated in high-humidity, coastal, or corrosive environments), previous owners and operators, mission profiles (short-haul, long-haul, high-cycle operations), storage history, and any periods of irregular or infrequent use. The current operational status includes how the aircraft is presently configured, which maintenance programs it is enrolled in, and its most recent inspection and return-to-service records. Together, historical and current operational information helps buyers and their technical advisors assess the likely maintenance condition of the airframe and engines and identify any elevated risk factors that warrant further investigation. (Sources: West Star Aviation; Welsch Aviation; TAG Aviation)

Hot Section — The portion of a gas turbine engine that operates at extremely high temperatures, encompassing the combustion chamber (combustion liner), high-pressure turbine nozzle guide vanes, high-pressure turbine blades and disks, and in some engines the first-stage low-pressure turbine components. The hot section is subject to the most intense heat and mechanical stress of any part of the engine and is therefore the primary focus of a Hot Section Inspection (HSI), which is a major engine maintenance event specified by the OEM typically at the midpoint of an engine's time between overhaul (TBO). On most business jet engines, an HSI is required between approximately 1,800 and 5,000 flight hours depending on engine type and model. Cost of an HSI can range from \$100,000 to over \$500,000 depending on findings. In a pre-purchase context, remaining time until the next HSI and the status of any existing engine coverage program are key valuation factors. (Sources: GlobeAir; NAFA; Elliott Aviation; Pratt & Whitney)

Humidity Zone — A geographic classification used in engine preservation and corrosion risk assessment to describe the relative moisture level of the environment in which an aircraft is based or operated. Aircraft based in high-humidity zones — such as coastal areas, tropical regions, or locations near large bodies of water — are subject to accelerated corrosion risk, particularly in engine cylinders, oil systems, and airframe structural components. Engine manufacturers such as Lycoming and Continental specifically call out that aircraft operated near oceans, lakes, rivers, and in humid regions have a heightened need for engine preservation procedures compared to aircraft based in arid, low-humidity environments. During a pre-purchase evaluation, the buyer's technical team considers the aircraft's historical humidity zone when evaluating the likelihood of corrosion-related discrepancies and assessing the adequacy of past preservation documentation. (Sources: Lycoming Service Letter L180B; Duncan Aviation; AircraftSystemsTech.com)

IADA (International Aircraft Dealers Association) — A professional trade association founded in 1991 (originally as the National Aircraft Resale Association) that serves as the leading accreditation and ethics-based credentialing body for business aircraft dealers and brokers worldwide. IADA Accredited Dealers are required to meet rigorous standards of professional competence and adhere to a strict Code of Ethics, and they must undergo annual re-accreditation. According to IADA, its accredited members handle approximately 40%–46% of all pre-owned business aircraft sales by dollar volume globally, despite representing only the top 7%–12% of the world's aircraft dealers. IADA also offers certification for individual aircraft brokers and a verified Products & Services membership tier for companies supporting aircraft transactions. Working with an IADA Accredited Dealer or Broker provides buyers and sellers with confidence that the transaction professional is subject to independent ethical oversight and industry best-practice standards. (Sources: IADA.aero; Business Jet Traveler; Duncan Aviation; NBAA Business Aviation Insider)

Inspection Scope — The defined set of tasks, checks, and tests to be performed during a pre-purchase evaluation, agreed upon in advance by the buyer, seller, and the maintenance facility conducting the inspection. The inspection scope typically specifies which aircraft systems will be inspected, whether a borescope of the engines and APU will be performed, the level of records review to be conducted, whether an acceptance flight is included, and which logbooks and documents must be presented. The scope is often set out in the Aircraft Purchase Agreement and may be adapted based on the aircraft type, age, total hours and cycles, maintenance program enrollment status, and proximity to scheduled major inspections. A clearly defined and mutually agreed-upon inspection scope helps avoid disputes about what is and is not included in the pre-purchase process and what findings the seller is obligated to remediate. (Sources: West Star Aviation; TAG Aviation; BizjetLaw.com)

Letter Of Intent (LOI) — A preliminary, generally non-binding document that outlines the principal terms on which a buyer and seller intend to proceed with an aircraft transaction, signifying good-faith intent to complete the deal. An LOI is typically signed early in the process — often accompanied by a refundable deposit into escrow — and precedes the definitive Aircraft Purchase Agreement (APA). It commonly addresses the aircraft description, proposed purchase price, deposit amount and escrow arrangements, the pre-purchase evaluation scope and facility, allocation of costs, and the time frame for negotiating and executing the APA. Although the LOI is usually non-binding as to the purchase itself, certain provisions — such as exclusivity (preventing the seller from marketing the aircraft to others during the negotiation period) and confidentiality — are often made binding. The LOI serves as the foundation and guidepost for the transaction; its terms should align with the subsequent APA to avoid renegotiation. (Sources: Bizjet Law; Duncan Aviation; Aero Law Center)

LLC/LCF or LLP Cards (Life-Limited Component/Life Cycle Fatigue or Life-Limited Parts Cards) — Individual records or tracking cards maintained for each life-limited component/Parts (LLC) installed on an aircraft's engines, APU, landing gear, and other certified systems. A life-limited component is a part that the engine or aircraft OEM has certified with a mandatory replacement limit expressed in flight hours, flight cycles (pressurization cycles), or calendar time — beyond which the component may not be operated regardless of physical condition, per 14 CFR Part 43 and the aircraft's type certificate data. LLC/LLP cards document the part number, serial number, current accumulated life (hours/cycles), and remaining life before mandatory removal or overhaul. Accurate and complete LLC/LLP cards are critical to aircraft airworthiness and are reviewed as a core element of the pre-purchase records inspection; gaps or discrepancies in LLC/LLP traceability can render components un-airworthy and significantly affect aircraft value. (Sources: EASA/FAA Life-Limited Parts guidance; TermAviation.com; JSSI Engine Program documentation)

Low Pressure Compressor (LPC) — The forward, lower-pressure compression stages of an axial-flow gas turbine engine, mounted on the low-pressure (N1) spool and driven by the low-pressure turbine through the inner concentric shaft. In a two-spool turbofan the LPC — often called the “booster” — sits immediately aft of the fan and provides the initial stage of compression before delivering air to the high-pressure compressor (HPC); on many engines the fan itself forms the first stage of the low-pressure system. Because it operates at lower rotational speed and pressure than the HPC, the LPC raises inlet air pressure modestly and feeds the high-pressure section, contributing to the engine's overall pressure ratio and efficiency. In a pre-purchase evaluation, the LPC blades, vanes, and the fan/inlet section are a primary focus of borescope examination for foreign object damage (FOD), erosion, corrosion, nicks, and cracking, since damage in this section can reduce engine performance and affect remaining service life. (Sources: SKYbrary; Rolls-Royce, “The Jet Engine”; FAA Aviation Maintenance Technician Handbook — Powerplant (FAA-H-8083-32); GE Aerospace)

Maintenance Manual — The formal, model-specific document produced or approved by the aircraft manufacturer (Aircraft Maintenance Manual, or AMM) that defines how to inspect, service, troubleshoot, repair, and return the aircraft and its systems to an airworthy condition. Per SKYbrary, it “details the way in which all maintenance tasks carried out on an aircraft shall be accomplished,” including lubrication checks and system servicing, but typically excludes structural repairs. Maintenance manuals constitute the “approved data” that licensed mechanics and repair stations must follow under 14 CFR Part 43. Separate engine and component maintenance manuals govern powerplant and line-replaceable unit maintenance. (Sources: SKYbrary; FAA AC 120-77; Boeing Global Services)

Maintenance Tracking Program — A software-based system used by aircraft operators and flight departments to record, schedule, and manage all maintenance activities, including airframe and engine inspection intervals, airworthiness directive compliance, life-limited component status, and service bulletin applicability. These programs provide real-time visibility into upcoming maintenance events, help prevent overruns, and generate documentation required by the FAA for continued airworthiness. NBAA offers guidance on best practices for selecting and migrating between maintenance tracking platforms. (Sources: NBAA; AvBuyer)

MRO (Maintenance, Repair and Overhaul) — An FAA-certificated repair station or facility authorized to perform scheduled and unscheduled maintenance, component repair, overhaul, and return-to-service activities on aircraft, engines, and components. MROs must hold appropriate FAA Part 145 repair station certificates for each category of work they perform. In the business aviation context, both OEM-authorized service centers and independent MROs conduct pre-purchase evaluations, hot section inspections, airframe heavy checks, and other scheduled maintenance events. The global business and general aviation MRO market represents approximately 9% of total civil aviation MRO spending. (Sources: FAA Part 145; Wikipedia; Aviation Week)

NBAA (National Business Aviation Association) — The leading U.S. trade organization for companies that rely on general aviation aircraft for business purposes, founded in 1947 and based in Washington, D.C. Per SKYbrary, the NBAA “represents companies that use general aviation (GA) aircraft — fixed-wing and rotary wing, piston-powered and turbine-powered — in their business operations.” The association represents more than 10,000 companies and professionals, advocates before Congress and the FAA on regulatory matters, publishes operational guidance (including the NBAA Management Guide), and hosts the annual NBAA-BACE, the world’s largest civil aviation trade show. (Sources: NBAA.org; SKYbrary)

OEM (Original Equipment Manufacturer) — The company that originally designed, certified, and manufactured an aircraft, engine, airframe, or component. In business aviation, OEMs include airframe manufacturers (e.g., Gulfstream, Bombardier, Dassault, Embraer, Cessna) and engine manufacturers (e.g., Pratt & Whitney Canada, Rolls-Royce, Honeywell, GE Aviation). OEMs issue type certificates, service bulletins, and maintenance manuals; they also operate factory-authorized service centers. (Sources: FAA Part 21; C&L Aero; BJT)

Oil Filter — A replaceable filtration element installed in a turbine engine’s lubrication system that removes metallic particles and contaminants from engine oil as it circulates through the engine. Oil filters are inspected and replaced at regular maintenance intervals and during pre-purchase evaluations; the condition of an oil filter’s contents — specifically the presence of metallic debris — can be a diagnostic indicator of internal engine wear. Oil filter checks are part of the standard engine ground inspection during a pre-purchase evaluation and are often conducted alongside chip detector checks and oil sample analysis. (Sources: West Star Aviation; JSSI; AvBuyer)

Onboard System — Any integrated electronic, avionics, or mechanical system installed and operating aboard the aircraft, including but not limited to flight management systems (FMS), autopilot, communications, navigation, cabin management systems, connectivity, environmental control, hydraulics, fuel management, and engine monitoring systems. The operational status and condition of onboard systems is evaluated during the pre-purchase evaluation process, including ground checks and the acceptance flight. Avionics and software components require periodic database and firmware updates to maintain compliance with regulatory requirements. (Sources: West Star Aviation; AOPA; AvBuyer)

Overhaul — A major maintenance procedure in which an engine, airframe component, or system is completely disassembled, inspected, repaired or replaced as necessary, reassembled, and tested to restore it to a condition that meets or exceeds the manufacturer's original specifications or approved limits. Per the FAA, maintenance includes "the inspection, overhaul, repair, upkeep and preservation of an aircraft and engine, including the replacement of parts." Engine overhauls are typically conducted at the manufacturer's specified Time Between Overhaul (TBO) — the maximum number of hours the engine may accumulate before a full shop visit is required. Engines enrolled in OEM or independent maintenance programs typically accrue reserves for overhaul events on a per-flight-hour basis. (Sources: FAA; Lycoming; NAFA)

Pollution Zone — A geographic classification used in engine and airframe maintenance programs to identify the level of environmental contamination (airborne particles, industrial pollutants, salt air, or corrosive agents) in the region where an aircraft is primarily operated. Aircraft consistently operated in high-pollution or coastal environments may face accelerated corrosion, component wear, and contamination of engine oil and fuel systems. Maintenance programs and engine preservation requirements are often calibrated to pollution zone classification, with operators in zones of higher atmospheric contamination required to perform more frequent or intensive preservation and inspection procedures. (Sources: Duncan Aviation; Lycoming Engine Preservation Service Letter L180B; Aviation Consumer)

Pre-Purchase Evaluation — A comprehensive technical evaluation of an aircraft's physical condition and maintenance records conducted by a qualified independent maintenance facility on behalf of a prospective buyer before the completion of an aircraft sale. Per Welsch Aviation, it is "the critical time when the aircraft is scrutinized and reviewed for sale" and "the penultimate step before the aircraft is accepted and delivered to the buyer." A typical pre-purchase evaluation for a business jet encompasses ground inspection of the airframe, engines, and APU; records review; borescope inspection (where applicable); oil filter and chip detector checks; oil sample analysis; operational systems checks; and an acceptance flight. The scope of the inspection, allocation of discrepancy costs, and remediation deadlines are typically defined in the Aircraft Purchase Agreement. (Sources: Welsch Aviation; West Star Aviation; Bizjet Law; Flying Magazine)

Pre-Purchase Work Scope — The agreed-upon written list of inspection tasks, tests, and evaluations to be performed during a pre-purchase evaluation, defining the boundaries of the technical review. The work scope is typically negotiated between buyer and seller before the evaluation begins and specifies which systems and components will be examined, whether borescope inspections will be included, which records will be reviewed, and whether an acceptance flight will be conducted. An insufficiently defined work scope can leave significant areas of risk uninspected, while an overly broad scope can unnecessarily expose the seller to costs and potential aircraft on ground situations. Qualified technical representatives typically assist buyers in developing an appropriate work scope for the aircraft type. (Sources: West Star Aviation; TAG Aviation; Six West Services)

Seller — The individual, corporation, trust, or other legal entity that owns the aircraft and is transferring title to a buyer pursuant to an Aircraft Purchase Agreement. The seller is typically responsible under the APA for delivering the aircraft in the agreed condition, completing remediation of airworthiness discrepancies discovered during the pre-purchase evaluation, providing complete and accurate maintenance records and logbooks, and ensuring clear title to the aircraft free of liens. Seller obligations regarding the pre-purchase evaluation, discrepancy correction, and delivery standards are negotiated and memorialized in the Aircraft Purchase Agreement. (Sources: Bizjet Law; Welsch Aviation; TAG Aviation)

Service Bulletin — A technical document issued by an OEM airframe or engine manufacturer notifying operators of a product change, improvement, or recommended inspection. Per Business Jet Traveler, “an SB originates with the original equipment manufacturer (OEM) and is distributed to all known owners and operators of the affected component.” Service bulletins are categorized as optional, recommended, alert, or mandatory, though, unlike Airworthiness Directives, compliance is generally not legally required for Part 91 operators unless the SB is incorporated into or accompanied by an AD. Alert service bulletins are issued for safety-related conditions and frequently result in the FAA issuing an AD that references the SB as the compliance method. SB compliance history is reviewed during pre-purchase evaluations as a measure of the aircraft’s maintenance standard. (Sources: BJT; C&L Aero; Lycoming; Covington Aircraft)

Thrust Reverser — A mechanism fitted to many jet engines that redirects engine exhaust or bypass airflow forward to oppose the aircraft’s forward motion, providing additional braking force during the landing roll or a rejected takeoff. Per GlobeAir, a thrust reverser “is an integral mechanism equipped on many jet engines, designed to redirect the engine’s thrust forward, thereby opposing the aircraft’s forward motion.” Three main types are used in business jets: cascade (cold-stream) reversers, pivot-door (clamshell) reversers, and bucket-type reversers. Thrust reversers are subject to regular inspection and maintenance to ensure reliable deployment; inoperability is typically addressed under the aircraft’s Minimum Equipment List. Thrust reverser condition and compliance status are reviewed during the pre-purchase evaluation. (Sources: GlobeAir; SKYbrary; PlaneFYI)

Trend History — A longitudinal record of engine performance parameters — including exhaust gas temperature (EGT), oil pressure, oil temperature, fuel flow, and compressor/turbine speeds — collected over time and analyzed to identify performance trends, degradation patterns, or anomalies that may indicate developing engine problems. Trend monitoring is a core component of modern engine health management programs offered by OEMs (e.g., Pratt & Whitney FAST, Rolls-Royce CorporateCare) and independent providers, enabling condition-based maintenance rather than purely interval-based maintenance. A review of trend history data is standard practice in the pre-purchase evaluation process; abnormal trends can indicate compressor deterioration, hot section wear, or other conditions warranting further borescope or on-wing investigation. (Sources: Atlantic Jet Partners; Pratt & Whitney; Holstein Aviation; Elliott Aviation)

Visual Inspection — A systematic external and internal examination of an aircraft, its structures, systems, and components relying primarily on unaided human sight or approved optical aids to detect visible damage, corrosion, cracking, deformation, leaks, missing fasteners, or other defects. Visual inspections are a fundamental element of all aircraft maintenance checks, pre-purchase evaluations, and preflight walkarounds. For areas not accessible to the naked eye, a borescope provides a visual inspection capability without disassembly. Inspectors look for wrinkles, corrosion, evidence of repairs, fluid staining, and condition of control surfaces, structural panels, seals, and exterior coatings. Visual inspection findings are documented and assessed against airworthiness standards and maintenance manual limits. (Sources: SKYbrary; AOPA; West Star Aviation; USA Borescopes)

GLOBAL ATMOSPHERIC CORROSIVITY MAP

