

Memorandum

1 1 2 6 **2004**

Date:

Repl

Attn.

Subject:	INFORMATION: NTSB Accident/Incident
	Request 04-015; AAI-220 route slip dated
	December 17, 2003

From: Director, Flight Standards Service, AFS-1

v to	Wanda Maana
of:	

To: Director of Accident Investigation, AAI-1 ATTN: Kim Burtch, AAI-220

This memorandum is in response to the NTSB request for additional information regarding the accident that involved N233YV on January 8, 2003, at Charlotte-Douglas International Airport, Charlotte, North Carolina.

Specifically, the NTSB requested the following:

1. A copy of the detailed guidelines that inspectors use on overseeing operators' CASS programs.

AFS Response: We have attached a copy of FAA Order 8300.10, Airworthiness Inspector's Handbook, Volume 2, Chapter 65, "Evaluate Continuing Analysis and Surveillance Program/Revision," which provides guidance for ensuring that an operator/applicant's CASS Program meets the necessary requirements for certification or revision. Also attached is a copy of FAA Order 8300.10, Volume 3, Chapter 37, "Monitor Continuing Analysis and Surveillance Program/Revision," which provides guidance for monitoring a CASS program and for evaluating its overall effectiveness.

2. In addition, a copy of the program, documentation and procedures that are in place for training inspectors for more effective oversight of CASS programs.

AFS Response: Attached is a copy of the draft lesson plan for the CASS portion of the Air Carrier Airworthiness Indoctrination course that will be taught to all new inspectors at the FAA Academy. The initial course was taught during the week of January 12, 2004.

If we can be of further assistance, please let us know.

2 James J. Ballough

Attachments

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CHAPTER 65. EVALUATE CONTINUING ANALYSIS AND SURVEILLANCE PROGRAM/REVISION

SECTION 1. BACKGROUND

1. PTRS ACTIVITY CODES

A. Maintenance: 3333 (New)/3334 (Revision)

B. Avionics: 5333 (New)/5334 (Revision)

3. OBJECTIVE. This chapter provides guidance for ensuring that an operator/applicant's Continuous Analysis and Surveillance Program (CASP) meets the necessary requirements for certification or revision.

5. GENERAL

A. The continuing analysis and surveillance system is usually included in the operator's maintenance manual. The system ensures the adequacy of an operator's maintenance program and confirms that the program is properly followed and controlled. FAR §§ 121.373 and 135.431 allow the FAA to require revisions to an operator's maintenance program based on deficiencies or irregularities revealed by the continuing analysis and surveillance system.

B. Continuing Analysis and Surveillance Program Functions

(1) A continuing analysis and surveillance system has two functions:

(a) The "audit function" which includes a follow-up for those components removed, and the teardown report must be a part of the Continuing Analysis and Surveillance Program. It must also include examining the administrative and supervisory aspects of the operator's program (including work done outside of the operator's basic organization). The audit must ensure that the Main Base, Sub Base, Line Station, and shops operate in accordance with company procedure. The audit function includes such things as:

- Ensuring that all publications and work forms are current and readily available to the user
- Ensuring that major repairs/alterations are classified properly and accomplished with approved data

- Ensuring that carryover items and deferred maintenance are properly handled
- Ensuring that vendors are properly authorized, qualified, staffed, and equipped to do the contractor function according to the operator's manual

(b) The "performance analysis function" includes daily and long-term monitoring and emergency response related to the performance of affected aircraft systems, including aircraft engines and components. This function includes monitoring such things as:

- Daily mechanical problems for affected aircraft (daily monitoring)
- Deferred maintenance items including excessive number and times (daily monitoring)
- Pilot reports compiled by Air Transport Association (ATA) code (long-term monitoring)
- Mechanical Interruption Summary Reports (MIS) (long-term monitoring)
- Contained engine failures (emergency response)
- High number of unscheduled component removals (long-term monitoring)

(2) The continuing analysis and surveillance program should include a system of data collection and analysis which may or may not be part of a reliability program.

C. The continuing analysis and surveillance system also addresses operational matters, such as maintenance scheduling, control and accountability of work forms, conformity to technical instruction, and compliance with procedural requirements. Additionally, it examines the adequacy of equipment

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and facilities, parts protection and inventory, mechanic prog competency, and shop orderliness.

7. REVIEWING THE OPERATOR'S PROGRAM

A. For maximum effectiveness, the continuing analysis and surveillance program should be separated from other maintenance functions. Some operators establish a separate quality assurance organization for this purpose. Others assign this function to their inspection/quality control organization. When the analysis and surveillance responsibility is assigned to an organizational unit that has other duties, these functions should be performed independently of the other duties.

B. Mechanical performance analysis may be performed as part of a reliability program or as an independent data collection and analysis system (See Advisory Circular 120-17, Maintenance Control by Reliability Methods, as amended). The system should include charting or other appropriate methods for recording and accounting of pertinent data at specified intervals. This will ensure continuous program operation. Data collection and analysis are essential elements for supporting the condition-monitoring process.

C. The use of contract agencies tends to complicate an operator's continuous analysis and surveillance system. When a contractor fails to provide the operator with essential information (such as failure characteristics, service times, etc.), gaps are created in the operator's data collection. This obstructs the continuous analysis and surveillance system. Therefore, the continuing analysis and surveillance program must include procedures for transmitting essential information back to the operator.

D. When aircraft fleets are grouped for purposes involving data collection, the data from the total of the fleets may provide a valid comparison for behavior of one of the fleets. However, data generated by a single airplane or a small fleet can be obscured by a larger fleet of the group.

NOTE: Unacceptable performance of a small fleet may not contribute a significant statistical impact unless the data from the smaller fleet is reviewed individually.

E. When an operator uses a contractor for total maintenance support, the operator is responsible for the continuing analysis and surveillance requirement. The operator must have enough personnel and resources to accomplish both the audit and performance analysis functions.

F. The complexity and sophistication of the continuous analysis and surveillance system should relate to the certificate holder's operation. A small operator should not be expected to have a complex system similar to a large airline. However, small operators must have a system with continuous data collection which includes specified analysis points and repetitive examinations.

G A data collection and analysis program can use a manufacturer as a collection and analysis center if the Administrator agrees. The operator is still responsible for the development and implementation of corrective actions and the overall effectiveness of the program.

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. Prerequisites:

- Knowledge of the regulatory requirements of FAR Parts 121 and/or 135
- Successful completion of either the General Aviation or Airworthiness Inspectors Indoctrination Course or equivalent
- Suggested completion of the FAA Reliability Training Course

B. Coordination. This task requires coordination between the Principal Maintenance Inspector (PMI) and the Principal Avionics Inspector (PAI).

3. REFERENCES, FORMS, AND JOB AIDS

- A. References
 - FAR Part 43
 - Advisory Circular 120-16, Continuous Airworthiness Maintenance Program, as amended
 - Advisory Circular 120-17, Maintenance Control by Reliability Methods, as amended
- B. Forms. None.
- C. Job Aids. None.

5. PROCEDURES

A. Brief Operator/Applicant On Program Requirements and Procedures. When an operator/ applicant inquires about a continuing analysis and surveillance program, brief the operator/applicant about program requirements. Inform the operator/ applicant that an acceptable program must have a continuous internal audit and analysis system that accomplishes the following:

- Evaluates the organization's performance
- Identifies the performance deficiencies
- Determines and implements corrective actions
- Determines the effectiveness of corrective actions

B. Review the Operator/Applicant's Program. When the operator/applicant presents the complete continuing analysis and surveillance program, ensure that the program audits and analyzes the following:

- Aircraft inspections
- Scheduled maintenance
- Unscheduled maintenance
- Aircraft, engine, prop and appliance repair and overhaul
- Maintenance manuals
- Mechanical Reliability Reports (MRRs)
- Mechanical Interruption Summary Reports (MISRs)
- Vendor facilities and capabilities
- Maintenance organization staffing
- Required Inspection Item Program (RIIs)

C. Review Operator's Manual. Ensure that the manual contains the following:

(1) An organizational chart that defines the lines of authority

(2) Definitions of responsibilities and duties

(3) The means by which the information will flow within the operator/applicant's organization and between any contractor/vendors and the operator/ applicant

(4) Examples of forms or reports that are used

(5) Procedures that include a record review covering the following items:

- Accountability for all inspection requirements
- Routine and non-routine maintenance records
- Overhaul records
- Methods of Airworthiness Directives (ADs) compliance
- Service bulletin compliance
- Major repairs and alterations approval data

D. Evaluate Available Staffing. Ensure that the staffing described in the manual is available and

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appropriate for the complexity of the operator/ applicant's operation.

E. Analyze Results. Upon completion of the review, analyze the results and determine whether the operator/applicant's program meets all requirements. If problems exist, discuss the discrepancies with the operator/applicant and advise them as to what areas need corrective action.

7. TASK OUTCOMES

A. File PTRS Transmittal Form.

B. Successful completion of this task will result in the acceptance of the continuous analysis and surveillance program or revision.

C. Document Task. File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES. Normal surveillance.

CHAPTER 37 MONITOR CONTINUING ANALYSIS AND SURVEILLANCE PROGRAM/REVISION

Section 1 Background

1. PTRS ACTIVITY CODES

A. Maintenance: 3635

B. Avionics: 5635

3. OBJECTIVE. This chapter provides guidance for monitoring a continuing analysis/surveillance program and for evaluating the overall effectiveness of the continuous airworthiness maintenance program.

5. GENERAL

A. Some operators, with approved reliability programs, use the reliability program to fulfill the monitoring mechanical performance functions requirement of its continuing analysis and surveillance program. Since both reliability programs and continuing analysis and surveillance programs require data collection, data analysis, and corrective action requirements, a duplication of operational data would occur.

B. Not all the elements of Advisory Circular 120-17, Maintenance Control by Reliability Methods, as amended, are required to be contained in a continuing analysis and surveillance program for monitoring mechanical performance. Advisory Circular 120-17, as amended, does not provide for the audit function of continuing analysis and surveillance programs.

7. INITIATION AND PLANNING

A. Initiation. This task is scheduled as part of the work program. Additional inspections are initiated by national, regional, or district office special requirements. When given this assignment, the inspector must review current Federal Aviation Regulations (FAR) requirements and FAA policy.

B. Planning

(1) Program requirements

(a) The program must contain a system that determines the effectiveness of the maintenance and inspection programs, and provides for timely corrective action of any deficiencies in the maintenance/inspection programs. This system must be identified in a chapter of the operator's maintenance manual and must reference FAR §§ 121.373 and/or 135.431.

(b) Any portions of the program not contained in this chapter of the manual must be referenced to their exact location. For example, an approved reliability program must be referenced in the Program if it is used to fulfill the mechanical monitoring function of the program.

(2) Operator size. The complexity and sophistication of the Program should be relative to the operator's operation. A small operator should not be expected to have a program suitable for a large operator; however, all programs must have, as a minimum, monitoring mechanical performance and audit functions. Procedures for administering these two functions must be identified in the operator's manual.

(3) Monitor mechanical performance function. This function must provide for collecting and analyzing operational data. The intent here is to identify deficiencies that require corrective action. This monitoring is done through emergency response, day-to-day monitoring, and long-term monitoring.

(a) Emergency responding: Emergency responding includes identifying emergency/critical situations, determining causes, and formulating a plan to ensure that similar conditions do not exist in like equipment. Typical examples of emergency/critical situations include:

- · In-flight engine separations
- · In-flight propeller separations

- Uncontained engine failures
- Critical structural failures
- Any life-limited part failure

(b) Day-to-day monitoring. Normally, large operators conduct daily meetings to discuss morning launch delays and activities of the previous day. Smaller operators conduct these meetings at less frequent intervals. Items typically discussed include:

- · Daily mechanical problems of each aircraft
- · Non-availability of spare parts
- Inadequate manpower to perform maintenance
- Deferred maintenance items -- excessive numbers and time
- · Safety related failures
- Recurring maintenance problems
- Excessive unscheduled maintenance
- Maintenance delays/cancellations
- Scheduled inspection results, including sufficient time to complete the check, unusual/critical findings, recurring problems, and parts/equipment/manpower availability

(c) Long-term monitoring. This system should include charting or some appropriate means of reporting and accounting operational data at specified intervals to reveal trend-related information. Typical examples of operational data used by the operator to monitor mechanical performance are:

> Pilot reports compiled by Air Transportation Association (ATA) code

- · Inspection findings compiled by ATA code
- · Failure rates compiled by ATA code
- Tear-down reports
- Premature removal rates (includes engines)
- Engine shut-down rates
- · Confirmed failure rates
- Deferred Minimum Equipment List (MEL) items
- Mechanical Interruption Summaries (MIS)
- Mechanical Reliability Reports (MRR)
- (4) Audit functions

(a) Auditing is normally on-the-scene observation and should be a scheduled, on-going activity encompassing periodic audits of contract agencies. The audit also addresses adequacy of equipment and facilities, storage and protection of parts, competency of mechanics, and housekeeping.

(b) To be effective, audits should be separate from the maintenance organization. If audits are assigned to organizational units with other duties, the audit should be accomplished as an independent activity. Under no conditions may an organizational unit perform an audit on itself. Typical audit functions ensure that:

- All publications and work forms are current and readily available to the user
- Maintenance is performed according to the methods, standards and techniques specified in the operator's manuals
- Maintenance forms are screened for completeness, proper entries, and Required Inspection Item identification
- Major repairs/alterations are properly classified and accomplished with approved data

- Records of all applicable Airworthiness Directives contain current status and method of compliance
- Airworthiness releases are executed by designated persons and according to procedures specified in the operator's manuals
- Records reveal current status of lifelimited parts
- The training program syllabus is being followed
- Carryover items and deferred maintenance are properly handled
- Vendors are properly authorized, qualified, staffed, and equipped to do the

contractor function according to the operator's manual

(5) Use of contractors. When the operator contracts with another operator and/or repair station for maintenance support, the operator is still responsible for continuing analysis and surveillance requirements. The responsibility for administering or controlling a continuing analysis and surveillance program can never be contracted out. However, contract organizations may be used to collect operational data, make analyses and recommendations, perform audits, and report information to be used by the operator in identifying deficiencies and implementing corrective action.

(6) Scheduling inspection. Normally, this inspection will be coordinated verbally with responsible persons of the operator. If responsible persons are not available on the agreed-upon date, reschedule the inspection with the operator and notify the operator in writing to confirm the date.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. Prerequisites

- Knowledge of regulatory requirements of FAR Parts 121 and 135
- Successful completion of Airworthiness Inspector's Indoctrination Course for General Aviation and Air Carrier Inspections, or previous equivalent
- Previous experience working with an operator required to have a continuing analysis and surveillance program

B. Coordination. This task requires coordination between the principal inspectors assigned to the operator. Additional coordination may be required with local, regional and headquarters personnel, depending on the severity of the noncompliance.

3. REFERENCES, FORMS, AND JOB AIDS

A. References

- Advisory Circular 120-16, Continuous Airworthiness Maintenance Program, as amended
- Advisory Circular 120-17, Maintenance Control By Reliability Methods, as amended
- Operator's Maintenance Procedures Manual
- B. Forms. None.
- C. Job Aids. None.

5. PROCEDURES

A. *Review Office Files*. Review the historical data of the program to include the following:

· The PTRS history of past inspections

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- The Enforcement Investigative System (EIS)
- The previous six months' Mechanical Reliability Reports (MRR's)
- Mechanical Interruption Summaries (MIS's)
- Engine Utilization Reports (EIR's)
- Any other operational data that might indicate negative trends in the maintenance/inspection program

B. Collect Items To Be Used During Inspection. Note and collect the following:

(1) Samples of any negative trends in previous six month's Mechanical Reliability Reports, Mechanical Interruption Summaries, and Engine Utilization Reports

(2) Samples of negative trends in operational data that has been identified by the operator in previous reports

(3) Reports of all emergency/critical situations during the previous twelve months

(4) Samples of records from the day-to-day monitoring meetings in which corrective actions were deemed necessary

(5) Negative trends in the maintenance/inspection program noted during routine surveillance that have not been detected by the continuing analysis/surveillance program. Examples of situations indicating negative trends include increases in the following:

- Aircraft delays
- · Premature removal rates
- The number of engine shutdown rates
- Number of short term escalations

- Deferred maintenance (Minimum Equipment List) items and length of time items remain deferred
- Repeat pilot reports

C. Review the Operator's Manual. Before making the on-site inspection, obtain the operator's maintenance procedures manual and review the continuing analysis and surveillance program. It is vital that the inspector obtain precise knowledge of the operator's programs, concepts, and how the program is administered. While reviewing the manual to ensure that it complies with the Federal Aviation Regulations, and before making the inspection, note any unclear areas, obvious omissions, or apparent discrepancies.

(1) Review the operator's program as described in the manual. Ensure that it contains policies and procedures for determining the effectiveness of the maintenance/inspection program and for corrective action of any deficiencies in those programs as required by FAR §§ 121.373 and 135.431.

(2) Ensure that the manual contains procedures for administering the continuing analysis and surveillance program that are clear and easy to understand.

(3) Ensure that the operator's manual describes a systematic method of reviewing operational data. It should determine the effectiveness of the maintenance/inspection program through:

- · Emergency responding
- · Day-to-day monitoring
- Long-term monitoring

(a) *Emergency responding:* The manual must include procedures for responding to critical and/or emergency safety-related situations. Review the manual procedures to ensure:

- · Critical/emergency situations are defined
- Procedures exist for the notification/coordination process

- Procedures exist for determining if similar situations exist on other aircraft
- Procedures are used to implement corrective action
- Procedures define how the FAA is notified

(b) Day-to-day monitoring. Ensure that the manual contains procedures for conducting periodic meetings with required personnel to discuss mechanical performance and identify the need for corrective action. Procedures must include:

- What items are discussed
- · When meetings are conducted
- · Who attends meetings
- How records of these meetings are forwarded to the FAA

(c) Long-term monitoring: data collection. Determine how the operator is monitoring the mechanical performance function of the program. This monitoring should include, at a minimum:

- What operational data the operator is using
- · What forms are used to collect the data
- Who is responsible for compiling the data
- · When and how often the data is collected

(d) Long-term monitoring: data analysis.

Ensure that the manual has procedures for analyzing operational data. The procedures must include:

• When the analysis is to be performed

- Who is responsible for performing the initial analysis
- What conditions, based on performance standards, warrant corrective action
- Who is responsible for performing further analysis and making a corrective action recommendation

(5) Ensure that the manual has procedures for taking corrective action based on the data analysis. The procedures must describe:

- Who has responsibility for implementing corrective action
- When the corrective action will be implemented
- How the corrective action will be phased into the maintenance program

NOTE: Some operators fulfill this long-term monitoring function through their approved reliability programs.

(6) Ensure that the operator's manual contains audit functions. Review the manual.

(a) The procedures must provide a continuous audit of the total maintenance program, including contract agencies. The procedures must state:

- Who is responsible for performing audits (normally, an independent agency that is assigned to the quality assurance/inspection department)
- What is being audited (e.g. manuals, maintenance, record entries, Required Inspection Items (RII), training, airworthiness releases, deferred maintenance, vendors, etc.)
- · When the audits are performed

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- How the audits are documented
- · How records are retained

(b) Procedures for analyzing audit functions must include the following:

- Analyzing each audit to identify deficiencies
- Initiating corrective action for each deficiency
- Providing for on-the-spot corrective action, if appropriate
- Providing for further analysis to determine system breakdown
- Establishing qualifications of persons performing analysis
- Recording audit findings and subsequent actions

(c) Procedures must contain corrective action, to include:

- Timely implementation of corrective action from the data analysis
- Follow-up to determine effectiveness of the corrective action

E. Document Findings of Review Prior to On-Site Inspection. Document preliminary findings found during the office and manual review, and discuss them with the principal inspector/supervisor. Along with the principal inspector/supervisor, indicate those inspection findings that must be brought to the attention of the operator during the initial meeting. These findings will be used in determining the overall effectiveness of the program.

F. Schedule Inspection. Schedule inspection with the operator. Coordinate the inspection with the operator to determine when the operator's personnel will be available

and agree upon a time for the inspection. Arrange to attend a periodic meeting.

G. *Meet With the Operator*. Contact the person who has overall responsibility for the program and discuss:

- · The nature and scope of the inspection
- Negative trends discovered during manual and office review
- Organizational elements responsible for administering the program, including identifying personnel

H. Verify Currency of Operator's Manual. Ensure that the organizational person responsible for the continuing analysis and surveillance program has the current manuals. This can be done by comparing the effective dates or revision dates of the manual master copy held by the operator with the manual held by the responsible person.

I. Determine if Staffing Equals That Described in the Operator's Manual. Compare the current organization to the organization described in the manual. Document any differences in staffing. These differences will be used in the final analysis in determining the effectiveness of the continuing analysis and surveillance program.

J. Ensure That Manual is Readily Available to Personnel. Determine whether each organizational element responsible for administering the program has a current copy of the manual available.

K. Inspect Operator System To Monitor Mechanical Performance. During the inspection, document and photocopy any instances in which the operator did not follow the procedures identified in the manual by inspecting the following areas:

(1) Emergency responding. Using the previous year's reports of emergency actions gathered during the office review, determine whether:

• Manual procedures were followed to ensure that similar situations did or did not exist on other aircraft

- Fault analysis was accomplished for each situation
- Any corrective action established was implemented and effective
- (2) Day-to-day monitoring

(a) Establish that periodic meetings are occurring as defined in the manual.

(b) Attend a periodic meeting to determine if daily mechanical problems are being discussed and if the appropriate personnel are attending.

(c) Using day-to-day monitoring records collected during office review, determine, when the need for corrective action was recognized, whether:

- The problem was assigned to appropriate personnel
- The plan for corrective action was established, implemented and effective
- (3) Long-term monitoring

(a) *Data collection:* Compare the manual procedures with the actual data collection. Ensure that the following is being accomplished according to the manual:

- All operational data was collected and was entered on the appropriate forms
- · The appropriate persons compiled the data
- The data was collected at the specified times

(b) Data analysis: Determine if data analysis is being performed in accordance with manual procedures by comparing the manual procedures to actual performance. Ensure that:

- Operational data was analyzed to identify items exceeding performance standards, indicating negative trends
- These items were further analyzed to identify cause by using the sample of negative trends reported by the operator and collected during the planning of the inspection
- Initial and further analysis was performed by trained, competent, qualified personnel
- Audit functions are accomplished when analysis has identified the need
- The need for corrective action was determined

(c) Corrective action: Use the same sample of the negative trends used in the data analysis to ensure that a corrective action plan was established and implemented for those items requiring corrective action. Continue to follow those items through the corrective action process.

- Determine if the plan required changes to the maintenance/inspection program
- Ensure that these changes were implemented
- Review operational data to ensure that the corrective action was effective in reversing the negative trend

(d) Document all findings indicating that manual procedures were not followed. These findings will be used in determining the overall effectiveness of the continuing analysis and surveillance program

L. Inspect the Operator System to Audit the Maintenance Program. Document and photocopy any instances in which the operator did not follow the procedures identified in the manual. Contact the responsible person to determine what audits were accomplished in the past 12 months.

(1) Inspect audit functions by accomplishing the following:

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- Sample a cross-section of audit requirements identified in the manual and have the operator provide records of audit completion
- Review the audit completion records to determine scope and detail of inspection
- Verify results of audit by performing spotcheck of audited facility
- Verify that audits were performed within specified time periods
- Determine whether persons who performed the audits have experience and expertise in the areas audited
- Determine whether audit functions triggered by analysis are accomplished
- Discuss any other areas of concern found during surveillance that was not noted through the audit system

(2) Analyze audit findings. Determine if the operator has performed analysis of audits. Using samples collected from audit records provided by the operator, determine the following:

- Analysis of each audit was accomplished to identify deficiencies
- On-the-spot and system corrective actions were implemented to correct deficiencies
- Personnel performing audit had necessary experience and expertise
- (3) Corrective action. Using the same samples:
 - Determine if the operator has implemented corrective action

- Perform an on-site inspection to ensure that the corrective action was implemented and timely
- Determine the effectiveness of corrective action by ensuring that similar deficiencies no longer exist

(4) Document all findings indicating that manual procedures were not followed. These findings will be used in determining the overall effectiveness of the program.

M. Follow Up Negative Trends Identified During Office and Manual Review

(1) Contact the person responsible for the negative trend.

(2) Determine whether the trend was significant.

(3) Determine why the trend was not identified by the program.

(4) Ensure that corrective action is initiated.

(5) Document all findings.

N. Determine Effectiveness of the Program. Combine all inspection findings from the following to determine program effectiveness, including:

- The office and manual review
- On-site inspection
- Inspector-identified trends

O. Coordination. After assessing the program and before debriefing the operator, consult with the appropriate FAA supervisory personnel to determine which (if any) findings require official notification.

- P. Debrief Operator. In the operator's debriefing:
 - · Discuss results of the inspection

- Discuss all discrepancies discovered during the inspection
- Discuss possible corrective action
- Inform the operator that official written notification of findings will follow
- Inform the operator that a plan for timely completing corrective action must be submitted

NOTE: Agree with the operator upon time limits for the corrective action plan during the debriefing. Negotiations over time limits can be done later if mitigating circumstances arise.

7. TASK OUTCOMES

A. File PTRS Transmittal Form

B. Successful completion of this task will result in a formal letter to the operator confirming the inspection findings.

C. Document Task. File all supporting paperwork in the operator's office file.

9. FUTURE ACTIVITIES. At the end of the time limit for corrective action, schedule a six month follow-up inspection in the areas of deficiency to determine the effectiveness of the operator's corrective action.

LESSON PLAN COVER SHEET

Routing Symbol:	AFS-500
Course No. and Name:	21055 – Air Carrier Airworthiness Indoctrination
Lesson Title:	Introduction to RII, CASS, and Reliability
Lesson Number:	03
Date Completed:	11/25/2003
Duration (in hours):	3

Lesson Overview:

This lesson provides basic knowledge of the continuous airworthiness maintenance program, Continuing Analysis and Surveillance Systems (CASS), Reliability Programs, and Required Inspection Items (RII).

Instructor References:

14 CFR Part 121 Sub	part L	AC 120-16 (as revised)
14 CFR Part 135 Sub	part J	AC 120-17 (as revised)
14 CFR Part 145, §14	ł 5.15 7	AC 120-79 (as revised)
FAA Order 8300.10,	Volume 2, Chapters 64, 65,	AC 129-4 (as revised)
66, 67, 80, & 87 and 37, & 38	Volume 3, Chapters 36,	Flight Standards Strategic Plan Goals FY 2003-
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Visual Numbers and Comments:

PowerPoint Slides: SL-03-01 through SL-03-24

Handouts:

HO-03-01		Applicable References for	or RII. CASS. & Reliability Programs
HO-03-02			CASS Flowcharts
PE-03-01	· · · · · · · · · · · · · · · · · · ·		
PE-03-02			CASS Evaluation Exercise

Computer File Names:

Lesson Plan

PowerPoint Presentation

LP-03-AC-CASS SL-03-CASS-Instructor.pps

•	LESSON PLAN C	ONTINUATION			
LESSON TITLE	Introduction to RII, CASS, and Reliability Programs	PRINT DATE	01/05/2004	PAGE	3
	SUBJECT OUTLINE			NOTES	
LESSON OF	BJECTIVES				
By the end o	of this lesson, you will be able to:				
				SL-03-2	
	Lesson Objective	S			
	By the end of this lesson, you will	be able to:			
	Research key regulations and g RII and CASS	uidance for			
	✤Evaluate an operator's RII proce	edures	2-		
	Evaluate an operator's CASS pro	ogram			
	S-03-2				

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- Research key regulations and guidance for RII and CASS
- Evaluate an operator's RII procedures
- Evaluate an operator's CASS program

LESSON TITLE

Introduction to RII, CASS, and Reliability

PRINT DATE 01/05/2004

LESSON PLAN CONTINUATION

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LESSON TITLE	Introduction to RII, CASS, and Reliability PRINT DATE 01/05/2004 Programs	PAGE 7
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RII Refere	inces	
There are a	few references you can use when working with RII.	l
		SL-03-6
\$* 	RII References	
	♦§121.371, §121.369, & §135.427 ♦AC 120-16 (as revised)	
l	*8300.10, Vol. 2, Ch. 64	
	♦ 8300.10, Vol. 3, Ch. 36	
	Ş-03-6	
Because rec regulatory r inspections. read this se	uired inspections are so important, there are very strict equirements regarding who may perform the required Open up 14 CFR 121.371, and take a couple of minutes to ction real quick.	Direct participants to §121.371. Allow participants a couple of minutes to read this.
Que perse	stion: What are the requirements for required inspection onnel?	§121.371
Ansi	wer:	
	1. Must be properly trained, qualified, authorized, and certificated	
	2 Must be under supervision and control of an inspection	}
	unit	
	 and control of an inspection unit Cannot inspect their own maintenance work 	

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LESSON TITLE	Introduction to RII, CASS, and Reliability PRINT DATE 01/05/2004 Programs	PAGE	9
	SUBJECT OUTLINE	NOTES	
RII Contra	ctor Concerns		
Regulations a repair station In this lesson organization longer have	allow operators to have maintenance work performed by ns or other operators. This is referred to as "Contracting". n, I will be referring to personnel outside the operator's as contractors. This does not mean that operators no responsibility for the required inspections.	§121.363 §135.413	•
Rather, this regulations a Operators ar of any contra	means that they need to pay close attention to RII and verify that the contractors are following the regulations. e responsible for the airworthiness of the aircraft regardless actual arrangements.		
	RII Contractor Concerns	SL-03-7	
	 Must follow operator's Maintenance Manual Train to operator's system Place on operator's RII inspector list Follow operator's countermand procedures Must have organization to support maintenance needs and requirements 		
Contractor the operation	ors are required to <u>follow</u> the operator's RII procedures in itor's maintenance manual.	§§121.363, 1 121.371	121.3
 This inclusion system and authorized 	des having personnel <u>trained to follow</u> the <u>operator's</u> RII nd then having the individual placed on the operator's <u>list of</u> <u>d RII personnel</u> .	§§135.413, 1 135.429	135.4
Any time become p	contract personnel perform a required inspection, they part of the operator's inspection organization.	8300.10, Vol 36	. 3, C
 Contractor of support 	ors are also required to have an organization that is capable ting the operator's maintenance needs and requirements.		
An operator whether or n	is required to have countermand procedures in place of they use a contractor for required inspections.		

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LESSON PLAN CONTINUATION	
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LESSON TITLE

Introduction to RII, CASS, and Reliability PRINT DATE 01/05/2004 PAGE 11
Programs



LESSON	TITLE
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LESSON PLAN CONTINUATION Introduction to RII, CASS, and Reliability Programs

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PAGE

SUBJECT OUTLINE	NOTES
When you are monitoring an existing continuous airworthiness maintenance program, it is likely that problems (findings) with RII will represent a major portion of the inspection. Examples of the findings you may have are:	8300.10, Vol. 3, Ch. 36
Unauthorized personnel are performing required inspections	0
 There is no specific training for RII personnel 	5171 779 (p)
 Countermand procedures are nonexistent or insufficient 	§145.157
 Contract personnel performing required inspections are not properly trained/qualified/authorized/certificated (except at foreign certificated repair stations in Part 145 Subpart C) 	
Question: Are there any questions about RII at this time?	Address any
	participant questions.
Let's practice with an exercise.	Press "B" on keyboard
Let's practice with an exercise.	Press "B" on keyboard to blackout screen for exercise.

LESSON P	LAN	CONTINUATI	0

LESSON TITLE

Introduction to RII, CASS, and Reliability PRINT DATE Programs

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Question #3

Question: Are there any discrepancies with the countermand procedures provided by the operator on page 4 of this exercise? If so, what are they?

SUBJECT OUTLINE

Answer: No. There are no discrepancies.

Question: What regulation did you base your answer on?

Answer: §121.369

Question #4

Question: Are there any discrepancies with the list of required inspection items? If so, what are they?

Answer: Yes. Engines are required by regulation and should be inspected after maintenance.

Question: What regulation did you base your answer on?

Answer: No specific regulation addresses this, but §121.369 is applicable.

Question #5

Question: Based on your answers above, the attached information, and the regulations and guidance, what does the operator need to do for their RII procedures and program?

Answer: Based on the answers above and the information provided, the operator needs to review, revise, and correct their required inspection procedures and documentation. Failure to do so could lead to enforcement action.

Question: Are there any questions about the exercise?

Question: Are there any questions about Required Inspection Items?

One method operators can use to help identify items that may need required inspections is a Continuing Analysis & Surveillance System. Let's take a look at that now.

Address any participant questions.

Press "B" on keyboard to return to slide presentation.

	LESSON PLAN CONTINUATION				
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SUBJECT OUTLINE	NOTES
To help improve the efficiency and effectiveness of his programs, there are 2 basic questions that CASS helps an operator answer:	
1. Is the operator following their inspection and maintenance manuals and procedures? (Performance of program)	
 Does the operator produce consistently airworthy aircraft by following those manuals and procedures? (Effectiveness of program) 	
Let's see what references are available to help you determine if an	
operator is effectively answering these questions.	
CASS References	
	SL-03-12
CASS – References	
 ❖§121.373 and §135.431 ◆Requirement for CASS ◆AC 120-79 (as revised) 	- may -
♦ 8300.10, Vol. 2, Ch. 65	
♦ 8300.10, Vol. 3, Ch. 37	
◆Evaluation & Inspection Guidance	
51-03-12	
References available for you when working with an operator's CASS	

References available for you when working with an operator's CASS include:

- 14 CFR Parts 121.373 and 135.431 require the use of CASS by an operator
- AC 120-79 provides operators with guidance for developing and implementing a CASS
- 8300.10, Vol. 2, Ch. 65 and Vol. 3, Ch. 37 provide guidance for inspecting and evaluating an operator's CASS

Now let's take a look at the 4 basic steps of CASS.

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Introduction to RII, CASS, and Reliability Programs	PRINT DATE	01/05/2004	PAGE

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LESSON TITLE

	SUBJE	CT OUTLINE		NOTES	
Corrective action is v corrective action plan for both performance analysis is not the sa	when final root can n is finalized and i e and effectivenes ame as the analysi	use analysis implemented is portions of is that takes	takes place and This step hap CASS. Root ca place in step 2.	a ipens ause	
The root cause analy relation between per cause of a problem r a problem.	vsis portion here lo formance and efformance and r ather than what r	ooks at the b ectiveness ar nay only be t	ig picture for an nd identifies the the apparent ca	ny actual use of	
If corrective action is implemented. Once CASS begins.	a corrective action	tive action p n plan is imp	lan is created a lemented, step	nd 4 of	9 22 14
followed. This step a CASS never stops the name: Continuing Ar	actually leads righ e cycle of analysis nalysis and Surveil	t back into S and surveilla llance.	tep 1, surveillar	nce.	э, ру. 1т
Let's take a look at 3 an operator's CASS.	types of monitori	ing you are li	kely to see as r)art of	
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	LESSON PLAN	CONTINUATION			
LESSON TITLE	Introduction to RII, CASS, and Reliability Programs	PRINT DATE	01/05/2004	PAGE	21

SUBJECT OUTLINE	NOTES
Long-term monitoring is used to identify trend-related information in operational data. Examples of operational data used in this monitoring include:	A
Pilot reports	
Tear down reports	,
Deferred Minimum Equipment List (MEL) items	
Now that you have seen some basics about CASS, let's take a look at	
your responsibilities as they relate to CASS.	
ASI Responsibilities - CASS	
	SL-03-15
ASI Pernonsibilities - CASS	
ASI Responsibilities - CASS	Click where indicated
◆Guidance	slide.
◆8300.10, Vol. 2, Ch. 65 & Vol. 3, Ch. 37	
♦Monitor or Evaluate CASS	
Our contractors Collaboration with operator	
Conduction with other ASIs	
SI 02.15	
There are two pieces of guidance available to you as you work with	A
operators and their CASS. Guidance for evaluating proposed CASS or	
revisions can be found in 8300.10, Vol. 2, Ch. 65, and guidance for monitoring existing CASS can be found in 8300.10, Vol. 3, Ch. 37	
Your primary responsibilities with CASS will be monitoring existing CASS	
existing CASS, you will make sure the operator is following their plan	
and either does not need to make any revisions or that any revisions	
that was made are presented into for the measure where we was to be	

that were made are appropriate for the program. When you evaluate proposals or revisions for CASS, you will be verifying that everything required by regulations is included in the program. LESSON TITLE

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Introduction to RII, CASS, and Reliability Programs

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Practical Exercise: CASS Evaluation Exercise	Press "B" on keyboard to blackout screen for exercise.
At the back of your CASS lesson tab is an exercise labeled PE-03-02, CASS Evaluation Exercise. Please take it out at this time.	PE-03-02 Make sure everyone has the exercise out
This exercise is designed to give you practice evaluating operator CASS programs. The exercise contains a proposed CASS for IFLYSAFE Airways. Working with a partner and using the attached materials (pages 2-9) and Order 8300.10, Vol. 2, Ch. 65, answer the questions about the submission. You will	Allow 30 minutes for this exercise.
have 30 minutes to finish this exercise. We will discuss your findings when everyone has finished.	
IFLYSAFE Airways – Proposed CASS	
For the purpose of this exercise, all documentation referred to in the plan and not provided is accurate, complete, and meets the intent of the regulations regarding the information contained in the submitted plan.	
Now that you have finished, let's see what you came up with.	Allow students time to answer questions.
	Location of answers highlighted in instructor copy of exercise.
Question #1	
Question: According to the CASS Written Procedures, where can specific procedures for root cause and systems analysis be found?	
Answer: They can be found in the Appendix to the CASS manual.	
Question #2	
Question: Who has authority for CASS?	
Answer: This information has not been provided.	

	LESSON PLAN (CONTINUATION			
LESSON TITLE	Introduction to RII, CASS, and Reliability Programs	PRINT DATE	01/05/2004	PAGE	25
	SUBJECT OUTLINE	<u> </u>	······································	NOTES	
RELIABIL	ITY PROGRAMS				
Reliability F operating e they are op They are a paragraph	Programs are an optional means for experience to established maintenan otional, not every operator will have pproved by the FAA and issued as p D76.	operators to a controls. a reliability part their Op	o relate Because program. Specs under	AC 120-17	
				SL-03-16	
	Reliability Program	ms			
	Establish standards for intervalue between overhauls, inspection checks	als ns, and			
	 Identify reduced life of parts increased repair needs 	or			
	SI-03-16	• :			
Basically, re time limitat overhauls, appliances, reliability p	eliability programs are meant to help ions or standards for determining in inspections, and checks of airframes and emergency equipment. The in rograms can be used to help determ	p the operat itervals betw s, engines, p iformation g nine the effe	tor establish ween propellers, athered in activeness of	8300.10, Vo	ol. 2, Ch.

Reliability programs can also be used to extend or reduce the life of parts or the time between inspections. This is referred to as "escalation" or "de-escalation."

Let's take a look at what references are available for you about Reliability Programs.









Parts borrowing refers to a Part 121 or Part 135 (10 or more) operator being allowed to borrow a part from another Operator. Operator A can borrow a part from Operator B that is beyond the overhaul time for Operator A. This is authorized by OpSpecs D83.

There are a couple of limitations to keep in mind regarding parts borrowing. First, the borrowed part must have a minimum of 200 hours or 100 landings (whichever is appropriate) remaining before service or overhaul in the lender's program. The borrowing operator can only use the part for 100 hours or 50 landings.

Second, if the borrowed part is a life-limited part, the part may not be operated past its life limit.

While it's not likely that you will have to deal with parts borrowing very often, there is guidance for you in 8300.10, Vol. 2, Ch. 87.

In addition to parts borrowing, you may also have to deal with parts pooling agreements for Part 121 operators.


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Introduction to RII, CASS, and Reliability Programs	PRINT DATE	01/05/2004	PAGE	

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SUBJECT OUTLINE	NOTES
The next topic we looked at was Parts Borrowing. The important the terms of the important the remember about this is that an operator cannot borrow parts with higher time since overhaul unless they have been issued OpSpecs I	hing th a D83.
The final topic we looked at was Parts Pooling Agreements.	
Question: Which operators can enter into parts pooling agreements?	
Answer: Only Part 121 operators operating outside the U.S enter into parts pooling agreements.	s. can
It is important to remember that the parts in the pool must meet th standards for all parties in the agreement.	ie
Question: Are there any questions before we move on to the next lesson on manuals?	he Address any participant questions.

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LESSON PLAN COVER SHEET

Routing Symbol:	AFS-500				
Course No. and Name:	21055 - Air Carrier Airworthiness Indoctrination				
	Introduction to RII, CASS, and Reliability				
n Number:	03				
Date Completed:	11/25/2003				
in a the bours):	3				

Lesson Overview:

This lesson provides basic knowledge of the continuous almorthiness maintenance program, Continuing Analysis and Surveillance Systems (CASS), Reliability Programs, and Required Inspection Items (RII).

Instructor References:

 AC 120-16 (as revised)

 14 CFR Part 135 Subpart J

 14 CFR Part 145, §145,157

 15 CFR Part 145, §145,157

 16 CFR Part 145, §145,157

 17 CFR Part 145, §145,157

 18 CFR Part 145, §145,157

 19 CFR Part 145, §145,157

 10 CFR Part 145, §145,157

 11 CFR Part 145, §145,157

 11 CFR Part 145, §145,157

 12 CFR Part 145, §145,157

 13 CFR Part 145, §145,157

 14 CFR Part 145, §145,157

 15 CFR Part 145, §145,157

 16 CFR Part 145, §145,157

 17 CFR Part 145, §145,157

 18 CFR Part 145, §145,157

 19 CFR Part 145, §145,157

 10 CFR Part 145,157

AC 120-79 (as revised) AC 129-4 (as revised) Flight Standards Strategic Plan Goals FY 2003-2008

Missal Numbers and Comments:

Sides: SL-03-01 through SL-03-24

Handouts:

	****	. Applicable References	for RII, CASS, 8	Reliability Programs
				CASS Flowcharts
DE-03-01				RII Practice Exercise
p=_02.07			CAS	S Evaluation Exercise
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Computer File Names:

Lesson Plan

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LP-03-AC-CASS

SL-03-CASS-Instructor.pps

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	Programs	UKII, LASS, and	Reliability	PRINT DATE	01/05/2004	PAGE	3	
LESSON O	BIECTIVE	SUBJ	ECT OUTLINE					
EV the end a	SECTIVES					NOTES		
	Di this lesson,	you will be	able to:				· · · ·	
	Le	esson Ob	iectives			SL-03-2		
) Artiset	By the end o	of this loss-						
	*Research k	ev regulation	you will be	e able to:				
	RII and CA	SS	is and guid	ance for				
	*Evaluate an	operator's P	RII procedu	res				
	• Lvaluate an	operator's C	ASS progra	am	84			
l.								
	SL-03-2							
Research ke	V regulations			No.				
 Evaluate an 	Operator/o pro	and guidanc	e for RII a	and CASS	~			
* Evaluate an	ODerstavia C M	procedures						
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	LESSON PLAN	CONTINUATION			
	Introduction to RII, CASS, and Reliability Programs	PRINT DATE	01/05/2004	PAGE	4
		~ <u>~</u> ~			
Secon Or	SUBJECT OUTLIN	<u> </u>		NOTES	
V	ERVIEW		÷.	}	
Tt reach the	se objectives, we will be discussi	ng the follow	ing topics:		
i sa Kuza				SL-03-3	•
12 ⁻¹ -	l esson Overvie		· · · · · · · · · · · · · · · · · · ·		
		. V V			***
	*Overview of Continuous Airworth	niness			
	 Required Inspection Items (RII) 				
	* Continuing Analysis & Surveillan	ce Systems			
	(CASS)				
	Kenability Programs Short-term Escalation				
	*Parts Borrowing				
	*Parts Pooling Agreements				
	5. 503-3				
		Maintonan	CO Programs		
- Sasic ove					
 Recuired 	Inspection Items (RII)				1
مەر يەركى يېڭ مور يەرىيەت	g Analysis & Surveillance System	is (CASS)			•
· Reliability	Programs		Antiput United and a	ð.	. S
• Short-ter	m Escalation				
· Parts Bor	rowing				
Perfs Poo	bling Agreements				
					•
There is a h	andout titled HQ-03-01, Applic	able Refere	nces for RI	I, HO-03-01	
0106. <u>9</u> Re	iability Programs, in the Less	on 3 tab of y	our Participal	nt Direct	
in in the states	contains a list of references that	are available	etor RII, CAS	3, participants	to
Billosies constance	ty programs. The references for		hirs ale	Guide.	rarticipa
Lect get sta	rted with a look at the basics of a	continuous a	irworthiness		
maintenance	e programs.				
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LESSON PLAN CONTINUATION





port on of a continuous airworthiness maintenance program along with

CASS and Reliability programs.

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	LESSON PLA	N CONTINUATION			
LESSON TITLE	Introduction to RII, CASS, and Reliability Programs	PRINT DATE	01/05/2004	PAGE	6
	SUBJECT OUTLIN	VE		NOTEC	
Let's look at	RII first.	······································	• • • • • • • • • • • • • • • • • • • 	NOTES	
REQUIRED	INSPECTION ITEMS (RII)				
Required Ins 121 and Part	spection Items are part of mainte t 135 (10 or more) operators.	nance progra	ms for all Pa	irt 🕴 👘	
	Required Inspection) Items		SL-03-5	
	Basics				
	Maintenance and alteration a critical to airworthiness of airworthiness	items ircraft			· .
	Identified by operator				
	 Inspection of maintenance, 	not aircraft			
	5.				
Rendred Ins	pection Items (RII) are those ma	intenance an	d alteration.	§121.369 (b)(2)
items on an	aircraft that could endanger the s	safe operation	n of an aircra	aft §135.427 (b)(2)
for identifyin	g their own RII, but the PI appro	ives the items	to ensure		
ھي محديث آندا ٿي. ھي محديث	maintenance items you would fir	nd designated	as an RII a	re	
	nent of a control surface or the in Original Equipment Manufacturer	stallation of a	propeller of	r	2
suggested lis	st of RII that the operator may ch	noose to follow			
in portant	t point to keep in mind is that RII	l relates to th	e inspection		
of maintenar	nce rather than inspection of the	aircraft. This	is because		
reduce the a	invorthiness of the aircraft.		and severely		
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LESSON PLAN	CONTINUATION			
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	 E			<u></u>
	LESSON PLAN Introduction to RII, CASS, and Reliability Programs SUBJECT OUTLIN	LESSON PLAN CONTINUATION Introduction to RII, CASS, and Reliability PRINT DATE Programs SUBJECT OUTLINE	LESSON PLAN CONTINUATION Introduction to RII, CASS, and Reliability PRINT DATE 01/05/2004 Programs SUBJECT OUTLINE	LESSON PLAN CONTINUATION Introduction to RII, CASS, and Reliability PRINT DATE 01/05/2004 PAGE Programs SUBJECT OUTLINE NOTES

Question: Why might it be necessary to have these

requirements for required item inspection personnel?

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Answer: Possible answers include: Prevents just any operator employee from inspecting the maintenance work §121.371. Prevents maintenance personnel from signing off on own work and potentially missing a problem Provides another set of eyes on the main performed Ensures that operator knows exactly who is responsible for specific inspections Allows inspectors to work without pressure from the maintenance manager to sign off maintenance an incugin an operator is ultimately responsible for the inspection of

are allowed to have the inspections performed through outside compactors. Let's take a look at how contractors fit into RIM

NOTES **P** Designed to

generate discussion on previous question.

These are tied to





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Programs	S, and Reliability	PRIN

aspections:

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	PRINT DATE	01/05/2004	PAGE	11
SUBJECT OUTLINE			Norma	
RII Countermand Hiera	archy		SL-03-9	
Mailtenser Adheimendre Coning			§§121.369 (b) 135.427 (b)(8	(8) and)
Skrated Decision				
Countermand Hierarchy shows the counter	mand prod	Cess of RII	•	· .

- Once an inspector evaluates an RII, the inspector's supervisors can evaluate, and decide to countermand, the inspector's decision,
 - also person at the level of administrative control may also and decide to countermand, the RII inspector's decision.

other persons can countermand an RII inspector's decision, except spector's supervisor and a person at the level of maintenance acministrative control.

Let's take a look at your responsibilities as they relate to RIL



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	Introduction to RII, CASS Programs	LESSON PLÁN C	ONTINUATION PRINT DATE				Ø 014
				01/05/2004	PAGE	13	
Sur Nor See	monitoring an ovi	SUBJECT OUTLINE					
 e) resent a mayou may have e) Unauthorize f) here is no f) Countermand Contract persitival nec/qualificated re Question: 	monitoring an exis program, it is likely is alor portion of the in- are: d personnel are per- specific training for d procedures are no connel performing re- ied/authorized/certi- pair stations in Part <i>Are there any que</i> an exercise.	SUBJECT OUTLINE ting continuous that problems (in hispection, Exar forming required RII personnel phexistent or ins equired inspection ficated (except 145 Subpart C) estions about RI	airvorthing indings) with indings) with indings of the ed inspection officient ans are not at foreign I at this tim	ess ith RII will e findings ms t property te?	NOTES 8300.10, Vol 36 9 \$121.378 (a) \$145.157 Address any participant questi Press "B" on keybo blackout screen kercise.	13 I. 3, Ch.	
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LESSON PLAN CONTINUATION

LE ISON TITLE Introduction to RII, CASS, and Reliability PRINT DATE 01/05/2004 PAGE 14 Programs SUBJECT OUTLINE NOTES Fractice Exercise: RII Practice Exercise At the back of the RII/CASS/Reliability lesson, there is an exercise titled PE-03-01, RII Practice Exercise. Please take it out at this time. Make sure everyone has the exercise out before continuing. This exercise is designed to give you practice evaluating an operator's Ref. Allow 15 minutes for procedures and information. Using the materials listed below and included with this exercise. exercise, work in pairs to answer the following questions as completely as You will have 15 minutes to complete this exercise. We will discuss your findings when everyone has finished. Semario: You are conducting a review of an operator's RII documentation and reduces. Among the materials he has provided you are the list of personnel conduct required inspections, maintenance records for some of his , currermand procedures, and the list of required inspection items. New that everyone has finished, let's discuss your findings Allow participants time to answer questions. Question #1 Question: Are there any discrepancies with the list of authorized inspection personnel? If so, what are they? Answer: Yes. There is no list of inspections that Jill White is authorized to perform. Question: What regulation did you base your answer on? Answer: §121.371 Question #2 Question: Are there any discrepancies with the sample maintenance records? If so, what are they?

Yes. Joe Brown performed the maintenance and inspected the work for repair dated 12/19/2002. This is not allowed by regulation. Also, the General Maintenance Manager countermanded the findings on repair dated 2/03/2003. This is not allowed according to regulation and countermand procedures.

Question: What regulation did you base your answer on?

Answer: §121.369

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PAGE

NOTES

Ouestion #3

Duescion: Are there any discrepancies with the countermand procedures provided by the operator on page 4 of this exercise? If so, what are they?

SUBJECT OUTLINE

Answer: No. There are no discrepancies.

Question: What regulation did you base your answer on

Answer: §121.369

Ouestion #4

Question: Are there any discrepancies with the list of required inspection items? If so, what are they?

Answer: Yes. Engines are required by regulation and should be inspected after maintenance.

Ouestion: What regulation did you base your answer on?

Answer: No specific regulation addresses this, but §121.369 is applicable.

Objection #5

information, and the regulations and guidance, what does the operator need to do for their RII procedures and program?

Answer: Based on the answers above and the information provided, the operator needs to review, revise, and correct their required inspection procedures and documentation. Failure to do so could lead to enforcement action.

Question: Are there any questions about the exercise?

Question: Are there any questions about Required Inspection Items?

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Address any participant questions.

Press "B" on keyboard to return to slide presentation. .

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	Introduction to RII, CASS, and Reliability PRINT DATE 01/05/2004 Programs	PAGE 16	
	SUBJECT OUT? INF		
ONTINUIN	ANALYSTS & SUDVETLLANCE SYSTEMS (CASE)	NOIES	
	CASS)	}	
ontinuing An od correct ar	alysis & Surveillance Systems (CASS) are used to monitor	AC 120-79	
ograms.	iy denciencies in an operator's inspection and maintenance		
		CL 00.44	
	Continuing Analysis 8	SL-03-11	,
	Conditility Analysis &		
	Surveinance Systems (CASS)		
	*Monitor performance & effectiveness of		
	*Questions Answered		
	Producing consistently airworthy aircraft?		
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	S-63-11		
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the very ba	sic level, CASS monitors the performance and		
Sectiveness (of an operator's inspection and maintenance programs.	•	
	5. UT/GTUTUT EUSAAN METARE ETRETTAREN SKEARTE METARA AN DELIEMEN.		
s programs t	to meet changing conditions of his overall operation.		
s programs t S can also	to meet changing conditions of his overall operation.		•
s programs t SS can also cration to h	to meet changing conditions of his overall operation. be used to monitor other activities within an operator's elp determine how those activities affect the operator's		•
is programs t S programs t S can also reaction to h ograms.	to meet changing conditions of his overall operation. be used to monitor other activities within an operator's elp determine how those activities affect the operator's		
is programs t SS can also retation to h ograms.	to meet changing conditions of his overall operation. be used to monitor other activities within an operator's elp determine how those activities affect the operator's		
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the back of	to meet changing conditions of his overall operation. be used to monitor other activities within an operator's elp determine how those activities affect the operator's Lesson 3 in your Participant Guide is HQ-03-02, CASS Please take it out at this time.	HO-03-02 Direct	
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Corrective action is when final root cause analysis takes place and a corrective action plan is finalized and implemented. This step happens performance and effectiveness portions of CASS. Root cause analysis is not the same as the analysis that takes place in step 2

The root cause analysis portion here looks at the big picture for any relation between performance and effectiveness and identifies the actual cause of a problem rather than what may only be the apparent cause of a problem.

Torrective action is needed, a corrective action plan is created and implemented. Once a corrective action plan is implemented, step 4 of CISS begins.

Step 4 involves monitoring the corrective action and verifying that it is followed. This step actually leads right back into Step 1, surveillance. CASS never stops the cycle of analysis and surveillance. Hence the name: Continuing Analysis and Surveillance. AC 120-79, pg. 14

Let's take a look at 3 types of monitoring you are likely to see as part of





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Regardless of whether you are monitoring or evaluating, one area that the peed to pay attention to is the use of contractors. While operators may be allowed to use contractors, the operator is still responsible for meeting CASS requirements. Contract organizations are allowed to collect data, make recommendations, perform audits, and report information to the operator provided the contract organization follows appreciator's procedures.

During your review, make sure that any contractor involvement is carefully spelled out in their outsourcing criteria in the Continuous Airworthiness Maintenance Program and that the operator has contracted by for identifying deficiencies and implementing corrective actions.

Another responsibility you may have is to collaborate with the operator as they develop their CASS. This does not mean that you will be developing the CASS for the operator. The assistance you provide the operator should be in the form of guidance regarding what is required to meet the regulatory standard for CASS.

Chair in note that needs to be made here is the need for coordination between airworthiness ASIs and other inspectors assigned to the operator. As with most maintenance related issues, you will need to coordinate with other inspectors assigned to the operator to coordinate wit

Question: Are there any questions before we get some practice reviewing an operator's CASS?

Flight Standards Strategic Plan Goals

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Introduction to RII, CASS, and Reliability PRINT DATE 01/05/2004 PAGE 23 Programs SUBJECT OUTLINE NOTES Practical Exercise: CASS Evaluation Exercise Press "B" on keyboard to blackout screen for exercise. the back of your CASS lesson tab is an exercise labeled PE-03-02, CASS PE-03-02 anation Exercise. Please take it out at this time. Make sure everyone has the exercise out before continuing This exercise is designed to give you practice evaluating operator CASS Divide class into pairs, The exercise contains a proposed CASS for ILLYSAFE Airways and Ord Allow 30 minutes for 5300.10, Vol. 2, Ch. 65, answer the questions about the submission. You will this exercise. have 30 minutes to finish this exercise. We will discuss your findings when menome has finished. Airways - Proposed CASS For the purpose of this exercise, all documentation referred to in the plan and not provided is accurate, complete, and meets the intent of the regulations regarding the information contained in the submitted plan. Note that you have finished, let's see what you came up with. Allow students time to answer questions. Location of answers highlighted in instructor copy of exercise. Ducistion #1 Question: According to the CASS Written Procedures, where can specific procedures for root cause and systems analysis be found? Answer: They can be found in the Appendix to the CASS manual. .reition **#2** Question: Who has authority for CASS? Answer: This information has not been provided.

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Question #3

Question: Who has responsibility for final root cause analysis?

Answer: The managers of the technical areas affected.

Question #4

Question: Are there any discrepancies between the proposed plan and the provided process flow?

Answer: Audit results are passed to CASS manager and CASS board before being sent to affected department.

Conclusion

Question: Based on the above questions, proposed CASS, 3300.10 guidance, and regulations, what is your finding regarding the submitted CASS?

Answer: There are discrepancies in between pieces of information in the program and information is missing. The program needs to be revised to address these issues and then resubmitted.

Question: Are there any questions about this exercise?

Question: Are there any questions about this Continuing Analysis and Surveillance Systems?

Let's take a brief look at Reliability Programs now.

Address any participant questions.

Press "B" on keyboard to return to slide presentation.

Address any participant questions.

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Serformanc	e standards" in Reliability refers t	o the level of	f performance	A		· · ·
n Taliures in	a given time period or the numb	Criteria such	as the number			
period of tin	e. These time periods may be fr	er or delays i Nord in an on	n a given Arator's time	}.		
control inde	x if they have one.	and in all op		{		
		ų.	AND NO.			
in the significant	and reports address have balls his	ALLER				
nn asented fo	and reports address now Reliability either analysis or decision-maki	ity date is or	ganized and		.*	
	i citrer analysis of decision-maki		analysis.			
		N			-	
30 06101	interval adjustment refers to the	operator's a	bility to adjust			
	ween inspection, maintenance, or	overhaul as	the result of	1.00		
Reliability fir	iaings.					
				} .		

Reliability Program revision only refers to revisions made to the Reliability Program. An operator should have a defined procedure for making revisions to the program.

Program as a whole and are all followed during the surveillance and analysis steps of verifying the effectiveness of inspection and maintenance programs.

and the allook at your responsibilities as they relate to reliability arourams.

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	siduaties - Reliability			
44			SL-03-19	
	ASI Responsibility - Re	eliability		
	 Guidance 68300.10, Vol. 2, Ch. 66 & 67 68300.10, Vol. 3, Ch. 38 			
	*Approve and Monitor			
	SL-03-19			,
You will find (You 2, Ch. 66	guidance for working with reliabili 5 and 67 and Vol. 3, Ch. 38:4	ty programs in 8300.10,		
an initial subr revision to an information d	work with reliability programs, yo mission, monitoring an existing pro existing program. You may rece uring your OJT and through other	ou will either be approving ogram, or approving a ive more specific courses you may attend		44 1
Ques up to	tion: Are there any questions about this point?	out Reliability programs	Address any participant o	uestions.

Short-term escalation may be found in a Reliability Program. Let's take a look at short-term escalation news

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		7		SL-03-21	
	Short-term Escala	tion	10.9° 12.0		· .
	Cannot Exceed				
	* AD specified intervals			AC 129-4,	Par. 13
Ţ	* Life limits	r.			
	* MEL/CDL limitations				
	* MRB required structural sample	ing periods			
	Option (OpSpecs D76 or Reliabilit	<u>(v):</u>			
	*10% or 500 hours (unless FAA	approved)			
	S-03-21				•
The limitatio	ons listed here are all time or cycle	liniterate		4	
precedence	over short-term escalations. At no	time may a	short-term		
escalation re	esult in exceeding:		ι.		•
 Intervals 	specified in FAA Airworthiness Din	ectives	and the second		
Life Limit	rs 🕺				· · ·
 Limitation 	ns specified by Minimum Equipmer	nt Lists or Co	infiguration	• • •	·
Deviation	Lists				
 Structura 	I sampling periods imposed by MR	B (Maintena	nce Reliability		. ,
-0 8rg)					
The next lim	itation is that no short-term escala	tion can exa	eed 10% of	A	
without indiv	vidual FAA approval. This is true a	ice (or equiv	alent cycles)	-	
been issued	OpSpec D76 or an approved Reliat	ventratie op vility Phogram	eratorias n.	}	
While you ma	av not work with short-term escala	itions in the	Deer future		
or on a regul	ar basis, there are a few considera	tions you sh	iould know		
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Programs

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participant questions.

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this lesson before we wrap up the lesson?

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this slide.

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- Overview of Continuous Airworthiness Maintenance Programs
 Required Inspection Items (RII)
- *Continuing Analysis & Surveillance Systems (CASS)
- Reliability Programs
- Short-term Escalation
- Parts Borrowing
- Parts Pooling Agreements

5**1.-03-25**

With continuous alrworthiness maintenance programs, I gave you a mose and a brief discussion about the elements of Continuous cess Maintenance Programs. We then talked about RM

During our discussion of RII, we looked at regulatory requirements and some of the concerns with using a contractor for RII. Basically, the concerns were to make sure the contractor and operator are following all of the operator's RII requirements. We then discussed the purpose and importance of countermand procedures.

Question: What is the purpose of countermand procedures?

Answer: Prevent release of unairworthy repairs and allow release of airworthy repairs.

After RII, we discussed the basics of Continuing Analysis & Surveillance Surveil (CASS).

We began with a discussion of the basics of CASS and said that the purpose of CASS is to answer 2 questions.

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manuals and procedures?

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Question: What questions does CASS answer?		1		
Answer:		÷. •		
1. Is the operator following their inspection and maintenance				

2. By following those procedures, is the operator consistently producing airworthy aircraft?

an identified the 4 basic steps of CASS as being surveillance, s a corrective action, and follow-up. We finished up this section a look at 3 ways to monitor mechanical performance and an exercise.

The next topic in this lesson was Reliability Programs where I very briefly explained the elements of a Reliability Program. The important points you need to remember about Reliability Programs are:

- 1. Reliability programs are not required by regulation. They are strictly optional
- 2. Reliability programs are not the same as CASS.

We then took a quick look at short-term escalations. Remember, if an operator has not been issued OpSpecs D76 or does not have an FAA and over Reliability program, they must get approval prior to mo ementing short-term escalation for a parts

Oversion: What time or cycle limits cannot be exceeded by escalations?

Answer:

- Intervals specified in FAA Airworthiness Directives
- Life Limits
- Limitations specified by Minimum Equipment Lists or Configuration Deviation Lists
- Structural sampling periods imposed by MRB

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The next top to remember higher time (ic we looked at was Parts Borrow r about this is that an operator ca since overhaul unless they have b	ing. The im nnot borrow een issued (portant thing parts with a DpSpecs D83.	ð		
The final top Ques agree	nic we looked at was Parts Pooling s tion: Which operators can enter ements?	Agreement	s: ooting	Ð		
Answ enter	ver: Only Part 121 operators ope into parts pooling agreements.	rating outsid	le the U.S. ca			
It is importa standards fo	nt to remember that the parts in r all parties in the agreement.	the pool mus	t meet the		• •	·
Ques	stion: Are there any questions be	efore we mo	ve on to the	Address a	iny	÷
next	lesson on manuals?	C.F.	1 ⁹	participar	it questions.	
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