



INSTRUCTIONS AND GUIDELINES

Air Cargo - Sampling Program Design

July 2010

This Instruction & Guideline refers to Practice Statement:

Air Cargo Intervention PS 2010/65

Published date:	16 November 2010
Availability:	Internal and External
Subject:	Air Cargo - Sampling Program Design
Purpose:	This Instruction and Guideline sets out the process for the defining the sample size, stratification, sample procedure and validation for the Sampling Program in the import air cargo environment.
Owner:	National Director Cargo
Category:	Operational Procedures
Contact:	Director Cargo Intervention Strategies

The electronic version published on the intranet is the current Instruction and Guideline.

Summary of main points:

- *Definitions*
- *Sample Size*
- *Stratification*
- *Sample Procedure*
- *Review / External Validation*
- Related Policies

This I&G applies to staff in:

- Cargo Division who develop or evaluate the air cargo sampling program; and
- Other Divisions, where those staff have a role developing or evaluating the air cargo sampling program.

Introduction

Customs and Border Protection employs an intelligence-led risk-based approach to cargo intervention. This approach comprises four key activities:

- Targeted Examinations
- Campaigns
- Coverage
- Sampling

Sampling is a core activity of any intelligence-led risk-based approach as it identifies background leakage in the environment and builds a valid and representative picture of the risk across the specified cargo environment.

To ensure the sample program is statistically valid, sampling design must be conducted according to the procedure outlined in this I&G which is based on advice from the *Sampling Scheme for Inspecting Imported Air Cargo to Australia Report*, prepared by the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

The sampling program is required to be reviewed annually.

Definitions

Intervention: Customs and Border Protection use of any or all processes, including risk assessment, inspection and examination, in order to prevent the import or export of prohibited items and to control the movement of restricted items.

Inspection: Inspection may include the use of non-intrusive intervention through x-ray technology (static or mobile), trace particle detection, detector dogs or a physical examination of the cargo.

Examination: Physical examination of the cargo by a Customs and Border Protection officer.

Find or Detection: Any intervention result determined to be a breach of Customs related law at the time of examination, whether or not the matter is further actioned. (N.B. Even if the goods are declared correctly.)

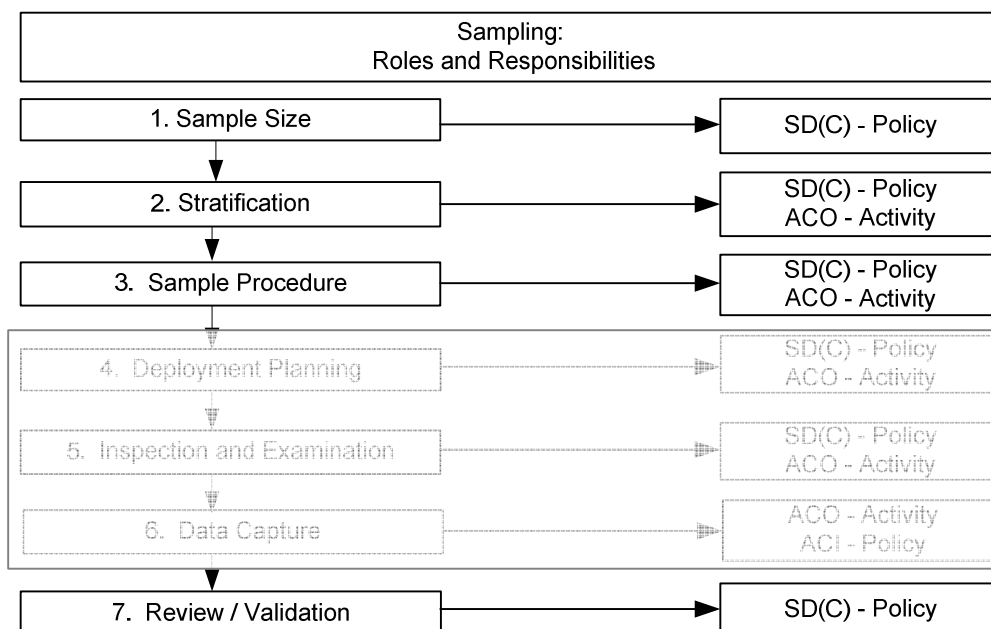
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Import Air Cargo Sampling Program

The design and delivery of the import air cargo sampling program consists of seven key processes. The policy and operational responsibility for these steps lies with different stakeholders, as outlined in the chart below and the section *Key Roles and Responsibilities*.

This Instruction and Guideline provides information on how to develop the sampling program and its review/validation (steps 1-3, and 7).



1. Sample Size

- 1.1. Strategic Development (Cargo) is responsible for determining the annual sample size in line with the process documented by the CSIRO in the report: *Sampling Scheme for Inspecting Imported Air Cargo to Australia* (the Report).
- 1.2. The Report contains a reference table for various sample sizes, depending on the selected total population size, estimated detection rate, and desired precision. If the required fields do not appear in the table, the formula provided in the Report may be used to determine the sample size.
- 1.3. In determining the estimated detection rate, reference should be made to the true detection rate from the results of the previous sample program or other available information.
- 1.4. In determining the desired precision, it is standard practice to adopt a precision level that is half the estimated detection rate, except where a higher level of confidence may be required. The Design Variables Associated Document provides more guidance on the selection of desired precision.

2. Stratification

- 2.1. Strategic Development (Cargo) is responsible for providing policy advice on the validity of stratification adopted for the sample program. Desired policy outcomes may impact on the selection of strata.
- 2.2. Air Cargo Operations (ACO) and Air Cargo Improvement (ACI) are responsible for identifying and applying the preferred strata for the sample program to determine allocation of the sample.
- 2.3. To ensure representative coverage of the population, the sample should be stratified proportionally by the volume of cargo each Region receives. Geographical considerations may result in some Regions stratifying their population by sub-regions (e.g. QLD may stratify population by Brisbane, Gold Coast and Cairns).
- 2.4. Where there is an intention for any part of the sample to be achieved without the use of holds, the sample population must be stratified by groupings of depots based on the proportion of cargo these groups receive. Within each strata, groupings of depots should treat all like depots the same.
- 2.5. The sample may be further stratified in each Region by other elements, provided like elements within a defined population are treated the same.
- 2.6. Stratification in one Region may differ from that in other Regions, which takes into account variable demographics within each region.

3. Sampling Procedure

- 3.1. ACO and ACI are responsible for determining the sampling procedure options for use in each strata. There are two sample procedure options available:
 - *Hold based, or*
 - *Random Depot Visitation.*

- 3.1.1. It is valid to use both approaches for separate strata, however, where the random depot visitation selection method is used for any strata, the sample population must be stratified by grouping depots (see paragraph 2.4).

3.2. Hold Based Sampling

- 3.2.1. Where the hold based sampling procedure is adopted for a strata, ACO are responsible for the ownership and creation of profiles to achieve random selection of cargo for the strata.
 - 3.2.2. Profiles must select the cargo either systematically (e.g. every sixteenth consignment reported) or randomly.
 - 3.2.3. Profiles should be designed to ensure that the selection of consignments is spread evenly across the year, and not concentrated in any one month, week or day.
 - 3.2.4. Profiles should also be designed to ensure that the selection of consignments is not systematically skewed, for example, only holding cargo on Mondays.

- 3.2.5. Profiles should be reviewed periodically to ensure efficient matching rates.

3.3. Random Depot Visitation

- 3.3.1. Where the random depot visitation procedure is adopted for any strata, ACO is responsible for determining the appropriate consignment inspection rate for each depot visit. In 2009-10, the consignment inspection rate for large depots in NSW and VIC was 500 consignments per visit.
- 3.3.2. It is valid for different strata to have different consignment inspection rates.
- 3.3.3. The National Cargo Planner is responsible for developing annual sampling visit schedules detailing the randomly selected licensed premises that require sampling visits during the year.
- 3.3.4. Visit schedules must be developed in line with the process documented by the CSIRO in the report: *Sampling Scheme for Inspecting Imported Air Cargo to Australia* (the Report). Detailed technical instructions relating to this process is contained in random depot visitation associated document.
- 3.3.5. The schedules must list visits by month, and include the target number of visits and required consignments per visit.
- 3.3.6. The National Cargo Planner is responsible for distribution of visit schedules (where required) to each Regional Planner.
- 3.3.7. The Regional Planners are responsible for notifying the National Cargo Planner of any changes to the licensed premises/depots in their region so that the program can be updated as required.

4. Deployment Planning

Refer to Sampling Program Delivey I&G.

5. Inspection and Examination Process

Refer to Sampling Program Delivey I&G.

6. Data Capture

Refer to Sampling Program Delivey I&G.

7. Review/Validation

- 7.1. Strategic Development (Cargo) Branch is responsible for liaising with internal and external parties to review or validate the sampling approach annually.
- 7.2. All policy queries related to the annual sampling approach should be directed to Strategic Development (Cargo).

Related Policies and References

Practice Statements:

- *Practice Statement* Air Cargo Intervention PS 2010/65

Other Instructions & Guidelines

- Air Cargo Sampling Program Delivery
- Air Cargo – Coverage Program
- Air Cargo – Procedures for the Inspection of Targeted Consignments (Alert/Profile Match or User Select)

Key Roles and Responsibilities

Major responsibilities are set out in the chart under *Import Air Cargo Sampling Program*.

These roles and responsibilities include:

- Strategic Development (Cargo) – policy advice for sampling program, annual sample size, and review and validation.
- Air Cargo Operations – implementation of annual sample program, including identification of stratification and selection process that align with operational considerations, annual visit plans or profile development, match evaluation (where required), deployment of inspection teams, sampling inspection and examinations, and data entry. Specific responsibilities within ACO rest with the National Cargo Planner and Regional Cargo Planners.
- Air Cargo Improvement – assist ACO implementation of annual sample program, including identification of stratification and selection process that align with operational considerations and performance reporting within the Air Cargo Monthly Report.

Sampling Delivery Policy Owner: National Director Cargo

Development Information Contact: National Manager Strategic Development (Cargo)

Consultation

External Consultation

- Commonwealth Scientific and Industrial Research Organisation (CSIRO)

Internal Consultation

- Air Cargo Operations
- Air Cargo Improvement
- Strategic Development (Cargo)
- Intelligence and Targeting Division
- Compliance Branch
- Corporate Performance Reporting

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Approval

Approved on	01 September 2010	
By	Raelene Vivian ND Cargo	
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