

Australian Government

Department of Agriculture, Fisheries and Forestry

# **2008–12 imported cargo processing** A DAFF time release study

Biosecurity

# DECEMBER 2012



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# 1 Summary

This study examines the time efficiency of the Department of Agriculture, Fisheries and Forestry's (DAFF's) intervention on imported cargo. Specifically, it investigates the referral-to-release and arrival-to-release times for imported items that are subject to the *Quarantine Act 1908*.

Referral-to-release time is the time elapsed between the referral of a consignment to DAFF and its subsequent release from quarantine. Arrival-to-release is the time elapsed between arrival and release from quarantine. Both these times are analysed for several business categories including compliance status, country of loading and declaration type. This document explains DAFF's process for imported cargo, why some commodities such as horticultural stock are subject to long processing times, and the importance of compliance for rapid processing.

DAFF is mindful of its responsibility to impede the free movement of goods as little as possible while protecting Australia's biological resources and markets. DAFF's activities represent a relatively small level of intervention in Australia's imports—about 18 per cent of total sea cargo imports and 4.9 per cent of imported air cargo were referred to DAFF in 2011–12.

# 1.1. Study findings

Although overall rates of referral have fallen, DAFF has experienced a 74 per cent increase in referred air cargo between 2008–09 and 2011–12 and referred sea cargo increasing by 14 per cent in the same period. Despite this, there have been significant and sustained improvements in median cargo release times each year since 2008–09.

The sea cargo median arrival-to-release time was 1.6 days in 2011–12, a 14 per cent improvement on the 2008–09 median of 1.9 days. The median arrival-

to-release time for 2011–12 air cargo was 1.5 hours, down 84 per cent from 9.7 hours in 2008–09 and due largely to electronic document sharing with express couriers. Sea cargo's median referral-to-release time was 3.0 days in 2011–12 and 4.3 hours for air cargo. From 2008–09 to 2011–12, median referral-to-release times for sea cargo improved by 28 per cent, and air cargo experienced a 78 per cent improvement in the same period.

DAFF's Automatic Entry Processing (AEP) scheme offered the fastest way to process cargo. The sea cargo median arrival-to-release time when using this scheme was –3.6 days in 2011–12, meaning that AEP enabled goods were released 3.6 days before they arrived.

The distribution of referral-to-release times was heavily skewed—most consignments were processed quickly but some took a long time, so averages are inflated. Seventy per cent of sea cargo and 82 per cent of air cargo was released in below average time in 2011–12.

Compliance with biosecurity requirements had a definite and significant effect on all release times (see Section 6 for more information on compliance). At 0.69 days in 2011–12, the median arrival-to-release time for compliant sea cargo was 16 times quicker than for noncompliant cargo. For compliant air cargo, the median arrival-to-release time of 1.2 hours was over 100 times quicker than for noncompliant cargo.

The most frequent physical inspections of 2011–12 sea cargo were rural tailgates, which were performed on over 9 per cent of referred consignments. Rural tailgates are inspections performed on cargo with a rural delivery address. An in-depth study of rural tailgates indicates that 90 per cent of the median on-hold time was spent waiting for goods to become available or for a space in commercial inspection facilities.

# 1.2. Improving efficiency

Improving efficiency means releasing consignments faster. Assuming that saved time results in tangible cost savings for both industry and government, the best way forward is:

- for importers to ensure that consignments are compliant with biosecurity requirements
- wherever possible, to minimise unpacking by separating goods that have mandatory inspection or treatment requirements from those that can be assessed on documentation alone
- for DAFF to reduce the referral of consistently compliant consignments by reviewing its risk based profiling
- for DAFF to release more consignments before goods arrive by improving levels of compliance.

The data show that the quickest way for lower risk cargo to be released is to use DAFF's AEP scheme for goods that are not subject to quarantine. For more information on the AEP scheme see the **DAFF website**. Using this scheme, the median arrival-to-release time for sea cargo was –3.6 days in 2011–12, which means goods were released 3.6 days before arrival, obviating any need for additional demurrage and other supply chain costs.

The AEP scheme allows accredited importers and brokers to direct consignments without needing to send documents to DAFF and have biosecurity officers process the cargo. Scheme-accredited persons can assess documents for commodity concerns on behalf of DAFF and can choose the treatments or inspections as needed. New vehicle tyres are frequently imported under automatic entry processing. For details of which commodities are eligible for automatic entry processing see the **Process and outcomes document** on the DAFF website.

The next quickest releases are those lower risk goods that are processed on documentation alone and in a single check. Over 60 per cent of air cargo consignments were released in this way in 2011–12 and there has been a steady increase in this type of release since 2008–09. In 2011–12 sea consignments cleared on documents were released a median 2.0 days before arrival. Similar air cargo consignments saw a median referral-to-release time of 1.2 hours. Please note, however, that some commodities may not be eligible to for clearance on documentation alone as they are subject to mandatory intervention.

Compliance has a significant effect on release times; for example, compliant air cargo was released 100 times quicker in 2011–12 than noncompliant air cargo. Encouraging compliance levels in referred cargo will result in quicker, more predictable release times and reduced effort and expenditure.

# 1.3. Bottlenecks

The data suggest that bottlenecks occur whenever cargo requires some form of physical handling, typically inspection or treatment such as fumigation. The most frequent types of sea cargo inspection were rural tailgates and unpacking, which respectively made up 28 per cent and 27 per cent of all sea cargo inspections in 2011–12.

As these two inspection types make up over half of all the inspections performed in 2011–12, any improvement in them is likely to offer the best efficiency gains for goods held after arrival. Assuming biosecurity risk can be managed to the same degree, minimising the number of unpacks and rural tailgates through improved management is likely to yield the largest tangible economic benefits. For industry, making sure goods that require inspection are separated from other imports will improve efficiency and reduce the number of consignments delayed at the border.

An in-depth study of rural tailgates (see Section 10) indicates that approximately 90 per cent of the median time spent on hold is typically spent waiting for goods or commercial inspection facilities to become available. Although additional analysis of local circumstances is encouraged, the study indicates that improving on-wharf handling times would have the largest positive effect on rural tailgate durations.

# 2 Context

A core outcome for DAFF is to protect Australia's agriculture, trade and environment from pests, weeds and diseases that can enter the country with imported cargo. To prevent this occurring, DAFF works in partnership with the Australian Customs and Border Protection Service which refers consignments to DAFF when there is reason to believe they contain goods or packaging that could be a biosecurity risk. DAFF assesses the risk posed by each individual consignment and may intervene to stop or mitigate any risks before releasing the goods.

Most referrals are made automatically based on the importation documents supplied to Customs and Border Protection. An overview of this process is shown in Figure 1. In these cases, the referral record is an electronic message sent between Customs and Border Protection and DAFF's computer systems which marks the start of DAFF's imported cargo process. Once referred, the consignment is placed on-hold for biosecurity purposes until DAFF's processing is complete.

The process is more intricate than this overview suggests but the simplification is adequate to understand the findings and method of this study. To summarise, the DAFF process starts with an automatic message from the Customs and Border Protection's computer system, ICS, and ends with a completion message sent back from DAFF's computer system.

An exception to this automated referral occurs when a biosecurity officer has reason to believe that goods may hold a biosecurity risk that is not apparent from importation paperwork. In this situation the referral process is reversed so that a message is sent to Customs and Border Protection from DAFF.

In all cases, when a consignment is released an electronic message is sent to Customs and Border Protection informing them that all biosecurity activities are complete and that normal processing can continue.



### FIGURE 1 Simplified Customs and Border Protection and DAFF imported cargo processing

Conceptually, the biosecurity process, shown as box ① in Figure 1, is a consecutive sequence of events each of which are called cargo directions. In almost every case, the first direction is a check of the consignment's import declaration and its supporting documents such as the import permit, fumigation certificate and packing declaration. In most cases, the consignment is released if these are found to be satisfactory which is by far the most common outcome for imported cargo referred to DAFF and as shown in detail in Section 9 of this document.

On occasion, document checks may lead to further follow-up events. For example, after checking documents, the biosecurity officer may decide that an inspection or treatment of some kind is required before release. In extremely rare cases, and with the consent of the importer, a consignment might be destroyed or exported to eliminate any biosecurity threat to Australia. The decision whether to export or destroy goods is typically made on financial grounds.

# 3 Scope

The study considers all import consignments arriving by air and sea from 1 July 2008 to 30 June 2012, inclusive. Specifically, it includes all consignments that were referred to DAFF for biosecurity assessment as defined by the Act and amounted to approximately 3.8 million consignments and 6.9 million cargo directions. All of these were extracted from DAFF's computer systems on 30 August 2012. Table 1 lists the study's scope inclusions and exclusions in more detail.

Scope item	Inclusions	Exclusions
Cargo directions	Imports	Exports
Geographical and administrative	All regions All ports All DAFF offices	None
Type of goods	All goods except foodstuffs defined in the <i>Imported</i> Food Control Act 1992	Foodstuffs considered by the Imported Food Inspection Scheme and as defined by the <i>Imported Food Control</i> <i>Act 1992</i>
Consignments	Consignments referred to DAFF by Customs and Border Protection	Consignments that were not finalised on 30 June 2012
	Consignments manually referred by biosecurity officers	Consignments that were significantly amended after lodgement a
	Commercial and non-commercial consignments	Consignment records unrelated to the importation of goods, e.g. bulk billing consignment records
Mode of transport	Air cargo	Post
	Sea cargo	Other, e.g. self-propelled, hand- carried or pipelined commodities
Type of cargo	Air straight-line	Accompanied personal effects, e.g.
	Air consolidated	checked-in luggage.
	Sea containerised	
	Sea break-bulk	
	Sea bulk	
Declaration type	Import declarations	Carnet releases
	Self-assessed clearance declarations (SACs)	Contingency releases
	Cargo report self-assessed clearance declarations (CRSACs)	Incoming passenger cards
	Unaccompanied personal effects	
	Manual entries created by biosecurity officers	

# TABLE 1 Summary of inclusions and exclusions for the study

a ICS major amendments.

# 3.1. Cargo directions

The term 'cargo direction' refers to an activity that DAFF applies to a consignment under the authority of the Act. Cargo directions can be thought of as the building blocks of DAFF's business process which follows a sequential chain of events from referral to release. For example, for a consignment that was subject to a documentation check, a physical inspection and a fumigation treatment, the check, inspection and fumigation are individual cargo directions.

TABLE 2 Examples of cargo directions Cargo direction Description Present valid phyto cert The phytosanitary certificate must be signed and validated by a government official unless other arrangements apply. LCL inspection Goods will be unpacked and available for inspection. Goods are to remain consignment intact until a biosecurity officer is present. Inspect (unpack) Goods to be unpacked and inspected at designated premise where goods are to remain consignment intact until a biosecurity officer is present. Cold storage -18 °C for 7 days Store at -18 °C for 7 consecutive days starting when the core temperature of the consignment reaches -18 °C. A core temperature of -18 °C must be maintained over 7 consecutive days. Tailgate (open door) and external container inspection required prior to rural delivery of Tailgate-rural destination the containers. H.T. -121 °C for 2 hours Heat treatment at 121 °C for 2 hours.

Table 2 shows some examples of the more than 350 cargo directions.

Although improving business efficiency can speed up many cargo directions, some are driven by natural underlying biological processes that cannot be altered without incurring unacceptable levels of risk. For example, ornamental fish must be held in quarantine for a minimum period to make sure there is no chance of a disease outbreak that might affect industry and Australia's fauna. Currently, the minimum quarantine period for imported live ornamental fish is 21 days for goldfish, 14 days for gouramis and seven days for marine fish.

Horticultural stock also requires a long process by biological necessity. For example, nursery stock roses must be kept in closed quarantine for a minimum of six months so they can be observed as they grow from an otherwise dormant state.

Full information for specific commodity conditions and quarantine times are published in the **import conditions database** (ICON), which is available on the DAFF website.

# 4 Method

The study was developed in three phases:

- 1. **Design**—a steering committee of DAFF executive and senior managers planned and designed the study. A reference group of subject matter experts reviewed the study and provided expert advice throughout its development. The reference group included industry and other government agency participants.
- 2. **Data extraction and analysis**—data were sourced from DAFF and Customs and Border Protection computer systems. Data were matched, aggregated and segmented by relevant business categories. The R programming language was used to validate, calculate and present statistics and figures shown in the study.
- 3. Engagement with stakeholders—technical and systems experts checked the data and findings as the study progressed. Members of the reference group validated and verified the accuracy of the findings based on their field experience. Interim results were presented at a number of forums and feedback sought on their clarity and relevance.

# 4.1 Core measures, units and statistics

**Consignments**—the study's measure of business volume, normally synonymous with an import declaration or self-assessed clearance document. Both DAFF and Customs and Border Protection use consignments as their normal identifying document and they are a natural unit of business for brokers and importers.

Alternative volume measures were considered for the study, including containers, twenty-foot equivalent units and consignment lines, but these are all used inconsistently across air and sea cargo.

**Arrival-to-release time**—a consignment's arrival-to-release time is the time a consignment spends on hold after its goods have arrived in the country. If goods are released before their arrival, the arrival-to-release time is negative.

**Referral-to-release time**—a consignment's referral-to-release time is the time elapsed between its referral to DAFF and its subsequent release; that is, the total duration a consignment spends on hold for biosecurity reasons.

Early document lodgement is a consideration for this measure. If a documentation check indicates that a consignment must be inspected, no progress can be made until the goods have arrived and, consequently, it is likely that the consignment's referral-to-release time will be lengthy. This often occurs for consignments that are subject to rural tailgate inspections and is investigated in more detail in Section 10.

**Units of time**—the study reports by financial year, in 24-hour days and in hours.

**Timing accuracy**—all durations are derived from time-stamped electronic records held in DAFF and Customs and Border Protection computer systems. Individual consignment times are accurate to the nearest minute.

**Study period**—the study is derived from all referred consignments from 1 July 2008 to 30 June 2012 and as extracted on 30 August 2012.

**Precision**—data are shown to two significant figures. The last significant figure of a number may be underlined where precision could be ambiguous; for example, 8<u>0</u>0.

**Percentages**—percentages are calculated at the highest precision available for the underlying data and are not the ratios of figures shown to two significant figures.

**Sampling error and confidence intervals**—as the study uses all available data and is not sampled these are not indicated, except for the rural tailgate study in Section 10.

# 5 National results

# 5.1 Sea cargo

Table 3 shows the national median times for referred sea cargo by financial year. It shows the number of consignments that were referred to DAFF, the total number of consignments lodged with Customs and Border Protection and the corresponding median arrival-to-release and referral-to-release times.

# TABLE 3 National statistics for imported sea cargo

		Nati	onal summary	of consignments	i
	_	2008-09	2009–10	2010–11	2011–12
Sea cargo	Number of consignments	2 <u>7</u> 0 000	National summary of consignments   008-09 2009-10 2010-11 20   270 000 280 000 300 000 310   na 1 500 000 1 600 000 1 700   na 18% 18%   1.9 1.6 1.8   4.2 3.7 3.1	3 <u>1</u> 0 000	
	Total sea cargo <b>a</b>	na	1 <u>5</u> 00 000	1 <u>6</u> 00 000	1 <u>7</u> 00 000
	Referral rate (%)	na	18%	18%	18%
	Median arrival-to-release (days)	1.9	1.6	1.8	1.6
	Median referral-to-release (days)	4.2	3.7	3.1	3.0

a Import consignments lodged with Customs and Border Protection.

The last significant figure of a number is underlined where precision could be ambiguous; for example, 900.

Times are shown as medians because their distributions can be quite irregular. A median is the middle point, so exactly half of the consignments took less time than the median and half took more time.

Figure 2 shows the changes in median arrival-to-release times and illustrates how the number of referred consignments has increased progressively. At 310 000 in 2011–12, annual referred consignments have grown 14 per cent from 2008–09 while the median arrival-to-release time has fallen 28 per cent in that same period. The referral rate has remained stable at 18 per cent of total lodgements since 2009–10.





As can be seen in Figure 3, relatively infrequent but long-running consignments produce a characteristically elongated right-hand tail. Consignments of horticultural stock, which can take many months to finalise in quarantine, fall somewhere on the right. These consignments disproportionately inflate average release times despite the fact that horticultural imports are a very small proportion of overall imported cargo.

An effect of having this minority of long-running consignments is that releases are much more likely to happen quicker than the average figures suggest. For example, in 2011–12, 70 per cent of sea cargo was released more quickly than the average referral-to-release time of 8.1 days as shown in Figure 3.



FIGURE 3 Distribution of referral-to-release times for imported sea cargo, 2011–12

Figure 4 shows the distribution of sea cargo arrival-to-release times in 2011–12. As anticipated, there is a characteristically long right-hand tail and like Figure 3 this includes all the long-running quarantine processes such as nursery stock and animal isolation.

The left-hand tail of the distribution contains all the consignments that were released before their goods arrived in the country and, consequently, all of these have negative arrival-to-release times.





Figure 4 shows two real-life examples of consignments having pronounced arrival-to-release times.

Consignment A was a single-container consignment of wooden furniture and household goods that was loaded in Shanghai and sent to Adelaide. The consignment was fumigated in China and its supporting documents included valid fumigation and health certificates. The cargo was declared as clean with no timber packing. As a result, the consignment was released on documents 12 days before the goods arrived.

Consignment B was a large, multi-container consignment of wooden furniture and household goods loaded in China and bound for Sydney. Consignment B's documentation did not indicate that all items were free from impervious surfaces when they were fumigated. As a result the consignment was directed for an unpack inspection to understand the extent of the problem. After goods arrival, the inspection discovered untreated wooden items sealed in airtight plastic wrapping which made their fumigation ineffective.

DAFF notified consignment B's broker about the issue, who considered options for treatment with support and guidance from biosecurity officers. After talking with the importer, an irradiation treatment was chosen for the plastic-wrapped goods which required repacking after treatment to make them ready for release. The overall process, including the inspection, negotiation, treatment and packing, meant that final release was granted 38 days after goods arrived.

# 5.2 Air cargo

Table 4 shows the median national times for air cargo broken down by financial year. It shows the number of consignments referred to DAFF, the number of consignments lodged with Customs and Border Protection and the corresponding median arrival-to-release and referral-to-release times.

### TABLE 4 National statistics for imported air cargo

			National summa	ry of consignment	S
		2008-09	2009–10	2010–11	2011–12
Air cargo	Number of consignments	4 <u>7</u> 0 000	5 <u>9</u> 0 000	7 <u>8</u> 0 000	8 <u>2</u> 0 000
	Total air cargo <b>a</b>	na	9 <u>9</u> 00 000	1 <u>3</u> 000 000	1 <u>7</u> 000 000
	Referral rate (%)	na	5.9%	6.2%	4.9%
Air cargo Num Tota Refe Med	Median arrival-to-release (hours)	9.7	9.7	7.0	1.5
	Median referral-to-release (hours)	19	18	16	4.3

a Import consignments lodged with Customs and Border Protection.

The last significant figure of a number is underlined where precision could be ambiguous; for example, <u>90</u>0.

Figure 5 shows the changes in median arrival-to-release time and illustrates how the number of referred consignments has increased progressively. Annually, referred consignments grew 74 per cent from 2008–09 and median arrival-to-release times have fallen 84 per cent in the same period. This was largely due to improvements in IT systems and electronic document sharing with express couriers. The referral rate has fluctuated slightly around an average of 5.6 per cent since 2009–10, with 4.9 per cent of all air cargo referred to DAFF in 2011–12.



FIGURE 5 Median national arrival-to-release times for imported air cargo

As can be seen in Figure 6, relatively infrequent but long-running consignments produce a characteristically extended right-hand tail that disproportionately inflates average release times. This is despite these imports representing a very small proportion referred cargo. Figure 7 shows the distribution of air cargo arrival-to-release times for 2011–12.







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Consignment C was a commercial air-freight consignment of mixed laboratory materials including albumin protein extracts shipped from the United States.

The import declaration was lodged early and the consignment's supporting documents were found to be complete and compliant which allowed DAFF to release the consignment 43 hours before the goods arrived.

Consignment D was a non-commercial shipment of protein isolates which was air freighted from the United States to Sydney. Computer profiling identified the consignment as being of interest and automatically referred it to DAFF for biosecurity assessment. An officer examined the self-assessment documentation and discovered that the necessary import permit was missing. Consequently, the consignment was placed on hold and the importer was contacted to request the permit. A few days later the importer supplied a valid import permit but could not produce an accompanying manufacturer's declaration which was specifically required in the permit's conditions.

Following up, the importer sought and presented the manufacturer's declaration a few days later which allowed the consignment to be released. The incomplete paperwork and subsequent follow-up delays meant that release was granted 164 hours after the shipment arrived in the country.

# 6 Compliance

Compliance is important for this study because it has a dramatic effect on release times. A consignment is compliant when there are no biosecurity risk materials and all required documentation is provided when requested. Compliance means that the import conditions placed on the consignment's goods and packaging were fulfilled when referred to DAFF.

DAFF considers all consignments to be compliant until they are shown to be otherwise. This means that noncompliance arises because one or more cargo directions have had adverse results. For example, if an unpack inspection uncovered an issue then the consignment would become noncompliant. If that same inspection found no problem, the consignment would remain compliant.

The same logic applies when supporting documents are checked, when tests are made and when treatments are applied. For example, if certain goods required an import permit and that permit was absent, then the whole consignment would be deemed noncompliant. If a fumigation was performed incorrectly, the consignment would be noncompliant. If a consignment of prawns failed a virus test, the consignment would be noncompliant. To recap, it is not the direction that determines compliance, it is the result of the direction. Table 5 lists some examples of noncompliant direction outcomes.

There are over 560 adverse results that indicate noncompliance in DAFF's import management systems and this is about one-third of all the possible outcomes of cargo directions. However, this does not mean that one-third of referrals are found to be noncompliant as this rate has been in decline since 2008–09, with only 9.9 per cent of sea cargo and 1.4 per cent of air cargo being noncompliant in 2011–12.

Category	Direction	Result	Example
Testing	Germination testing	Result not OK	Seeds used as stuffing for toy beanbags germinated after testing. Seeds were viable.
Documentation	Present all documentation	Permits not OK	Requested import permits for live fish were absent, incorrect or expired.
Fumigation	CH3Br (methyl bromide) 48g/ m³ for 2.5 hrs at 21 °C or above	Treatment not OK—see comments	Fumigation treatment failed because some items were wrapped in impervious plastic coating.
Inspection	Tailgate—rural destination	Tailgate not OK—ext dirty (high level contamination)	The external surfaces of a container destined for a rural destination were heavily contaminated with foreign soil.
Other treatments	Cleaning as directed	Not performed adequately	The requested cleaning process was not performed correctly, leaving dirt and contaminants on farm machinery.
Inspection	Inspect (unpack)	Inspection not OK—see comments	Unpacking a container found vintage wooden furniture infested with borers.

# TABLE 5 Examples of cargo directions indicating noncompliance

# 6.1 Sea cargo

The median arrival-to-release time for compliant cargo was 0.69 days but for noncompliant cargo this was almost 16 times slower, at 11 days (Table 6, Figure 9 and Figure 10).

# TABLE 6 Median times for imported cargo by compliance status

			Natio	nal summary	of consignm	nents
			2008-09	2009–10	2010–11	2011–12
Sea cargo	Number of consignments	Compliant	2 <u>4</u> 0 000	2 <u>5</u> 0 000	2 <u>7</u> 0 000	2 <u>8</u> 0 000
		Noncompliant	3 <u>0</u> 000	3 <u>1</u> 000	3 <u>1</u> 000	3 <u>1</u> 000
		% noncompliant	11%	11%	10%	9.9%
	Median arrival-to-release (days)	Compliant	1.0	0.78	0.84	0.69
		Noncompliant	11	11	11	11
	Median referral-to-release (days)	Compliant	3.1	2.8	2.7	2.7
		Noncompliant	13	12	13	13

Note: The last significant figure of a number is underlined where precision could be ambiguous; for example, <u>90</u>0.

The bars in Figure 8 show the overall number of referred consignments from year to year. The darker areas indicate the proportion of consignments that were noncompliant and the line chart shows the fall in median arrival-to-release times for compliant cargo since 2008–09.

Despite a sustained fall in evidenced noncompliance since 2008–09, median arrival-to-release times for noncompliant sea cargo have remained stable at 11 days, perhaps due to the biological constraints on many tests and treatments as explained in Section 3.1.

Figure 9 illustrates the relatively uniform distribution of arrival-to-release times for compliant sea cargo, and Figure 10 shows a characteristically skewed distribution of noncompliant sea cargo. It is clear that compliance has a marked effect on arrival-to-release times.



# FIGURE 8 Sea cargo consignment referrals by compliance status and median arrival-to-release time

FIGURE 9 Distribution of arrival-to-release times for compliant sea cargo, 2011–12



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FIGURE 10 Distribution of arrival-to-release times for noncompliant sea cargo, 2011–12

# 6.2 Air cargo

Table 7 shows the effect compliance has had on referred air cargo since 2008–09. Two broad trends are apparent. First, the rate of noncompliance has fallen 36 per cent to 1.4 per cent in this time. Second, the median arrival-to-release time for compliant cargo has fallen 87 per cent to 1.2 hours–more than 100 times quicker than the noncompliant alternative.

# TABLE 7 Median times for imported air cargo by compliance status

			Natior	al summary	of consignn	nents
			2008-09	2009–10	2010–11	2011–12
Air cargo	Number of consignments	Compliant	4 <u>6</u> 0 000	5 <u>7</u> 0 000	7 <u>7</u> 0 000	8 <u>1</u> 0 000
		Noncompliant	1 <u>0</u> 000	1 <u>2</u> 000	1 <u>2</u> 000	1 <u>2</u> 000
		% noncompliant	2.2%	2.1%	1.5%	1.4%
	Median arrival-to-release (hours)	Compliant	8.8	8.8	6.7	1.2
		Noncompliant	1 <u>6</u> 0	1 <u>6</u> 0	1 <u>4</u> 0	1 <u>2</u> 0
	Median referral-to-release (hours)	Compliant	19	17	16	4.0
		Noncompliant	1 <u>4</u> 0	1 <u>4</u> 0	1 <u>4</u> 0	1 <u>3</u> 0

Note: The last significant figure of a number is underlined where precision could be ambiguous; for example, <u>90</u>0.

Figure 11 shows air cargo consignment referrals against a line chart showing the fall in median arrival-to-release times since 2008–09. The dramatic reduction is due largely to the introduction of improved IT systems and cooperative electronic document sharing with express couriers. The darker red areas at the top of the bars indicate the small, noncompliant proportion of consignments.



FIGURE 11 Air cargo consignment referrals by compliance status and median arrival-to-release time

Figure 12 and Figure 13 show the distributions of air cargo arrival-to-release times for compliant and noncompliant consignments. Noncompliance in air cargo has a much more pronounced effect than on sea cargo, with the median arrival-to-release time for compliant cargo being more than 100 times less than the time spent for noncompliant cargo.



FIGURE 12 Distribution of arrival-to-release times for compliant air cargo, 2011–12

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### Compliance



FIGURE 13 Distribution of arrival-to-release times for noncompliant air cargo, 2011–12

# 7 Loading country

A consignment's loading country is where its goods were placed onboard a vessel or aircraft. DAFF processed sea cargo from 196 countries and air cargo from 217 countries in 2011–12. Only the 10 countries that made up most referrals in 2011–12 are shown in the tables for brevity.

Tables 8 and 9 are split into three groups. The first group, the percentage of consignments, shows the proportion of total referrals made by each country. The arrival-to-release group shows the times spent between goods' arrival and release, and the referral-to-release group shows the total time spent on hold for biosecurity reasons. Negative times indicate that consignments were released before they arrived.

# 7.1 Sea cargo

China, the United States and New Zealand dominated business volume in 2011–12, which combined represented 51 per cent of all referrals. Since 2008–09, New Zealand and many of Australia's Asian trading partners have experienced significant improvements in arrival-to-release times and seen continued improvements to their referral-to-release times. This could be a result of investments in modern infrastructure and the streamlining of export processes. In contrast, the cargo from some developed economies, including Japan, the United States and the United Kingdom, has seen a worsening in release times.

			מרמו צט עיץ ר									
					Consignme	nts by popul	ar countries	of loading				
	Pe	rcentage of c	onsignments		Med	lian arrival-to	release (da	ys)	Media	n referral-to	-release (day	s)
Sea cargo	2008-09	2009-10	2010-11	2011-12	2008-09	2009–10	2010-11	2011-12	2008-09	2009–10	2010–11	2011-12
China	28%	28%	30%	32%	0.33	0.093	0.19	0.15	3.8	2.0	1.8	2.0
United States	12%	12%	12%	12%	5.1	5.2	5.9	5.5	7.6	7.0	7.2	7.0
New Zealand	7.4%	7.3%	6.8%	6.7%	0.39	-0.086	-0.21	-0.35	1.8	1.4	1:1	1.5
Indonesia	4.7%	4.9%	4.7%	4.2%	- 0.15	-0.20	-0.39	-0.83	1.8	1.6	1.0	1.0
Malaysia	4.2%	4.3%	4.4%	4.1%	-0.92	-0.86	-1.30	-1.60	1:1	1.0	0.91	0.93
Thailand	3.6%	3.9%	3.6%	3.5%	2.6	2.7	1.9	1.3	5.9	5.6	4.1	3.9
Vietnam	2.8%	3.0%	3.1%	3.2%	-0.56	-0.093	-0.43	-0.90	2.1	2.8	1.7	1.7
United Kingdom	2.5%	2.4%	2.6%	2.8%	5.3	5.4	6.2	6.9	6.1	6.0	7.0	1.7
Japan	3.8%	3.6%	3.0%	2.7%	2.0	2.4	3.7	4.2	5.9	4.9	5.7	5.2
India	2.5%	2.6%	2.5%	2.5%	4.9	4.8	4.3	4.2	7.0	6.8	6.9	6.8

TABLE 8 Median times for imported sea cargo by country of loading

## Loading country

# 7.2 Air cargo

Almost all countries have seen improvements in air cargo release times since 2008–09 and in some cases these improvements have been dramatic, including the United States, the United Kingdom and Germany.

At the other end of the scale, China was not a significant source of air cargo referrals for DAFF and, for those consignments that were referred, release times have deteriorated. This may represent an evolving mix of imported commodities or could be because of some other systematic constraints on efficiency.

TABLE 9 Med	lian times	: for impo	rted air c	argo by	country c	of loading	ы					
				Consi	ignments	by popula	ar countri	es of load	ding			
	Perce	entage of c	consignme	ents	Median a	ırrival-to-	release (ł	iours)	Median re	ferral-to-I	elease (h	ours)
Air cargo	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12
United States	36%	38%	45%	42%	3.8	3.4	-0.33	-4.2	18	15	8.8	2.7
Singapore	22%	23%	18%	17%	10	7	12	6.3	17	16	17	8.3
Hong Kong	6.4%	6.9%	8.4%	11%	7.5	10	7	1.4	17	17	21	4.0
United Kingdom	8.3%	9.6%	8.9%	9.4%	<u>5</u>	12	7.2	-6.2	29	25	22	9.7
New Zealand	7.1%	6.3%	5.2%	5.0%	5.3	4.7	5.7	4.0	12	=	12	5.4
Germany	3.2%	3.3%	3.5%	3.6%	1	6.6	-3.0	-18	29	20	20	4.4
China	1.7%	1.9%	1.6%	1.7%	8.9	16	25	27	22	23	27	36
UAE	0.93%	0.78%	0.93%	1.2%	25	25	25	9.8	27	22	24	22
Thailand	1.6%	1.4%	1.2%	1.2%	10	8.0	6.8	4.9	21	20	17	6.3
Belgium	0.29%	0.77%	0.63%	0.68%	7.0	17	17	6.2	18	24	43	20

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# 8 Import document types

# 8.1 Sea cargo

In its processes, DAFF uses the import declaration documents that are stipulated by Customs and Border Protection. Some declarations are commercial, others non-commercial but in either case DAFF has no authority over the document type that should be used for each import. Table 10 and Table 11 show the effect that document type has on release times.

	Percer	ntage of o	onsignm	ents	Median	arrival-to	-release	(days)	Median	referral-t	o-release	(days)
Sea Cargo	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12
FID	91%	95%	95%	94%	1.8	1.6	1.7	1.5	3.9	3.2	3.0	3.0
SAC	2.1%	1.2%	1.2%	2.2%	6.7	5.9	5.3	6.2	3.7	2.7	2.1	3.1
Other	7.1%	4.2%	4.2%	4.0%	na	na	na	9.4	8.1	5.9	6.7	6.8

TABLE 10 Median times for imported sea cargo by import document type

Note: FID Full import declaration. SAC Self-assessed clearance.

Full import declarations (FIDs) are commercial in nature and are used to clear goods valued over a threshold administered by Customs and Border Protection (currently \$1000). Only an importer or a licensed customs broker may lodge a FID and, when they do so, they must provide details of the cargo, its journey and the business entities involved.

Self-assessed clearances (SACs) are non-commercial and used for goods that fall below the Customs and Border Protection commercial threshold. SACs collect less information from the importer than FIDs, particularly in the nature of the goods that are in the consignment. The term 'SAC' used in Tables 10 and 11 include cargo report SACs as well as short form and long form SACs, all of which are variants of the self-assessed clearance document. All other types of import declaration, such as unaccompanied personal effects and manually created entries, are grouped together and shown as 'Other'.

# 8.2 Air cargo

FIDs dominate the volume of sea cargo referrals and SACs increasingly dominate air cargo referrals, perhaps reflecting the trend toward expedited, non-commercial purchases made via the internet.

TADLE II	meulant		importe	u all Cal	go by in	iportuot	ument	type				
	Perce	ntage of o	consignm	ents	Median	arrival-to	o-release	(days)	Median	referral-t	o-release	(days)
Sea Cargo	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12
FID	14%	13%	11%	10%	29	29	30	29	24	24	25	24
SAC	82%	84%	87%	88%	7.5	7.6	5.8	0.050	18	16	15	3.2
Other	3.5%	2.8%	1.9%	1.5%	na	na	na	na	17	4.0	4.8	20

TABLE 11 Median times for imported air cargo by import document type

Note: FID Full import declaration. SAC Self-assessed clearance.

# 9 Cargo direction chains

As described in Section 3, all consignments referred to DAFF are subject to one or more cargo directions as part of the biosecurity process. For example, a referred consignment of antique furniture that was subject to a document check followed by an inspection before fumigation and final release. In this case, the documentation check, inspection and fumigation were all individual instances of cargo directions that were linked in a sequential chain of events that developed as the consignment progressed through the system.

Although this sequential processing is quite simple, the more than 560 types of cargo directions, each of which can be interchanged and repeated, makes many possible permutations of the cargo direction chain.

However, most referrals seen by DAFF are subject to a relatively small set of chains. The 20 most popular chains, as well as their release times, are shown as a proportion of total referrals in Sections 9.1 and 9.2 and are listed in order of likelihood.

Table 12 shows the absolute number of consignments associated with chain and is accurate to two significant figures. Table 13 lists release times and is shown as four sections. The first section shows event chains, labelled by a letter and listed in order of likelihood. The second section, titled 'percentage of consignments', shows the proportion of referrals that were subject to each chain, and the third and fourth sections show median release times by financial year. Table 14 expands on this by breaking down release times by compliance status.

# 9.1 Sea cargo

TABLE 12 Consignment counts for common sea cargo direction chains	
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			Ν	lumber of co	nsignments	
	Chain	Events	2008-09	2009–10	2010–11	2011–12
Sea cargo	а	Referral→Document check→Release	1 <u>1</u> 0 000			
	b	Referral→Automatic EP→Release	3 <u>3</u> 00	1 <u>3</u> 000	2 <u>8</u> 000	3 <u>1</u> 000
	C	Referral→Document check→Inspect (unpack) →Release	1 <u>7</u> 000	1 <u>9</u> 000	1 <u>9</u> 000	1 <u>8</u> 000
	d	Referral→Automatic EP→Tailgate-rural destination→Release <b>a</b>	1 <u>3</u> 000	1 <u>4</u> 000	1 <u>5</u> 000	1 <u>6</u> 000
	е	Referral→Document check→Tailgate-rural destination→Release a	9 <u>9</u> 00	1 <u>1</u> 000	1 <u>0</u> 000	1 <u>1</u> 000
	f	Referral→Document check→LCL Inspection→Release	4 <u>9</u> 00	6 <u>2</u> 00	8 <u>2</u> 00	8 <u>8</u> 00
	g	Referral→Document check→Fumigation CH3Br 48g/m³ 24 hr. 21 °C or above→Release	3 <u>8</u> 00	3 <u>3</u> 00	4 <u>2</u> 00	5 <u>2</u> 00
	h	Referral→Document check→Additional document check→Release	1 <u>9</u> 00	3 <u>1</u> 00	4 <u>2</u> 00	4 <u>4</u> 00
	i	Referral→SAC document check→Release	1 <u>1</u> 000	2 <u>6</u> 00	2 <u>8</u> 00	3 <u>8</u> 00
	j	Referral→Document check→Tailgate→ Release	3 <u>5</u> 00	3 <u>8</u> 00	3 <u>8</u> 00	3 <u>6</u> 00

a See Section 10 for more information.

Note: The last significant figure of a number is underlined where precision could be ambiguous; for example, 900.

		Percent	age of c	onsignme	ents b	Median	arrival-to	-release	(days)	Median	referral-to	o-release (	days)
	Sea cargo chain of events	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12	2008 - 09	2009 -10	2010 -11	2011 -12
ъ.	Referral→ Document check→ Release	41%	40%	37%	37%	-1.8	-1.8	-1.9	-2.0	0.84	0.86	0.89	0.95
P	Referral→ Automatic EP → Release	1.2%	4.8%	9.5%	10%	-3.3	-3.1	-3.6	-3.6	< 0.005	< 0.005	<0.005	<0.005
U	Referral→ Document check→ Inspect (unpack)→Release	6.5%	6.8%	6.4%	5.7%	7.3	7.5	7.7	7.5	12	12	12	13
Ρ	Referral→ Automatic EP→ Tailgate–rural destination→ Release a	4.7%	5.1%	5.0%	5.4%	4.3	4.2	4.0	4.1	1.7	7.0	7.0	1.7
Ð	Referral→ Document check→Tailgate-rural destination→ Release a	3.7%	4.0%	3.4%	3.6%	4.6	4.3	4.1	4.2	7.2	7.0	1.7	7.2
f	Referral→ Document check→ LCL Inspection→ Release	1.8%	2.2%	2.7%	2.9%	8.2	8.7	8.7	8.5	6.9	6.1	6.9	6.9
00	Referral→ Document check→ Fumigation CH3Br 48 g/m³ 24 hr. 21 °C or above→ Release	1.4%	1.2%	1.4%	1.7%	7.0	7.4	8.2	8. 8.	8.7	7.6	=	12
<u> </u>	Referral→ Document check→ Additional document check→ Release	0.70%	1.1%	1.4%	1.5%	0.079	0.47	0.52	0.46	2.9	3.0	3.1	3.8
	Referral→ SAC document check→ Release	3.9%	0.92%	0.94%	1.2%	3.1	3.2	2.9	3.0	10	1.6	1.7	2.7
	Referral→ Document check→ Tailgate→ Release	1.3%	1.4%	1.3%	1.2%	3.8	4.1	4.1	4.6	7.6	1:7	8.0	8.7
a S Noi	ee Section 10 for more information. <b>b</b> See Table 12 for counts. te: The last significant figure of a number is underlined where precision	could be ar	nbiguous; 1	for example	, 9 <u>0</u> 0.								

# TABLE 13 Median times for common sea cargo direction chains

### Cargo direction chains

	Sea cargo chain of events	Percenta 2008	lge of con 2009	signment: 2010	s b 2011	Median 2008	arrival-to 2009	-release ( 2010	days) 2011	Median 2008	referral-t 2009	o-release 2010	(days) 2011
	)	60-	-10	7	-12	60-	-10	7	-12	60-	-10	<u>+</u>	-12
	Referral → Document check → Release	41%	40%	37%	37%	-1.8	-1.8	-1.9	-2.0	0.84	0.86	0.89	0.95
	Referral → Automatic EP → Release	1.2%	4.8%	9.5%	10%	-3.3	-3.1	-3.6	-3.6	< 0.005	< 0.005	< 0.005	< 0.005
	Referral→ Document check→ Inspect (unpack) → Release	6.4%	6.7%	6.3%	5.6%	7.3	7.5	7.7	7.5	12	12	12	13
	Referral→ Automatic EP→Tailgate−rural destination→ Release a	4.6%	5.1%	5.0%	5.4%	4.3	4.2	4.0	4.1	1.7	7.0	7.0	7.1
	Referral→ Document check→ Tailgate-rural destination→ Release a	3.7%	4.0%	3.4%	3.5%	4.5	4.3	4.1	4.2	7.2	7.0	7.1	7.2
	Referral→ Document check→ LCL Inspection→ Release	1.7%	2.1%	2.6%	2.8%	8.2	8.6	8.6	8.4	6.9	6.1	6.9	6.9
	Referral≁ Document check≁ Fumigation CH3Br 48 g/m³ 24 hr. 21 °C or above ≁ Release	1.2%	1.0%	1.1%	1.5%	6.8	7.4	8.2	80 80	8.00	9.8	1	12
	Referral→ SAC document check→ Release	3.9%	0.92%	0.94%	1.2%	3.1	3.2	2.9	3.0	10	1.6	1.7	2.7
	Referral→ Document check→ Tailgate→ Release	1.3%	1.3%	1.3%	1.2%	3.8	4.0	4.1	4.5	7.6	1.7	8.0	8.8
	Referral → Document check → ICE Inspection → Release	0.70%	1.0%	0.81%	1.0%	5.1	5.2	5.0	5.4	9.1	9.1	9.5	10
	Referral→ Document check→ Break- bulk inspection→ Cleaning and reinspection→ Release	0.41%	0.58%	0.59%	0.63%	6.9	8.2	6.8	0.6	6.8	0.6	=	12
	Referral → Document check → Additional Document Check → Release	0.15%	0.42%	0.45%	0.43%	0.30	0.52	06.0	0.76	3.1	3.0	3.5	3.8

Continued ...

### Cargo direction chains

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TABLE 14 Median times for common sea cargo direction chains shown by compliance status

Continued TABLE 14 Median times for common sea cargo direction chains shown by compliance status

			Percent	age of con	signment	s b	Median	arrival-to	-release (	days)	Median re	eferral-to	-release (	days)
		Sea cargo chain of events	2008 - 09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12	2008 - 09	2009 -10	2010 -11	2011 -12
		Referral → Document check → Inspect (unpack) → Cleaning and reinspection → Release	0.25%	0.30%	0.38%	0.40%	13	13	13	14	14	13	13	15
	>	Referral→ Document check→LCL inspection→ Cleaning and reinspection→ Release	0.12%	0.21%	0.30%	0.36%	17	15	<u>6</u>	13	0. 0	7.3		9.8
	≥	Referral→Automatic EP→ Break- bulk inspection→ Cleaning and reinspection→ Release	0.16%	0.19%	0.20%	0.26%	6.1	8.	° 8	8.3	0. 0.	8.0	0.6	8.9
Noncon	50	Referral→ Document check→ Fumigation CH3Br 48 g/m³ 24 hr. 21 °C or above→ Release	0.18%	0.16%	0.26%	0.23%	7.6	7.8	8.6	0.6	8.0	8.1	1	12
npliant	×	Referral→ Document check→ Verify packing→ Release	0.060%	0.069%	0.054%	0.22%	8.1	8.9	9.1	8.6	4.7	3.9	4.1	6.0
	aa	Referral -> Document check -> Personal effects inspect -> Acquit holds in ICS -> Release	0.21%	0.19%	0.15%	0.13%	na	na	na	16	4.9	3.9	3.3	4.0
	ab	Referral→ Document check→ Break- bulk inspection→ Move to specified premises→ Cleaning and reinspection→ Release	0.086%	0.05%	0.065%	0.13%	0	9.2	12	14	12	12	16	20
	ac	Referral→Automatic EP→Tailgate- rural destination→ Cleaning and reinspection→ Release	0.14%	0.12%	0.16%	0.13%	9 8	7.3	8.5	9.2	10	11	12	13
a See	Sec	-tion 10 for more information. b See Table 12 for counts.												

Cargo direction chains

Notes: The last significant figure of a number is underlined where precision could be ambiguous; for example, 900.

# 9.2 Air cargo

			Nu	mber of con	signments	
	Chain	Events	2008-09	2009–10	2010-11	2011–12
Air cargo	a	Referral→Document check→Release	3 <u>8</u> 000	4 <u>0</u> 000	4 <u>1</u> 000	4 <u>5</u> 000
	b	Referral→Automatic EP→Release	110	1 <u>6</u> 00	4 <u>0</u> 00	4 <u>8</u> 00
	h	Referral→Document check→Additional			-	
		document check→ Release	1 <u>2</u> 00	1 <u>6</u> 00	1 <u>6</u> 00	1 <u>7</u> 00
	i	Referral→SAC document check→Release	2 <u>2</u> 0 000	2 <u>9</u> 0 000	4 <u>4</u> 0 000	4 <u>9</u> 0 000
	k	Referral→SAC document check→SAC				
		inspection→ Release	1 <u>3</u> 0 000	1 <u>6</u> 0 000	2 <u>0</u> 0 000	1 <u>8</u> 0 000
	I	Referral→Document check→Air freight				
		inspection→Release	1 <u>5</u> 000	1 <u>8</u> 000	1 <u>9</u> 000	1 <u>9</u> 000
	m	Referral→SAC document				
		check≁Upgrade≁Document				
		check→ Release	1 <u>1</u> 000	1 <u>3</u> 000	1 <u>7</u> 000	1 <u>5</u> 000
	n	Referral→SAC document				
		check→Upgrade→Document				
		check→Additional document				
		check→ Release	1 <u>6</u> 00	3 <u>2</u> 00	7 <u>3</u> 00	9 <u>6</u> 00
	0	Referral→Document check→Personal				
		effects inspect→ Release	6 <u>3</u> 00	6 <u>4</u> 00	6 <u>5</u> 00	6 <u>5</u> 00
	р	Referral→SAC document				
		check $\rightarrow$ Upgrade $\rightarrow$ Document check $\rightarrow$ AIR				
		Freight inspection -> Release	2 <u>8</u> 00	3 <u>6</u> 00	4 <u>4</u> 00	4 <u>5</u> 00

# TABLE 15 Consignment counts for common air cargo direction chains

Note: The last significant figure of a number is underlined where precision could be ambiguous; for example, 900.

		Percer	ntage of	consignr	nents a	We	edian arr	ival-to-r	elease nours)	Med	dian refe	rral-to-re	elease nours)
	Air cargo chain of events	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12
-	Referral→SAC document check→Release	46%	50%	56%	60%	:-	0.017	-1.7	-5.9	10	7.8	5.6	1.2
$\prec$	Referral→SAC document check→SAC inspection→ Release	27%	28%	25%	22%	16	17	19	17	25	26	28	27
ъ	Referral→ Document check→ Release	8.1%	6.8%	5.3%	5.5%	17	15	15	16	16	16	17	18
_	Referral→Document check→Air freight inspection→Release	3.2%	3.1%	2.5%	2.3%	65	65	69	71	48	49	50	50
E	Referral→SAC document check→ Upgrade→ Document check→ Release	2.4%	2.3%	2.2%	1.9%	21	21	20	20	28	27	25	26
	Referral→SAC document check→Upgrade→Document check→Additional document check→Release	0.34%	0.54%	0.94%	1.2%	64	66	65	50	75	74	73	56
0	Referral → Document check → Personal effects inspect → Release	1.3%	1.1%	0.84%	0.80%	1 <u>9</u> 0	2 <u>0</u> 0	200	180	7	7	20	19
þ	Referral → Automatic EP → Release	0.02%	0.27%	0.52%	0.59%	-4.0	-3.9	-5.0	-5.5	0.017	0.017	0.017	0.017
d.	Referral→SAC document check→Upgrade→Document check→Air Freight inspection→Release	0.59%	0.61%	0.57%	0.55%	76	88	67	66	64	78	88	100
Ч	Referral → Document check → Additional document check → Release	0.25%	0.27%	0.21%	0.21%	74	68	72	73	69	68	70	70
a Sei Note	e Table 15 for counts. 2: The last significant figure of a number is underlined where precision coulc	l be ambigu	lous; for e	xample, 9 <u>0</u>	00.								

TABLE 16 Median times for common air cargo direction chains

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TAB	Ē	7 Median times for common air cargo direct	on chains s	shown by	complianc	ce status								
			Perce	entage of c	onsignmen	its a	Median	arrival-to-	-release (	days)	Median r	eferral-to	-release (	days)
		Air cargo chain of events	2008 -09	2009 -10	2010 -11	2011 -12	2008 - 09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12
		Referral → SAC document check → Release	46%	50%	56%	%09	1.1	0.017	-1.7	-5.9	10	7.8	5.6	1.2
	×	Referral→SAC document check→SAC inspection→Release	27%	28%	25%	22%	16	17	19	17	25	26	28	27
		Referral→ Document check→ Air freight inspection→ Release	8.1%	6.8%	5.3%	5.5%	17	15	15	16	16	16	11	18
	ъ	Referral → Document check → Release	3.2%	3.0%	2.4%	2.3%	65	65	69	71	48	49	50	49
(	E	Referral → SAC document check → Upgrade → Document check → Release	2.3%	2.3%	2.1%	1.9%	21	21	20	20	28	27	25	26
Compliant	<b>_</b>	Referral->SAC document check-> Upgrade-> Document check-> Additional document check-> Release	0.26%	0.44%	0.83%	1.0%	50	54	54	45	64	61	66	52
	0	Referral → Document check→ Personal effects inspect→ Release	1.3%	1.1%	0.82%	0.78%	1 <u>9</u> 0	2 <u>0</u> 0	2 <u>0</u> 0	1 <u>7</u> 0	18	15	20	19
	p	Referral → Automatic EP → Release	0.023%	0.27%	0.52%	0.59%	-4.0	-3.9	-5.0	-5.5	0.017	0.017	0.017	0.017
	٩	Referral→SAC document check→ Upgrade→ Document check→Air freight inspection→ Release	0.57%	0.59%	0.55%	0.54%	76	68	76	66	64	79	88	100
	S	Referral-≯ Document check → Horse inspect → Release		0.068%	0.15%	0.17%		16	16	73		73	71	75

Continued ...

### Cargo direction chains

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							זרת						
		Perce	entage of c	onsignmer	nts a	Median	arrival-to	-release (	days)	Median r	eferral-to	-release (	lays)
Air cargo chain	of events	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12	2008 -09	2009 -10	2010 -11	2011 -12
Referral->SAC d check->Upgrads check->Additior	locument ≥→ Document 1al document check→ Release	0.082%	0.11%	0.11%	0.13%	120	110	120	95	120	120	120	100
Referral + SAC check + Upgrac check + Additio check + Additio	document Je→ Document onal document onal document check→ Release	0.030%	0.059%	0.065%	0.068%	1 <u>7</u> 0	150	1 <u>8</u> 0	150	100	1 <u>6</u> 0	180	160
Referral→ Doc document che	ument check >> Additional ck >> Release	0.040%	0.069%	0.055%	0.064%	92	76	75	75	83	69	63	72
Referral→ Doo packing→ Insp g/m³ 2 hr. 21 °.	ument check -> Verify ection of cut flowers -> CH3Br 32 C or above -> Release	0.065%	0.023%	0.058%	0.056%	29	21	41	6e	47	30	66	72
Referral → Doc inspection → R	ument check≁Air freight telease	0.055%	0.070%	0.059%	0.038%	11	76	67	89	47	48	52	69
Referral→Doo verification→ 32 g/m³ 2 hr.2	cument check→CTO Inspection of cut flowers→CH3Br 21 °C or above→ Release				0.032%				30				52
Referral→Do. packing→ Fre: m³ 2 hr. 21 °C	cument check→Verify sh produce inspect→ CH3Br 32 g/ or above→ Release	0.042%	0.011%	0.028%	0.022%	27	25	70	49	70	50	1 <u>0</u> 0	7

Continued ...

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TABLE 1		ja None	o compliant	ag ag
7 Median times for common air cargo dire	Air cargo chain of events	Referral-> Document check-> Verify packing-> Inspection of cut flowers-> CH3Br 32 g/m <sup>3</sup> 2 hr. 21 °C or above-> Pending test results-> Release	Referral → Document check → Personal effects inspect → Release	Referral→ Document check→ CTO verification→ Fresh produce inspect→ CH3Br 32 g/m³ 2 hr. 21 °C or above→ Release
ction chains	2008 -09	< 0.005%	0.053%	
shown by	2009	< 0.005%	0.027%	
complian	2010 -11	0.019%	0.019%	
ce status	2011	0.018%	0.017%	0.016%
Continue	2008 -09	52	1 <u>9</u> 0	
d arrival-to-	2009 -10	1 <u>8</u> 0	na	
) ascalar	2010	62	na	
lavc)	2011 -12	54	320	49
Median re	2008 - 09	7	E.	
eferral-to	2009 -10	2 <u>0</u> 0	2.3	
-release (	2010 -11	1 <u>2</u> 0	2.5	
(davs)	2011 -12	94	2.1	72



# Cargo direction chains

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# 9.3 Example cargo direction chains



FIGURE 14 Referral → Document check → Release

Thirty-seven per cent of referred sea cargo was subject to this chain of events in 2011–12. Its median arrival-to-release time was –2.0 days and its median referral-to-release time was 0.95 days. That is, the median end-to-end duration of this chain was 0.95 days and the release occurred two days before goods arrived.

In Figure 14, a consignment is placed on hold and electronically referred to DAFF by the Customs and Border Protection computer system. Biosecurity officers check supporting documents and update the consignment's electronic records to indicate that it is suitable for release. A notification is then automatically sent to Customs and Border Protection and the hold is removed.

### FIGURE 15 Referral → Automatic EP → Release



As in Figure 14, in Figure 15 the Customs and Border Protection computer system refers the consignment to DAFF for assessment. DAFF records indicate that the broker is registered in the automatic entry processing scheme and, as a result, the consignment is recognised as being of low risk and released automatically. The broker is charged a small fee as a condition of the automatic entry processing agreement.

The prevalence of this chain of events has grown significantly since 2008–09, and in 2011–12 was associated with 10 per cent of sea cargo. The automated processing in this chain allows for a median referral-to-release time of less than eight minutes and median arrival time of -3.6 days. This is the fastest way to clear DAFF and is open to an increasing range of commodities.



# **FIGURE 16** Referral $\rightarrow$ Document check $\rightarrow$ Inspection (unpack) $\rightarrow$ Release

After automatic referral, the document check indicated that an unpack was needed to assess the consignment's commodities and packaging. This kind of inspection requires that a biosecurity officer is present when the containers are opened, unpacked and checked. As no problems were found the consignment was released without further action.

Attributable to 5.7 per cent of referred sea cargo, this was the third most frequent direction chain in 2011–12. The need to wait for goods to arrive resulted in a median arrival-to-release time of 7.5 days and a median referral-to-release time of 13 days. It is one of the longest running direction chains for DAFF.

FIGURE 17 Referral → Automatic EP → Tailgate-rural destination → Release



In Figure 17, the referred consignment's goods were considered of low biosecurity risk as it was subject to the automatic entry processing system. However, because the consignment's delivery address was to a rural destination, specifically a postcode identified as rural, the consignment required a rural tailgate inspection.

DAFF's policy is to perform this kind of inspection on all containers with a rural destination. The inspection requires that a biosecurity officer is present when the containers are opened and checked. In this case the inspection found no problem and the consignment was released.

In 2011–12, 5.4 per cent of referred consignments were subject to this chain of events. Rural tailgates were the most common form of inspections made in 2011–12 and are studied in more detail in Section 10. This chain had a median arrival-to-release time of 4.1 days and a median referral-to-release time of 7.1 days.

# 10 Rural tailgate case study

With over 35 000 consignments being subject to a rural tailgate in 2010–11, rural tailgate inspections were the most common form of inspection made on sea cargo consignments and their containers. As well as being numerous, the release times of the two most frequently seen rural tailgate direction chains were lengthy, with median arrival-to-times of 4.0 and 4.1 days. In part this reflects the fact that rural tailgates must be performed post-arrival.

A simplified timeline for a rural tailgate event chain is shown in Figure 18. Following electronic referral to DAFF, the consignment's import declaration indicates that the final delivery address is to a postcode designated as a rural area. The consignment is therefore subject to a rural tailgate inspection.

In almost all cases, electronic referral is made before the consignment has arrived in Australia and although all parties know an inspection will be required, little can be done until the containers have left the wharf and are available for inspection. Depending on the destination facilities, arrangements can be made to book the consignment into a suitable facility and for a biosecurity officer to be present while the inspection is made. This can be done while the consignment is in its late stage voyage and minimises the post-arrival delay.



FIGURE 18 Simplified rural tailgate process showing key times

Figure 18 shows three important events. The first is the referral of the consignment to DAFF—before this, DAFF has no knowledge of the consignment. The second event is the wharf-gate-out time, which is the time that the consignment's container(s) left the wharf and is sourced from the 1-Stop Gateway industry service. The final event is the release from DAFF completing the process.

All three events are recorded as electronic timestamps which allow us to calculate three main durations: referral-to-release, referral-to-wharf-gate-out and wharf-gate-out-to-release. The wharf-gate-out-to-release duration best reflects any additional delay as a direct result of the rural tailgate inspection.

Many factors could influence this time, such as the availability of commercial tailgate facilities, transit times and staff availability. However, both DAFF and industry have some degree of control over this measure by allocating resources and ensuring inspections are performed as efficiently as possible.

To investigate these durations in detail, a randomly selected sample was taken from consignments subject to a rural tailgate in 2010–11. The random sample of 100 consignments yielded data for 171 containers involved in rural tailgates across the country. The sample included consignments with commodity inspections as well as a rural tailgate inspection, reflecting the true nature of the rural tailgate consignment population.

Data were then extracted from DAFF and Customs and Border Protection's computer systems to provide referral timestamps, vessel arrival times and container discharge times. The industry service 1-Stop was used to obtain the gate-out times for containers exiting the wharf after discharge. This timeline data was used to calculate:

- referral-to-release—the time from consignment referral to its release
- **referral-to-wharf-gate-out**—the time from referral to the availability of the goods
- arrival-to-release—the time from goods arrival to release
- wharf-gate-out-to-release—the time from goods availability to release.

Calculated data for referral and arrival-to-release times were used to check the accuracy and validity of the sample by comparing the sample's values against those found in the complete data supporting Table 13. The sample's median referral-to-release of 7.1 days compares well with the non-sampled value of 7.0 days and the sample's median arrival-to-release time of 4.2 days is close to the non-sampled value of 4.0 days.

The wharf-gate-out-to-release time indicates how long a container is delayed as a direct consequence of the rural tailgate inspection. In the sample, this time ranged from 15 minutes to nearly 9.5 days. The measure wharf-gateout-to-release reflects the actual time taken to perform the rural tailgate inspection and the referral-to-wharf-gate-out the time spent waiting for goods to become available for inspection. Table 18 shows aggregates and ranges based on sampling error estimates for these measures.

Observed measure	Median (days)	Average (days)	Median range a	Average range a
Referral-to-release	7.1	9.6	7.1–8.0	7.9–11.3
Referral-to-wharf-gate-out	6.6	7.4	6.4-6.9	6.6-8.2
Arrival-to-release	4.2	7.1	3.6-4.6	2.6-11.6
Wharf-gate-out-to-release	0.71	2.2	0.55-0.85	0.63-3.8

### TABLE 18 Observed times for 2010-11 sampled, national rural tailgate inspections

**a** At 95% confidence interval.

Figure 19 shows the distribution of the data summarised in the table. The data show the characteristic long right-hand tail seen in many of DAFF's business processes, with an average inflated by a few long-running inspections.

The percentile rank for the sample shows that 75 per cent of containers had completed their rural tailgate inspection more quickly than average, with 65 per cent being completed within one day.

The number of variables that exist within the port precinct operating environment make it difficult to precisely apportion release times between transit time and booking time. However, the median arrival-to-release time of 4.2 days and the wharf-gate-out-to-release of 0.71 days do indicate that the large majority of median arrival-to-release time is spent on the wharf awaiting inspection.



FIGURE 19 Distribution of 2010–11 sampled wharf-gate-out-to-release times for rural tailgate inspections

# **10.1 Exceptions and factors**

The following were excluded from the sample and the study as exceptions:

- Darwin and Port Kembla discharge consignments—containers are often inspected on the wharf at these ports which invalidates the study's assumption that wharf-gate-out-to-referral is a measure of inspection time
- consignments with differing discharge and destination ports, where the rural tailgate inspection was conducted at the destination port. For example, a Tasmania-bound consignment discharged in Melbourne could wait many days for a domestic transfer to Tasmania. The rural tailgate inspection conducted in Tasmania would be long after wharf-gate because of the time taken for domestic transfer.

Factors that might influence the time it takes to complete a rural tailgate inspection include:

- whether the container meets biosecurity import conditions and is free of contamination—if not, lengthy cleaning and reinspection or treatment will be needed.
- whether the tailgate inspection facility, often a quarantine approved premises (QAP), is a manned or unmanned depot—unmanned locations require a booking for an inspection, manned locations can work on an unplanned schedule.
- what day the consignment arrives—as the normal operating hours of most QAPs are business hours Monday to Friday, a consignment may have to wait until after the weekend for its inspection.

- what time of day the container exits a wharf—generally when exiting at night the container would be inspected the following day. Similarly, when exiting on a weekend a container would normally be inspected on the following Monday.
- whether a commodity inspection is required—a rural tailgate inspection may be completed promptly but a concurrent commodity inspection can delay the release of the consignment.

# 11 Glossary

Accredited person	A person who has successfully completed the DAFF training course for the relevant scheme and meets all of the pre-requisites detailed in the scheme for which the accreditation applies.
Arrival-to-release time	The time elapsed between arrival and release from quarantine for referred consignments.
Australian Customs and Border Protection Service	The Australian Government's lead border agency, Customs and Border Protection protects the safety, security and commercial interests of Australians through border protection designed to support legitimate trade and travel and ensure collection of border revenue and trade statistics.
Automatic Entry Processing	The Automatic Entry Processing (AEP) scheme allows accredited persons to self-direct consignments that have quarantine concerns. The scheme enables accredited persons to direct entries without the need to send documents to DAFF and have one of its officers process the entry.
Biosecurity	Preventive measures designed to reduce the risk of transmission of infectious diseases, quarantined pests, invasive alien species, living modified organisms.
Border agencies	Government agencies charged with managing the Australian border. Customs and Border Protection is the government's lead border agency. It also acts on behalf of a range of other agencies. DAFF works in partnership with Customs and Border Protection at the border to manage quarantine, food safety and health matters.
Break-bulk cargo	Non-containerised cargo shipped as units (bundles, pallets, vehicles, drums, etc.).
Broker	See Customs Broker.
Bulk cargo	Loose, unpackaged, non-containerised cargo (such as gas, grains, ores, etc.) carried in a ship's hold.
Cargo direction	Actions ordered to be taken on cargo of biosecurity concern. Typical directions include inspections, movements and treatments. A referred consignment can be subject to a chain of cargo directions, such as inspection, fumigation and release.

CH3Br	Methyl bromide, a gas used for fumigation.
Cargo report self-assessed clearance	A cargo report incorporating a self-assessed clearance declaration for consignments valued at or below \$1000.
Consignment	A specific shipment of goods presented by a consignor to a carrier for delivery to a consignee.
Consignment intact	Goods are not unpacked, separated or split from a consignment.
Customs broker	A person authorised in accordance with the <i>Customs Act 1901</i> to act on behalf of an owner of goods, to undertake activities such as arranging for the clearance of goods into home consumption by making an import declaration.
Direction	See Cargo direction.
Discharge	The unloading of cargo from an aircraft or vessel.
Discharge port	The port where the cargo is unloaded from the export vessel.
Express	Express delivery services. Integrated logistics suppliers of expedited door-to-door transport and delivery of time-critical air cargo shipments, including documents, parcels and merchandise goods.
FCX	A Customs and Border Protection term referring to full container loads with multiple bills of lading, which will be delivered to a single address.
Flight	A particular aircraft arrival.
Freight forwarder	A service provider that arranges the carriage of goods for importers and exporters. A forwarder prepares documents, contracts and arranges transport and insurance.
Full container load (FCL)	A container loaded with goods for one consignee only, whether transported directly to the consignee or through a freight forwarder or an agent.
Impeded	A status of cargo. Impeded cargo is held under an intervention by Customs and Border Protection or DAFF that must be resolved before the goods may be released.
Import declaration	A detailed fiscal and statistical declaration required for the clearance of consignments valued above \$1000.
Integrated cargo system (ICS)	An integrated software application that allows for the movement of vessels, aircraft and cargo to be electronically reported and declared to the border agencies by traders and service providers. It enables the agencies to risk assess cargo and craft, collect trade statistics, assess and collect revenue, and determine and advise owners of the release status of their cargo.
Less (than) container load (LCL)	A shipping container containing consignments for more than one consignee. Such containers must be deconsolidated under Customs' control.
Quarantine approved premises (QAP)	Facilities that are approved by DAFF for the performance of biosecurity management under section 46A of the <i>Quarantine Act 1908</i> .

Referral	The act of placing a consignment on hold for biosecurity reasons. A referral directs a consignment to DAFF for biosecurity assessment.
Referral-to-release time	The time elapsed between the referral of a consignment to DAFF and its subsequent release from quarantine.
Rural tailgate	A tailgate inspection made on sea containers that will be delivered to a rural destination for unpacking.
Self assessed clearance (SAC) declaration	A simplified declaration for consignments valued at or below \$1000.
Straight-line cargo	Air cargo not consolidated with other consignments. It is shipped on its own master air waybill and is delivered into home consumption from the import terminal (rather than from a deconsolidation depot).
Tailgate	A type of sea container inspection that involves an external inspection of the container and a visual verification of the container and goods at the opened container doors.
Unpack	The process of unpacking cargo from a container.

# The 'Biosphere' graphic element

DAFF biospheres symbolise what sits at our core and has real relevance to the work we do—sustaining life and prosperity.

This biosphere captures patterns within life using high-contrast photography to focus on the form, structure and detail of some of the objects that may present a biosecurity risk.



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Reform of Australia's biosecurity system is available at: **daff.gov.au/biosecurityreform**