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The Study on Measurement of the Time Required for the Release of Goods in the Republic of the Philippines

FINAL REPORT

The Study on Measurement of the Time Required for the Release of Goods in the Republic of the Philippines

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AAB	Authorized Agent Banks
ABMS	Automated Bonds Management System
ACOS	Automated Customs Operating System (Bureau of Customs)
ADB	Asian Development Bank
AFTA	Association of Free-Trade Areas
AMPP	Automated Matching of Payment and Payable System
ANOVA	(One-Way) Analysis of Variance
ASEAN	Association of South East Asian Nations
ASYCUDA	Automated System for Customs Data Management
ATI	Asian Terminal Incorporation
ATRIG	Authority to Release Imported Goods
BAI	Bureau of Animal Industry
BFAR	Bureau of Fisheries and Aquatic Resources
BI	Bureau of Immigration
BIR	Bureau of Internal Revenue
BIS	Bureau of Import Services
BOC	(Philippine) Bureau of Customs
BPI	Bureau of Plant Industry
BSP	Bangko Sentral ng Pilipinas
BTr	Bureau of Treasury
CAI	Certificate of Authority
CAO	Circular Administrative Order
CBDA	Clark Base Development Authority
CBW	Customs Bonded Warehouse
CDEC	Cargo Data Exchange center Incorporated
CMO	Circular Memorandum Order
CPCO	Customs-PEZA Clearance Office
CTD	Customs and Tariff Division
CUSDEC	Customs Declaration
DOF	Department of Finance
DOH	Department of Health
DOTC	Department of Transportation and Communication
DWS	Data Warehouse System
EDI	Electronic Data Interchange
EDU	Electronic Data Unit
EEC	Entry Encoding Center
EFTIS	Electronic File Transfer Information System
EPU	Entry Processing Unit
ETDO	Excise Tax District Office
FED	Formal Entry Division
FOB	Free on Board
FQ	Fishery Quarantine
ICTSI	International Container Terminal Services Incorporated
IEIRD	Import Entry and Internal Revenue Declaration
INS	Inter Commerce Network Services
IRD	International Revenue Division
IST	Import Specialist Team
IT	Information Technology

JICA	Japan International Cooperation Agency
LTO	Land Transportation Office
MIAA	Manila International Airport Authority
MICP	Manila International Container Airport
MISTG	Management Information System Technology Group
MOA	Memorandum of Agreement
NAIA	Ninoy Aquino International Airport
NDI	No-Dollar Importations
OIC	Officer-in-Charge
OLRS	On-Line Release System
PAIRCARGO	People's Aircargo and Warehousing Incorporated
PAS	Payment Abstract Secure
PASS	Project Abstract Secure System
PCCI	Philippine Chamber of Commerce and Industry
PCHC	Philippine Clearing House Corporation
PEA	Post Entry Audit
PEZA	Philippine Economic Zone Authority
POM	Port of Manila
PPA	Philippine Ports Authority
PSG	Presidential Security Group
PSI	Philippine Skylanders Incorporated
PVS	Payment Verification System
RAD	(Bureau of Customs) Revenue Accounting Officer
RDO	Revenue District Officer
RMG	Risk Management Group
RO	Revenue Officer
SAD	Single Administrative Document
SBMA	Subic Base Management Authority
SGS	Societe Generale de Surveillance
SITA	Societe Internationale de Telecommunications Aeronautiques
SSP	Streamlining, Standardizing and Publicizing
TAN	Temporary Assessment Notice
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
VAN	Value Added Network
VAT	Value Added Tax
WAD	Warehousing Assessment Division
WCO	World Customs Organization
WDRD	Warehousing Documentation and Records Divisions
WTO	World Trade Organization

CHAPTER I

BACKGROUND OF THE STUDY

I.1 OBJECTIVES AND SCOPE OF THE STUDY

An open economy exacts heavy demands for efficient trade facilitation from Customs and other frontline agencies of governments with border responsibilities. These demands grow with increasing market competition as they bear on the ability of producers to satisfy the market craving for better product quality, lower costs and faster delivery. In recognizing the urgency of these demands, the Philippine Bureau of Customs (BOC) has been forging alliances and partnerships with institutions and stakeholders that can assist the Bureau to respond to these challenges. This study is a product of one such partnership—with the Japan International Cooperation Agency (JICA).

There are two main objectives of the study: (1) to assess existing import procedures by measuring the average time taken from arrival to release of cargo and identifying constraints affecting the implementation of these procedures; and (2) to propose measures to reduce the time required for the release of goods and explore future technical assistance projects that may be needed to carry out the suggested measures.

The study will estimate the mean time between the arrival and release of imported goods, as well as the time required for some key intervening processes between arrival and release of goods, *e.g.,* lodgment of import declaration and physical examination of goods. Thus, it will involve not only BOC, but also other agencies that are actors in the import clearance chain.

Only those import transactions covered by the Bureau of Customs Automated Customs Operating System (ACOS) will be included, namely, formal and warehousing entries. Formal entries pertain to declaration of consumption imports whose FOB value exceeds US$500. Warehousing entries are declarations of imports that are to be unloaded in bonded warehouses. While warehousing entries exclude imports bound for PEZA and are officially classified as transshipments, the study will

also include the measurement of time release of PEZA transshipments to the extent that the data gathered in the survey will allow. Yet all key procedures, automated or manual, in the clearance chain are to be included.

Supplementing this sample of the database is a survey interview of key officials of the BOC and other stakeholders. The interview survey will provide inputs from the "ground" on the reasons for delays and the suggested measures to improve the processes.

Traffic in the Port of Manila (POM), Manila International Container Port (MICP) and Ninoy Aquino International Airport (NAIA) will be covered. These three district ports account for 69 percent of total formal and warehousing entries, and 85 percent of total entries (*i.e.* including informal) during 2001.

I.2 STRUCTURE OF GOVERNANCE OF IMPORT PROCESSING

Several government agencies and private firms are involved in the processing of imports. At least thirty government agencies from ten departments, three major export processing zones/authorities and the Office of President, Presidential Security Group exercise supervision and control on certain aspects of the import processing chain. On the other hand, private sector participation has expanded following the privatization policy started in the early 1990s. Of at least eleven private sector groups, major services are provided by arrastre operators, value added network firms, authorized agent banks, entry lodgment firm, check clearing house firm and custom bonded warehouse operators.

There are six major components in the import process flow. These are (1) Validation of Ship Manifest/Airway Bill; (2) Filing of declaration (lodgment); (3) Assessment at the Formal Entry Division for selected entries; (4) Payment at the Collection Division; (5) Releasing at the Arrastre Operators; and (6) Reconciliation of payments vs. remittances at the Revenue Accounting Division. The function of the Bureau of Customs relative to its control on the goods starts when the importer/broker lodge or file the formal import entry and ends when the BOC issues release order to the

arrastre operator. The responsibility to physically receive custody and to release the goods from the port resides with the arrastre firms. In between the initial inspection upon arrival of the ships and release from the port, several institutions aside from the BOC perform various functions in terms of inspection, laboratory examinations, quarantine clearance, issuance of permits, licenses, collection of fees, etc.

The following sections provide an overview of the governance structure on import processing.

I.2.1 Bureau of Customs, Department of Finance (DOF)

The Bureau of Customs exercises primary responsibility for the supervision, control and management of all import and export cargoes, landed or stored in piers and terminal facilities, including container yards and freight stations. BOC serves as the focal point in the import process flow operationally and policy wise. Its mandate encompasses valuation and classification, customs policy, bonding operation, revenue collection, trade facilitation, international customs affairs, and anti-smuggling operations.

In order to cope with the increasing volume of imports, the BOC has automated key process flows including electronic link up with other government agencies and private institutions. The development of the ACOS, the core of BOC automation, was designed to have a paperless and queueless transactions that will not only speed up the release of goods, but also eliminate face-to-face contacts between brokers/importers and BOC personnel, and thus address graft and corruption at the BOC.

I.2.2 Revenue Office, Department of Finance

The DOF Revenue Office is responsible for processing applications for exemptions from import duties or taxes by qualified applicants and chartered entities. It has the power to review BOC decisions in cases of seizure, forfeiture, dumping, auction, abatement and refunds, protests, and other tariff and customs related matters.

Imported goods that can avail of tax exemptions are governed by Section 105 of the Tariff and Customs Code of the Philippines. These include aquatic products caught or gathered by fishing vessels of Philippine registry; equipment for use in the salvage of vessels or aircraft not available locally; personal and household effects belonging to Philippine residents returning from abroad; medals, cups and other small articles bestowed as trophies or prizes; vehicles belonging to foreign consultants; and importations for the official use of foreign embassies.

For tax-exempt government importations, the application goes through the Customs and Tariff Division (CTD) of the DOF Revenue Office. Importations by private individuals or entities are processed under the Internal Revenue Division (IRD). The CTD and IRD evaluate the application for tax exemption, which is then endorsed to the BOC.

I.2.3 Mabuhay Lane, Department of Finance

The DOF Mabuhay Lane was created through DOF Order 29-94 to expedite the processing of tax exemptions. The goal is to release tax exemption documents within 24 hours (from at least one week in the past) from the submission of complete documentary requirements. Also dubbed the Express Lane, the Mabuhay Lane caters exclusively to selected sectors, namely: (a) export-oriented firms; (b) importer of books, periodicals and other similar items or articles; (c) non-stock, non-profit educational institutions; (d) returning residents, persons coming to settle permanently, recalled foreign service personnel, and other persons similarly situated; (e) importation under Section 105 of Tariff and Customs Code pertaining to livestock; (f) importation by the Asian Development Bank; and (g) importation with the Department of Energy Recommendation for Energy Contract.

The DOF Assistant Secretary in charge of the Revenue Office exercises final approval of tax exemptions. Once approved, an endorsement to the BOC is prepared to complete the process. An express delivery system of data to BOC through the electronic duty/tax exemption system links the Mabuhay Lane and the BOC systems. This mechanism considerably reduced the processing time at the Mabuhay Lane to 3

hours and has shortened the processing time in BOC to 4 days. The system is presently down and awaiting funds for repair.

I.2.4 Bureau of Internal Revenue (BIR)

The BIR issues an Authority to Release Imported Goods (ATRIG) for imports for both value added tax and excise tax purposes. Application for an ATRIG for VAT purposes is filed with the Revenue District Office (RDO) while application for excise tax purposes is filed with the Excise Tax District Office (ETDO) where the importer is registered or required to register. An ATRIG is issued on all importations of articles exempt from VAT except those articles specifically identified and enumerated in the Circular issued jointly by the BIR and BOC. In the case of imported goods subject to excise tax, the application for an ATRIG is used for all importations, whether they are exempt or taxable, including raw materials for production, machineries, equipment, apparatus or any mechanical contrivances especially used for its assembly or production.

In case of doubt on the authenticity of the importer's claims on his application, the BIR may require submission of samples (taken by the BIR officer himself), literature on the product, and certifications from regulatory agencies authenticating the claims of the importer. Moreover, the BIR conducts an ocular inspection in the case of motor vehicles, and evaluates product information/literature in case the goods require no laboratory analysis. In cases requiring legal resolution the Legal Division of the RDO or BIR Central Office takes jurisdiction on the matter.

A BIR officer is mandated to oversee the physical release of imported goods, especially automobiles, from the BOC. The officer shall obtain a copy of proof of payment of excise tax from the importer will be included in the docket of ATRIG. The BIR officer also checks whether the required auxiliary official labels or internal revenue stamps are duly affixed on the package or container of imported goods prior to their release. Finally, he accompanies the shipment from the BOC to the place of destination.

I.2.5 Bureau of Treasury (BTr) and Banko Sentral ng Pilipinas (BSP)

Authorized Agent Banks (AABs) are allowed a holding period of 10 days for transmitting payments to the National Treasury. The task of determining remittances from AABs to the BSP and BTr starts with the BOC Revenue Accounting Division (RAD). RAD examines the payment file downloaded from the Philippine Clearing House Corporation (PCHC) server and uploads this to its Reconciliation System. Payments received by the AABs are transmitted through a consolidated remittance report to the BSP either through the Electronic File Transfer Information System (EFTIS) or through manual submission. The BSP sends an acknowledgment receipt to the AABs. The BSP transmits a copy of the consolidated remittance to the BTr after which BSP uploads the same file to its Lotus Notes Server. The Reconciliation System at RAD consolidates the electronic abstract of payment files and the consolidated remittance files from BSP. The Reconciliation System reconciles and generates a reconciled report showing the payments and remittance report per bank per month and per transaction. Discrepancies can then be noted and banks are advised on unremitted payments.

I.2.6 Philippine Ports Authority (PPA)

The PPA, an agency under the Department of Transportation & Communications, manages the utilization of port infrastructure, and through such mandate it has the sole authority to contract the operation of arrastre services. Vessels arriving at the port have to seek clearance first from the PPA before they are allowed to dock at the pier. The PPA assigns a pilot station or "parking" spot at sea where the vessel temporarily drops anchor to wait for the government inspection team. A boarding team composed of representatives from the Coast Guard, Bureau of Immigration (BI), the quarantine services of the Department of Health (DOH), Bureau of Plant Industry (BPI), Bureau of Animal Industry (BAI), Bureau of Fisheries and Aquatic Resources (BFAR) inspects the crew and cargo for harmful substances including diseases, while the BI checks for crew or passengers who might illegally enter the country. Upon clearance of the inspection team, the vessel coordinates with the arrastre operators where they may berth to unload cargo. At the berthing station, a three-man team of BOC guards

and inspector boards the vessel and stays there until unloading is complete. For hazardous cargoes that are not in containers, shipside discharging is allowed under supervision of relevant agencies. Wharfage fees are collected by the PPA prior to release of cargo.

I.2.7 Arrastre Operators

Arrastre operations have been privatized through a competitive bidding process undertaken by the DOTC. While arrastre operations are closely linked to the BOC, which is under the Department of Finance, their performances are subject to review by the DOTC/PPA.

The arrastre operator is responsible for the custody and safeguard of cargoes from the time they are unloaded from vessels until they exit the port. The responsibility includes providing special areas for refrigerated vans, moving the cargo to designated area where physical inspection can be conducted, and loading containers to trucks or lorries. [Recently, the Presidential Security Group has been empowered to inspect reefer vans to prevent smuggling and illegal entry of regulated goods such as meat and other foodstuff.]

The arrastre operator coordinates the release of cargo with the brokers and truckers. Once a release order is effected by the ACOS, the broker/importer pays the handling charges including wharfage fees. The ACOS clerk at the arrastre window triggers the printing of gate pass for the release of cargo.

An important function of the arrastre operators pertains to the transmittal of shipping manifest from the carriers to the BOC. The manifest, which describes the goods' generic name, weight, volume and identity of importer, is transmitted in electronic form via the Value Added Network (VAN). Airlines send their manifests through the Societe Internationale de Telecommunications Aeronautiques (SITA) while shipping lines course their manifests through e-mail and consolidators through the BOC-accredited Value Added Network. The validation of shipping manifest and/or Airway Bill precedes lodgment of import entries at the PCCI Entry Encoding Center.

I.2.8 Philippine Chamber of Commerce and Industry (PCCI)

A federation of private companies, PCCI, operates the Electronic Data Interchange (EDI) Gateway and the Entry Encoding Centers (EEC) that handle the manual lodgment of entries. The PCCI-EEC encodes relevant information concerning the goods such as name of importer, bank's code, broker, etc., based on which the ACOS assessment module automatically computes the taxes and duties to be paid.

I.2.9 Authorized Agent Banks (AAB)

There are about 140 bank branches in Metro Manila that are authorized to receive payment to the BOC. Through Project Abstract Secure, payment data (or abstracts) are encrypted at the bank and sent to BOC in diskettes or through leased lines through the PCHC server. The PCHC transmits back a confirmation receipt to the AAB sender. At the BOC, the payment file is downloaded from the PCHC server and decrypted by authorized BOC Collection Division personnel. After decryption, BOC transmit an acknowledgment receipt back to the PCHC server. The payment file is then matched with BOC's assessment. Once payment and assessment matched, the release of cargo can be ordered to the arrastre operator.

Cash payments are of three forms: (i) final payment using the electronic abstract of payment through authorized agent banks; (ii) advance payment through Letters of Credits; and (iii) additional payment of less than P5000. Non-cash payments include tax credits, deferred payment or tax exempted payment. These are processed by the DOF.

I.2.10 Value Added Networks (VANs)

VANs are Information Technology (IT) service providers accredited by the National Telecommunications Commission and the BOC as intermediary between the Bureau and its clients. There are two VANs in operation: Cargo Data Exchange Center Inc. (CDEC) and InterCommerce Network Services (INS). They serve the business community through effective utilization of technology and information. For example,

CDEC, Inc. developed the country's first portal where traders or importers can share relevant, accurate and real-time information in a secure environment. Through CDEC's facilities customs brokers/forwarders can create and transmit import entry declaration to the BOC, and receive the corresponding customs response.

VANs provide on-line connection of the brokers and importers to authorized agent banks for the payment of duties and taxes assessed by the BOC. Moreover, they provide on-line connection of importers, exporters and forwarders including such services as cargo or container tracking, OLRS, cargo reservations and flight schedules. An important service to consolidators is the submission of inbound manifest data to the BOC via the VANs.

Other agencies are involved in the import process albeit on a lesser but nonetheless important scale. These agencies issue import permits and clearance on selected goods. Their roles are described below.

I.2.11 Bureau of Import Services, Department of Trade & Industry

The BIS, created through Executive Order 133, processes (i) the application and issuance of Certificate of Authority to Import, Release Certificate and Endorsements to LTO, BIR and DOF of importation of regulated automotive replacement parts and brand new motorcycle parts; (ii) all government importation not qualified for exemption; and (iii) no-dollar importation of motor vehicles. Also covered are donations by select organizations or institutions, and importation of second-hand motor vehicles of returning residents or migrants.

The BIS does not conduct physical inspection of imported goods except for no-dollar importations (NDI). For NDIs, the BIS examines the goods to determine if additional taxes have to be paid. When the importer submits the Authority to Release Imported Goods (ATRIG) issued by the BIR, the BIS endorses a release clearance to BOC.

In the case of imported vehicles, the importer makes an advance payment of taxes and duties to BOC. An endorsement for the registration of the vehicle to the Land

Transportation Office is made by the BIS upon the presentation of the original copy of the Certificate of Payment of taxes and duties.

I.2.12 Bureau of Fisheries and Aquatic Resources (BFAR)

The Philippine Fisheries Code of 1998 (RA 8550) reconstituted the BFAR to become a line bureau of the Department of Agriculture. Part of its mandate is to implement an inspection system for import of fishery and aquatic products and fish processing establishments before the goods can be released by the BOC. A Fishery Quarantine (FQ) Inspector conducts pre-inspection at the port and submits an initial report, which forms the basis for the BFAR Officer-in-Charge (OIC) to release or hold the shipment. Pre-inspection includes full examination especially on the quality aspect of the shipment, which is the basis for the approval of the Import Permit. A release order is accomplished by stamping and signing the BOC Import Entry authorizing the delivery of the commodity.

Goods released from customs control are still subject to BFAR's safeguarding, inspection and final clearance. A 10-15% random sampling of the shipment is required for laboratory analysis. An FQ Inspector conducts follow up check in the storage area of the importer only to ascertain whether the shipment is being used as specified in the import permit. The final FQ inspection report based on the laboratory examination shall be the basis for the OIC to approve the Import Permit issued by the BFAR Central Office.

I.2.13 Bureau of Animal Industry (BAI)

BAI was created through RA 3639 on 1 January 1930. Executive Order 292 and the Administrative Code of 1987 mandate the BAI to prescribe standards for the quality of manufacture, importation, labeling, advertising, distribution and sale of livestock, poultry and allied industries.

Due to sanitary and phytosanitary concerns, all importers of meat and meat products must obtain a Veterinary Quarantine Clearance (VQC) Certificate or an Import Clearance issued by the BAI. For meat and meat products, a Veterinary Quarantine

Officer conducts the preliminary physical examination in the presence of a BOC Officer. For dairy products and feeds, however, BAI checks only the appropriate documents. A new regulation requires that all refrigerated shipments to be physically examined in the presence of the Presidential Security Group.

After the physical examination, the importer pays the necessary inspection fees and service charges. Henceforth, the BAI issues a release order and the approved Veterinary Quarantine Importation Certificate.

I.2.14 Bureau of Plant Industry (BPI)

RA 3639 created the BPI primarily to undertake plant research and development, and to improve the country's crop production. Presidential Decree 1433 further empowered the BPI to prevent the introduction and spread of pests in the country. Hence, part of BPI strategies is a strict implementation and enforcement of plant quarantine laws and regulations in the import and export of plant products as well as in the internal movements of restricted crops.

Upon entry of imported plants and plant products, the BPI conducts physical examination prior to their release from BOC custody. An application for BAI Import Permit, supported by pertinent documents, is accomplished by the importer. A BPI Inspector conducts pre-inspection at the port and submits an initial report, which shall be the basis for releasing or holding the shipment. A release order is accomplished by stamping and signing the BOC Import Entry authorizing the delivery of the commodity.

Upon receipt of the release order, the importer pays regulatory fees and service charges. BPI conducts follow up inspection at the importer's area to ascertain compliance with the terms of imports. Once compliance is established, BPI finally approves the Import Permit, which forms part of supporting documents in subsequent importation.

I.2.15 Philippine Economic Zone Authority (PEZA)

The Philippine Economic Zone Authority is tasked to manage and develop special economic zones designed primarily for export-oriented enterprises. RA 7916 defines an export processing zone as a "specialized industrial estate located physically and/or administratively outside the customs territory, predominantly oriented to export production". Enterprises in export processing zones are allowed to import capital equipment, raw materials and selected supplies free from duties and other import restrictions. Imports bound for these economic zones are usually classified as transshipments and need permit or clearance from PEZA.

In view of the priority given by the government to export enterprises at special economic zones, the Customs-PEZA Clearance Office (CPCO) was created as a "one-stop shop" to eliminate some of the processes handled by different offices of the BOC. The CPCO is charged with the responsibility of clearing import shipments consigned to the Zone enterprises and the official handover of said shipments to duly authorized zone enterprises' representatives or customhouse brokers who, in turn, shall be responsible for the safe transfer and delivery to destination economic zone.

I.2.16 Subic Base Management Authority (SBMA) and Clark Base Development Authority (CBDA)

The Subic Base Management Authority and Clark Base Development Authority are governing bodies of special economic zones that are technically outside the customs jurisdiction by reason of the special charter creating them. Nonetheless, the BOC is present in these bases to ensure that goods brought in for processing are not taken out to be sold/used in the local market. In cases where finished goods are allowed to be marketed or used locally, the BOC imposes the corresponding duties and taxes.

I.2.17 Presidential Security Group (PSG)

In response to reports of rampant smuggling of meat and other food products, the Office of the President has ordered the PSG to be present during inspection of refrigerated shipments to forestall unauthorized entry of regulated goods. Refrigerated container vans cannot be physically inspected without a representative of

the PSG. The move has resulted in apprehension of some shipments and, as some sectors aver, further delays in import processing.

Finally, certain commodities require clearance/permits from appropriate government agencies prior to importation into the country. These commodity groups and the agencies involved are as follows:

Table I.1. Agencies Providing Clearance Certificates to Specific Commodities

Commodity	Agency
acetic anhydride	Dangerous Drugs Board
rice and corn	National Food Authority—Office of the President
sodium cyanide, chlorofluorocarbon and other ozone-depleting substances	Environment Management Bureau—Department of Environment & Natural Resources
penicillin and derivatives	Bureau of Food and Drugs—Department of Health
coal and derivatives	Energy Regulation Commission
color reproduction machines	National Bureau of Investigation—Department of Justice; Banko Sentral ng Pilipinas
chemicals for the manufacture of explosives	Philippine National Police—Department of Interior and Local Government
pesticides including agriculture chemicals	Fertilizer and Pesticides Authority—Department of Agriculture
warships of all kinds	Maritime Industry Authority—Department of Transportation & Communications
radioactive materials	Philippine Nuclear Research Institute

I.3 REVIEW OF THE MODERNIZATION PROGRAM OF BOC

The first attempt to employ electronic data processing in the BOC predates by almost two decades the series of reforms instituted in the mid 1990s. Sometime in the 70s, BOC acquired a Sperry Univac computer to herald its modernization drive. However, the computer broke down in the late 70s, and lack of budgetary support for repairs and maintenance spelt the end of the BOC modernization. Since then BOC clients endured a manual, paper-based clearance process that took at least 90 steps and involved some 40 signatures.

It was during the Ramos presidency that a serious effort to reform and modernize the BOC was undertaken following the *Blueprint for Customs Development Towards the Year 2000,* under the tenure of Commissioner Guillermo L. Parayno. The effort received the full backing of President Ramos, who gave full support and regularly monitored its implementation. It is said that the accomplishments of the modernization program were in large measure due to the political support of the President and his Cabinet. The uninterrupted tenure of Commissioner Parayno (1992-98), allowed him to steer and oversee the program.

Some of the key accomplishments achieved during this period included: (i) implementation of a new processing system ASYCUDA++; (ii) introduction of risk analysis and threat assessment system; (iii) improvement in the infrastructure facilities of the BOC; (iv) introduction of the ACOS' paperless and queueless clearance processes; (v) privatization of operations of certain processes; and (vi) establishment of a Management Information System Technology Group. Recently, RA 9135 was passed empowering the BOC to conduct post entry audit.

I.3.1 Automated System for Customs Data Management (ASYCUDA++)

The Automated System for Customs Data Management is a computer software developed by the UNCTAD to provide a system that could be applicable to all customs offices worldwide. In 1995, the ASYCUDA was adapted to Philippine requirements. Unisys Philippines helped to integrate ASYCUDA with the BOC computer-based activities. The result was the Automated Customs Operations Systems (ACOS). Recently, the World Bank started a project to assess various customs software with the objective of determining the best customs operation software.

I.3.2 Automated Customs Operating Systems (ACOS)

The Automated Customs Operating Systems embodies several information technology systems designed to improve the delivery of service to the trade community especially in facilitating the flow of cargo. The main systems modules of

ACOS include: Validation of Electronic Inward Manifest, DTI/EDI Electronic Lodgment, Assessment, Selectivity System, Collection and On-Line Releasing System.

I.3.3 Selectivity System

The Selectivity System, which is part of the ACOS, was developed to ease the burden of physically examining all shipments. It is a risk analysis and threat assessment system using 17 parameters or screens where details of shipments are compared with. Each screen represents a set of variables where the profile of importer/brokers and the nature of commodities can be compared. The system generates a color code corresponding to the perceived risk (red for high risk, yellow for medium and green for low risk) resulting in less vulnerability to fraud, and better targeting/profiling of suspect goods. The system also includes a value range system to determine the probability of shipment's misvaluation. The elements of the screens are to be regularly reviewed and updated based on intelligence reports and experience of the BOC. An important objective of the review process is to preclude unscrupulous importers/brokers from "beating" the system.

I.3.4 Infrastructure Development

The bureau's modernization drive in 1990s resulted not only in the acquisition of computers and related equipment but also on the improvement of BOC's infrastructure facilities nationwide. The World Bank loan and the full support of the Executive Branch have been instrumental in raising BOC services to "world class" status. Sustaining this drive at present has been made difficult due to a ballooning government deficit. In the case of the BOC, capital funding has been on hold for the last four years.

I.3.5 Privatization

As part of the overall privatization program of the government, certain port and customs services were outsourced. This move resulted in government-private sector partnership in the areas of port arrastre operations, off-dock and container yard

operations, the provision of services involving electronic lodgment, payment and collection system, and IT services such as value added networks, consolidators, internet, etc.

I.3.6 Post Entry Audit (PEA)

The most recent effort to improve BOC's operations pertains to the passage of Republic Act No. 9135, as implemented by CAO 5-2001 and CMO 2-2002, which empowers the bureau to conduct post audit on the importer's/broker's transactions. A customs PEA is a post-release evaluation of relevant company practices and records to determine the integrity of information supplied to customs at the time of lodgment. The PEA system is an international best customs practice designed to facilitate trade by refocusing valuation control from the border to the tail end of the import clearance process.

The law ordains the establishment of a Post Entry Audit and Record Keeping Systems. It supplements efforts at compliance and implementation of the WTO Customs Valuation System (or Transaction Value Method). The authority includes examination of the books of accounts, business and computer systems and commercial data of the importer and broker, who are required by the law to keep certain import and business records and documents for a period of three years from the date of importation.

I.3.7 Management Information System Technology Group (MISTG)

In order to institutionalize the use of ICT and strengthen the decision support mechanism of the BOC, the Management Information System Technology Group was organized. The MISTG, headed by a Deputy Commissioner, is tasked to draw and implement the bureau's ICT strategic plan, to provide timely and accurate information on the BOCs operations, and to provide stakeholders access to the BOCs services.

MISTG's plan on data warehousing includes storage of electronic data files from internal and external sources. Aside from maintenance and safekeeping of the data, some of the key functions involve extraction, integration and transformation of

information. The main functionality is to create data mining capability for the agency and other stakeholders. Data warehousing is meant to strengthen the BOC executive information and decision support system.

I.3.8 Human Resource Development

The development of human capital is part of BOC's strategic plan. However, most of the plantilla positions are filled up which makes it difficult to hire competent personnel. Creating new positions has to be approved by the Department of Budget and Management. Considering the tight financial condition of the government, such requests can be granted only in exceptional cases and with executive intervention.

To upgrade skills, the Bureau conducts training seminars or sends its staff to local and foreign training programs, usually at no cost the BOC. In the case of its IT, MISTG absorbed key personnel of the SGS-BOC computerization project, when the SGS's contract on preshipment inspection expired. Such cases are rare however.

In the face of increasing commerce brought about by trade liberalization and globalization, BOC recognizes the urgency of modernizing its capabilities and facilities. The Philippine government regards trade facilitation as a key enabler for economic growth. Due to resource constraints however, BOC on its own cannot cope with the increasing demand of traders. Hence, a major component of BOC's strategy is to establish alliances and partnership with international and local stakeholders, in both the private and public sectors. This includes sourcing for development funds and privatizing key port and customs processes. Through such partnerships, BOC confronts the challenges of trade facilitation on a larger and innovative scale.

I.4 DESCRIPTION OF THE INFORMATION SYSTEMS OF BOC

The core of BOC Information Systems is the Automated Customs Operations Systems, an adaptation of the ASYCUDA software developed by the UNCTAD with the BOC's computer-based activities. ASYCUDA was designed to facilitate trading and transactions among members of the World Customs Organization and the World

Trade Organization. It is a computerized system designed to provide a standardized and integrated approach to customs operations, complete with automated assessment and collection of duties and taxes. ACOS embodies several main systems modules that are in turn briefly described.

I.4.1 Electronic Inward Manifest

Airlines submit to the BOC all cargo manifest in electronic format through the worldwide facilities of the Societe Internationale de Telecommunications Aeronautiques (SITA) or consolidator (CDEC). In the case of sea cargo, the shipping lines send the manifest to the arrastre operator which in turn forwards it to the BOC. BOC has to wait for the copy of the manifest from the arrastre operators.

The uploading of manifest by shipping lines through ACOS at the POM and MICP can be accomplished through: (i) diskettes, by the arrastre operators using the ACOS manifest downloading module; (ii) email, as an attachment by the arrastre operators using ACOS manifest downloading module; and (iii) consolidator, using a file transfer protocol between CDEC and the arrastre operator.

For air cargo, the uploading of manifest by airlines through ACOS at the NAIA can be accomplished through: (i) diskettes, by CDEC using the ACOS manifest downloading module; (ii) email, as an attachment by CDEC using ACOS manifest downloading module; (iii) system to system using file transfer protocol between CDEC and the BOC.

After receipt of the manifest, the arrastre operator downloads the manifest in their local workstation which then dycripts and converts the file to ACOS format. After conversion, the file is uploaded to the ACOS system for verification by BOC personnel. After the file is uploaded, the broker proceeds with the filing of the declaration via EDI or internet lodgment. At the Entry Encoding Center, the lodgment declaration of the importer is compared with the manifest transmitted by the arrastre operator.

I.4.2 Electronic Lodgment of Import Entries

There are four types of lodgment of entries: (i) filing at the Entry Encoding Center; (ii) filing through the Direct Trader Input; (iii) filing through the Electronic Data Interchange via accredited Value Added Networks; and (iv) Internet lodgment through VANs. Internet lodgment is presently not operational.

For manual lodgment, importers submit an accomplished Import Entry and Internal Revenue Declaration (IEIRD) form at the Entry Encoding Center, which is operated by the Philippine Chamber of Commerce and Industry. The paper declarations are digitized at the EEC for electronic processing by the ACOS. For self-assessed imports that have already paid duties and taxes at authorized agent banks, the EEC clerk examines whether the bank has a check-write at the back portion of the IEIRD signifying that amount of payment received by the bank. Encoding will not proceed without the "check-written" IEIRD form. The encrypted details of such payment are sent by the bank to the PCHC server where the collection division of BOC can access them to countercheck the payment with its own assessment. After encoding, the EEC clerk registers the transaction in the ACOS system whence the Selectivity system generates the color of the transaction. EEC then forwards the original documents to the Entry Processing Unit, where a clerk checks if all required documents are attached to the entry declaration. The entries and supporting documents are segregated according to processing section and color. The green lane entries are forwarded to the Collection Division and the other documents to the corresponding sections.

For paperless transactions, importers can lodge through the Direct Traders Input facility using their own computer terminal. The data are lodged remotely into the BOC computer system, which will show the computation of duties and taxes to be paid. Lodgment can also be done through the Electronic Data Interchange (EDI) in ACOS. EDI allows importers to lodge cargo declaration using their own terminals through a service provider. The system eliminated the redundancy in encoding the details and allowed the importer to interface it with its own system.

I.4.3 ACOS Selectivity System

The Selectivity System embodies an intelligence program that analyzes the risk profiles of shipments. It does this by comparing the shipment's particulars with about 17 reference files or screens, and then categorizing the shipments into high, medium or low risk transactions. A color code corresponding to the level of risk was designed: red for high risk requiring 100% physical examination of goods and documents; yellow for medium risk requiring examination of documents, and green for low risk shipments requiring no examination. A super green lane category has been added to accommodate highly reputable firms that have no incentives to smuggle or commit fraud in their imports.

I.4.4 Assessment System

Upon electronic lodgment of the import data, the ACOS assessment program automatically generates the taxes and duties to be paid, including a registration and assessment number, and the "entry number". A Temporary Assessment Notice is printed which serves as basis for the payment of taxes and duties at the authorized agent bank. Since the computation of taxes is uniform on a particular HS commodity code, both importer and government are assured that duties and taxes are correct.

I.4.5 Collection System

The Collection System is a combination of several computer systems: (i) Payment Abstract Secure; (ii) Automated Matching of Payments and Payables; (iii) Tax Exemption System; (iv) Payment Verification System; and (v) Project Reconcile. There is also a government account system involving government to government transactions that do not generate revenue for the government.

Payment Abstract Secure (PAS). This system assures that the data (or abstract) on the amount of duties and taxes paid by the importers are transmitted accurately and securely to the BOC Collection Division. In the past, these data were contained on

paper documents that were susceptible to tampering by syndicates--some payment documents were simply spurious. With PAS, payments made at the AABs are first encrypted by the banks and uploaded on the PCHC server. The files are downloaded from the server of PCHC by the Collection Division where they are decrypted by authorized personnel. These are then uploaded to Payment system for matching with the BOC assessment file. Once the files matched, a release order is sent to the arrastre operator. The uploading and downloading of the electronic abstract of payment files are in a batch process. Every fifteen minutes, 15 transactions are up/downloaded. In this manner the transmittal of the payment abstracts are secured.

I.4.6 Automatic Matching of Payment and Payable System (AMPP)

The Automatic Matching of Payment and Payable system processes only cash payments in the forms of final payment, advance payment received from AABs, and additional payments of less than P5000 received at the Collection Division tellers.

The AMPP System matches the assessed files in the payable database downloaded from the ACOS System with the decrypted payment files received from the AAB through the PCHC. Once matched, the Payment System generates a matched file which is converted to a flat file (the format of the ACOS System).

Every three minutes ACOS downloads the assessed files automatically to the AMPP (Automatic Matching of Payments and Payables) Interface connected to the Local Area Network of the Payment System. Downloading is not continuous and only 3 transactions are downloaded every time. After downloading, the PC Interface uploads the assessed files to the payable database file in the Payment System. The PC Interfaces were installed due to the cross-platform gap between the ACOS System (running UNIXware Operating System-Informix database) and the Payment System (running Novell Operating System-Xbase database).

I.4.7 Tax Exemption System

The Tax Exemption System is the electronic transmission of Tax Exemption Certificates from the Department of Finance to the BOC. Importers' requests for tax

exemption are processed by the Revenue Office and the Mabuhay Lane of the Department of Finance. These exemptions are provided for by law, and approved applications must state the particular law applied for the exemption. Before the system at the DOF broke down, the transmittal of approved applications is accomplished electronically. DOF is awaiting for the budgetary support to resume the system's operation.

I.4.8 Payment Verification System (PVS)

The Payment Verification System processes declarations with combined Cash Payment and Non-Cash Payments. There are cases where only a portion is paid in cash and the balance is paid either through tax credits certificate or exempted. The PVS is however not yet automated and the verification and issuance of the transaction certificates are manually processed by concerned agencies.

I.4.9 Revenue Reconciliation System

This system ensures that all payments of duties and taxes received by banks are ultimately remitted to the National Treasury after the allowable holding period of 10 days. The Bankers Association of the Philippines has developed a computer system whereby the payments data received by the BOC from the banks are compared with the data received by the National Treasury from the banks.

The Revenue Accounting Division of BOC is responsible for the reconciliation process. RAD examines the payment file downloaded from the PCHC server and uploads this to its Reconciliation System. Payments received by the AABs are transmitted through a consolidated remittance report to the BSP either manually or through the Electronic File Transfer Information System (EFTIS). The BSP transmits a copy of the consolidated remittance to the BTr and uploads the same file to the BSP Lotus Notes Server. The Reconciliation System at RAD consolidates the electronic abstract of payment files and the consolidated remittance files from BSP. The Reconciliation System reconciles the two files, and generates a reconciliation report showing the payments and remittance report per bank per month and per transaction. Discrepancies can then be noted and banks are advised on unremitted payments.

I.4.10 On-Line Release System (OLRS)

The OLRS was implemented to electronically transmit the cargo release instructions to the arrastre operators. It replaced some 40 manual procedures of preparing, issuing and handling the release documents to the cargo center concerned. Through OLRS, ACOS generates an electronic release instruction to the arrastre operators for the release of the cargo once payment is settled. OLRS also enhanced security by eliminating the chances of introducing spurious documents in the release process. Moreover, much of the petty graft associated with the physical cargo release has been eliminated.

I.4.11 Data Warehouse System (DWS)

DWS is a dedicated storage facility for information during the processing of transactions. Its external data sources include statistics on foreign currencies, trade etc., while internal sources come from the ACOS, the Valuation and Classification Library, among others. The information stored in the Data Warehouse can be used for a number of purposes such as valuation, audit, intelligence, and generation of trade statistics. The implementation of the DWS system is on hold pending budget support.

I.4.12 Automated Bonds Management System (ABMS)

Finally, the BOC maintains an Automated Bonds Management System designed to provide an updated status of bonds utilization and remaining bond balances. It is a database of bonds files, charged, and cancelled. The system can automatically generate due and demandable notices in cases where bond placements are short of security requirements. Unfortunately, due to technical problems bond processing is currently done manually.

I.5 CURRENT INITIATIVES TO IMPROVE CUSTOMS PROCEDURES

To realize BOC's modernization goals, several projects are being pursued to improve BOC procedures and cope with the challenges of world commerce. These initiatives are meant to sustain the reform process and project BOC's credibility in terms of commitment, sincerity and political will to customs modernization. Towards this end, reputable third party organizations are being tapped to provide an objective assessment of the state of affairs in the BOC through baseline and benchmark studies. These efforts are briefly described below.

I.5.1 Customs Modernization Blueprint.

The World Economic Forum, through the initiative of the Department of Finance, has chosen the BOC as the model for the development of a Customs Modernization Blueprint that will be replicable in other developing countries. The project has so far finished with Phase One of the modernization blueprint. The report focused on 27 recommendations for the short-, mid- and long-term modernization and reform of the BOC including a proposed funding strategy for BOC's modernization. The Commissioner has reported on the impact of the 27 recommendations to the Steering Committee composed of the World Bank, ADB, WCO, Transparency International, WTO, UNCTAD and the International Chamber of Commerce.

I.5.2 USAID's BOC Process Re-engineering Project.

Through the AGILE office, USAID has recently launched the BOC Process Re-engineering Project aimed at streamlining, standardizing and publicizing (SSP) the procedures of the release of imports.

I.5.3 BAP's Enhancement of the BOC Payment System.

Payment Abstract Secure System is a joint project of the BOC and the Bankers Association of the Philippines to automate the transfer of the electronic abstract of

payment of customs duties and taxes from the Authorized Agent Banks through the Philippine Clearing House Corporation to the BOC.

The proposed enhancement is expected to close some of the revenue leakages due to current gaps and manual processes in the payment systems; automate the non-cash payment system; provide a link-up for payments made at the provincial ports; improve the payment cycle from the current 1-16 hours to less than 30 minutes; introduce e-payment and mobile payment in the processing of payment of duties and taxes; upgrade the link between the BOC and the Bureau of Treasury; and develop an on-line payment tracking facility..

I.6 THE SUCCEEDING CHAPTERS

The next chapter reviews the methodology adopted in conducting the research following the way the test run was initiated. The process flow and time points investigated are also reviewed. This chapter will discuss in detail the actual sampling followed, the data collected (definitions, scope, storage, etc.), error corrections that have been used, and the methodology for analyzing the survey results. Chapter III describes the results of the survey. This will be done first in terms of comparative performance by ports (mainly seaport and airport since the data for the two arrastre services in the Port of Manila have been merged) and then some description of results by port. Some of the results from the analysis of variances are also reported in this chapter. Chapter IV reports the results of the interview survey based on the identification of the processes in the import procedures which were time-consuming (ranked according to the time process flow) and also based on the test run results. The interviews could not have taken place in time for this final report if it had been based on the results of the actual survey. The chapter reports the basis for determining the critical processes, the interview responses on the possible factors causing the delays, and the associated suggestions for improvement of the processes. Chapter V combines the hypotheses advanced by the Research Team with those obtained from interview survey and compares the two in order to analyze the efficiency of the import procedures along the critical processes. In Chapter VI some recommendations and conclusions are drawn up. In the summary of key findings, there are lessons from the methodology that are identified as well as lessons from the findings of the survey

themselves. Both these lessons are central to the Study's recommendations to improve the efficiency of the import processing system as revealed from the findings. The chapter ends with some suggestions for possible assistance to the stakeholders involved in the import processes that would in the end increase the speed of movement of goods from arrival to exit. These suggestions are not exhaustive but would point to where efforts both at the BOC and others in the import processing chain would yield benefits to the entire trade facilitation concerns of the government. Appendix A presents the statistical tables that support the discussion in Chapter III. Appendix B contains the Research Team's interview notes that form the basis of the discussion on Chapter IV. Appendix C discusses the process flows of the other agencies of government (other than the BOC) that are considered integral to the whole import flow chain. This section deals with how other agencies operate within the import stream, how they interact with the BOC, and what might be the directions for these agencies that would help in improving the speed of the release of goods. Finally, Appendix D is the work schedule followed by this study.

CHAPTER II
METHODOLOGY

The framework for the conduct of this study is based on the *Guide to Measure the Time Required for the Release of Goods* published by the World Customs Organization in 2000. The Guide provides broad yet useful reference in designing the study. Recognizing the wide variations in the environment under which different Customs administrations operate, the Guide shuns from prescribing detailed methodology to allow each country define the scope and approach of the study relevant to its purpose. Hence, there is a need for each country to define specific methodology within the context for which the study is being undertaken.

This chapter describes the approach taken to implement the Philippine study, underscoring some lessons learned from the exercise that may be relevant to countries with similar Customs environment.

II.1 Process Flow Charts and Time Points

Besides obtaining an indication of the efficiency of import procedures through measurement of time from arrival to release of goods, the Time Measurement Study is useful in identifying bottlenecks in the clearance system. This entails measuring and analyzing the time required for each intervening event between arrival and release of goods. Which intervening events are relevant to measure may be identified from the set of prescribed import procedures.

II.1.1 Formal Import Entry, Seaport

Figure II.1 outlines the process flow for formal or consumption imports entering the Philippine borders through the seaport.

The flow commences from the arrival of vessel at the port. At this stage, the Philippine Ports Authority manually records the date and time of arrival of the vessel at the pilot station and berth. Most cargoes are discharged after berthing, but discharging at the pilot station is allowed for some such as non-containerized hazardous cargoes.

At the point of discharge, *i.e.*, after the lashes have been removed, the responsibility for the cargo transfers to the private arrastre operator who then stores the cargo at the container yard inside the port premises and releases the same to the importer after receiving release instruction from the BOC.

Meanwhile the importer lodges an import declaration with the BOC. There are four avenues of lodgment: (1) at the Entry Encoding Center (EEC) operated by the Philippine Chamber of Commerce and Industry (PCCI); (2) through the Direct Trader Input (DTI); (3) through the Electronic Data Interchange (EDI) via the Value-Added Networks (VANs); and (4) through the internet passing through the VANs. At present, about 95% of lodgments is through the EEC.

When an import entry is filed at the EEC, the importer/broker secures an Import Entry and Internal Revenue Document (IEIRD) from the BOC, fills up the form, computes the applicable duties and taxes, and pays the amount at any of the 140 Authorized Agent Banks (AAB). Upon receipt of payment, the AAB "check-writes" the original IEIRD form to reflect the amount paid by the importer/broker. The IEIRD, together with the Invoice and Packing List, Bill of Lading, Supplemental Declaration on Valuation and Exemption Documents, are presented to the EEC for registration of import to the ACOS.

Exemption documents are obtained from other government agencies. As these agencies are not electronically linked to BOC, hard copies of the documents have to be presented to BOC. Only Tax Exemption Certificates issued by the Mabuhay Lane and Revenue Office of the Department of Finance could have been electronically transmitted to BOC. Yet as discussed in the previous chapter, the DOF-BOC PC Interface has not been operational for some years now.

The alternative modes of lodging import entry, *i.e.,* through the DTI, EDI or internet, eliminate the need for the importer/broker to pay the self-assessed duties and taxes through the bank before entry declaration. Nonetheless the importer/broker is required to have the electronic print-out of the Single Administrative Document (SAD) "check-written" by the bank for presentation to the Collection Division.

The lodgment is accepted by ACOS when the details of the declaration check against the electronic manifest prepared by the shipping line. The manifest is uploaded to ACOS in any of three ways: (1) through diskettes sent by the shipping line to the arrastre operator who then forwards it to BOC; (2) through e-mail attachment by the arrastre operator using ACOS manifest downloading module; (3) through a consolidator using a file transfer protocol between the VAN and the arrastre operator. Once the lodgment is accepted, the ACOS generates a Temporary Assessment Notice (TAN). It notifies the importer whether or not the cargo has been allowed to pass through Customs without further physical examination or documentary check. When the import is classified "green", ACOS immediately proceeds to generate an assessment of the duties and taxes. Otherwise, ACOS indicates whether the entry is selected "yellow", *i.e.,* requiring documentary check, or "red", *i.e.,* necessitating physical examination.

All documents submitted by the importers/brokers are forwarded by the EEC to the Entry Processing Unit (EPU) of BOC that checks on the authenticity and completeness of the documents and sorts them according to the results of the selectivity system. Entries selected green are sent to the Collection Division, while those selected yellow or red are passed on to the Formal Entry Division.

At the Formal Entry Division, the examiner (COOIII) reviews the documents and conducts physical inspection of cargo. Based on his evaluation, the examiner modifies the registration in the ACOS and forwards his findings to the appraiser (COOV). The appraiser subsequently validates the valuation of the examiner and reroutes the entry to the green lane in the ACOS. At this stage, the ACOS generates an assessment notice that the COOV prints out and transmits to the Collection Division.

Technically, green entries are not subject to physical examination nor to further document check. However when documents of green lane imports reach the Collection Division, these are forwarded to the Import Specialist Team (IST) whose primary function is to review all green lane entries. The IST has 2 hours from the time of receipt of documents from the Collection Division to evaluate the entries. If after the two-hour window the IST finds nothing in the documents to merit holding up the processing of the entry, the documents are reverted to the Collection Division. The IST however may recommend that the entry be placed on an "alert" status if there is a discrepancy between their review and ACOS-generated assessment of the entry. In this case, the entry would be considered as if it were selected "red".

Before the import entry is considered paid and eligible for release, at least 3 processes are observed. First, the AAB transmits the payment file to the Philippine Clearing House Corporation that then sends the same electronically to the BOC via the Project Abstract Secure System (PASS). The Collection Division downloads the payment files received from PCHC and uploads them to the Payment System. The downloading and uploading of payment files are done in batches at the average rate of 15 transactions every 15 minutes. Second, the files on assessed import entries in the ACOS are automatically transferred to the Payment System using a PC interface dubbed AMPP interface. This interface is necessary since the two systems run on different platforms – ACOS on UNIXware Operating System-Informix database, Payment System on Novell Operating System – Xbase database. Finally, a module in the Payment System known as the Automated Matching of Payment and Payable (AMPP) matches the file of assessed entries downloaded from the ACOS system with the payment files received from the AAB through the PCHC. When a match is found, the Payment System generates a matched file that is then uploaded to the ACOS using another interface called the OLRS interface. Immediately thereafter, ACOS generates a release message file that is transmitted to the Arrastre Operator via the Gateway PC or the BOC-Arrastre Interface PC.

The release message received by the Arrastre Operator is matched against their own Arrival of Goods System using the bill of lading and entry numbers as reference keys. The Arrastre system acknowledges the release instruction by sending a feedback message to ACOS. When the feedback is received, the status of the import entry in

ACOS is changed from “paid” to “release.” The release status triggers the Arrastre System to generate the gate pass if the importer/broker has paid the handling charges. The physical release of goods to the importer/broker follows.

Time stamps may be placed on at least 14 events in the process flow, namely: arrival of goods at pilot station and berth; discharge of cargo from the vessel; beginning and end of intervention by other agencies, lodgment, beginning and end of physical examination of cargo by Customs, modification of registration, rerouting to green lane, assessment, matching of payment of duties and taxes, Customs clearance, payment of arrastre fees and physical release of goods to importer. Of these events, only the intervention of other government agencies and customs examination of cargo have no automated or regularly monitored time data. The time information on other events can be obtained from the information systems of the arrastre operators, BOC and PPA. These time points are defined and their data sources are enumerated in Table II.1.

II.1.2 Warehousing Import Entry, Seaport

A warehousing import entry may be any of 3 types: (1) direct raw materials for use of an export-oriented firm; (2) indirect raw materials and spare parts for use by firms eligible for incentives under the Omnibus Investment Code (EO 226); and (3) equipment imported by MNCs and covered by re-export bond. Technically, imports of raw materials and equipment by firms located at the Philippine Export Processing Zone (PEZA) should be recorded as warehousing entry, but owing to special incentives extended to PEZA firms, they are instead classified as transshipment entry.

The clearance system of warehousing entries involves the same processes as the formal entry from arrival of goods until entry lodgment. As in the Formal entry, the Selectivity System in the ACOS is triggered automatically when the entry is lodged. Warehousing entries are, however, exempted from payment of Customs duties and taxes, thus the process flow does not include matching of payments. In lieu of payment of duties and taxes, the importer files a bond for the duties and taxes that would have been paid if the imported goods were locally consumed. Thus, instead of forwarding the documents of green lane imports to the Collection Division, the EPU sends them to the Bonds Division for bonds charging. Those selected yellow or red are forwarded to the Warehousing Assessment Division (WAD), the counterpart of the Formal Entry Division for consumption entries. At WAD, the examiner evaluates the documents and modifies the registered entry in ACOS. If the entry has been selected yellow, the appraiser checks on the required documents and amends the entry in ACOS. When selected red, the examiner inspects the cargo and documents his findings in ACOS. The appraiser performs the final review on the documents and reroutes the entry to green lane. When this is completed, the documents are forwarded to the Bonds Division.

To avoid securing bonds every transaction, the importer may post a “mother” bond. The Bonds Division keeps track of the balance of the bonds to determine if there is sufficient amount against which the current import transaction can be charged. The Automated Bonds Management System (ABMS) has been developed for this process, but owing to hardware limitations and some problems with procedures, the System has been inoperative since December 2002.

Importers are also saved from paying import processing fees every transaction as they have been required to deposit an amount with the AAB on which the fees, ranging from P150 to P500, are debited. The importer's bank account is charged online at the time of lodgment for green entries. In the case of selected entries, the account is debited after the entry has been evaluated by WAD.

From the Bonds Division, the entry declaration and other attached documents are sent to the Operating Division for manual posting. This Division is responsible for checking the importable and accounts quota balance of the importer, issuance of mission order and boat note, assigning of customs guard, and lifting the duty stop. When the entry has been cleared, the documents are sent to the Warehousing Documentation and Records Division (WDRD) for safekeeping. It should be noted that unlike in the formal entry, the lifting of duty stop, *i.e.* the Customs clearance, is manually performed for warehousing entries. Thus, the time information for Customs Clearance is not available in the ACOS. However, such information is uploaded in the arrastre's system as it is needed to trigger the generation of gate pass. The cargo is escorted by the Customs guard from the port to the Customs Bonded Warehouse (CBW) where it is placed under the custody of the CBW operator.

The processes described in the foregoing pertain to warehousing imports that arrive in the same port as where the entry is lodged. A second type of warehousing entry is one where the cargo arrives at one port and the entry is lodged in another. At the transit port, the importer/broker lodges a transshipment entry with the Bonds Division for issuance of a transshipment permit. The importer/broker presents the bill of lading and bonds to enter goods to CBW. The Bonds Division verifies the sufficiency of bonds filed and charges the bonds for the estimated duties and taxes. It then transmits the transshipment permit to the Operating Division that signs the permit and forwards the same to the Office of the Deputy Collector for Operations. This Office performs the final verification of documents before the imported goods are cleared for delivery to the CBW.

Even as the goods have already been delivered to the CBW, the importer is obliged to file a corresponding warehousing entry at any port of his choice within 5 days from the arrival of the vessel carrying the cargo[1]. The processing of such entry proceeds as if it were a purely warehousing entry except that the Operating Division does not have to issue a boat note since the goods have already been delivered.

Due to differences in the processing of these two types of warehousing entries, it is reasonable to make a distinction between these two types and to exclude one in the warehousing stratum. Otherwise, the stratum may be too heterogeneous for statistical analysis. Thus, for the purpose of this study, the definition of warehousing is limited to entries that have not been previously lodged as transshipment.

Compared to formal entry, there are more processes in the clearance system of the warehousing entries that are not automated and for which time stamps may be difficult to obtain. The filing of transshipment permit, for example, involves a purely manual process hence it is not in ACOS. Nonetheless, in the case of a purely warehousing entry, one is able to identify 13 events that are deemed critical in the process flow (Figure II.2). Of these, four have no automated time stamps, namely, the beginning and end of physical examination, and the beginning and end of bonds charging process. Table II.2 defines the time points for these events and their data sources.

[1] This period is extendable for another 5 days. A penalty of P100,000 to P200,000 is imposed on the importer for failure to file the entry within the prescribed period.

II.1.3 Transshipment Entry, Seaport

Transshipment entries are outside the scope of the study but remains of interest as they may be used as benchmark for evaluating the time required for release of other type of imports, particularly warehousing entries.

There are 3 types of transshipment: (1) foreign transshipment are goods transiting the Philippines and are bound to another country; (2) local transshipment are goods transiting a domestic port and bound to another domestic port; and (3) PEZA transshipment are goods bound to firms located at the export processing zones. Foreign transshipments are not considered imports hence the BOC does not keep records of those. Local transshipment is only a temporary classification since the goods are reclassified as formal or warehousing entry upon reaching the port of destination. On the other hand, PEZA transshipments are technically warehousing entries.

All time records on customs procedures, outlined in Figure II.3, are not included in the ACOS. It is possible however to track the time required for the release of PEZA transshipment using the arrastre's records. In addition, the BOC's release message file also contains records of customs clearance for PEZA transshipments.

Figure II.1 Formal Entry Flow of Sea Cargo

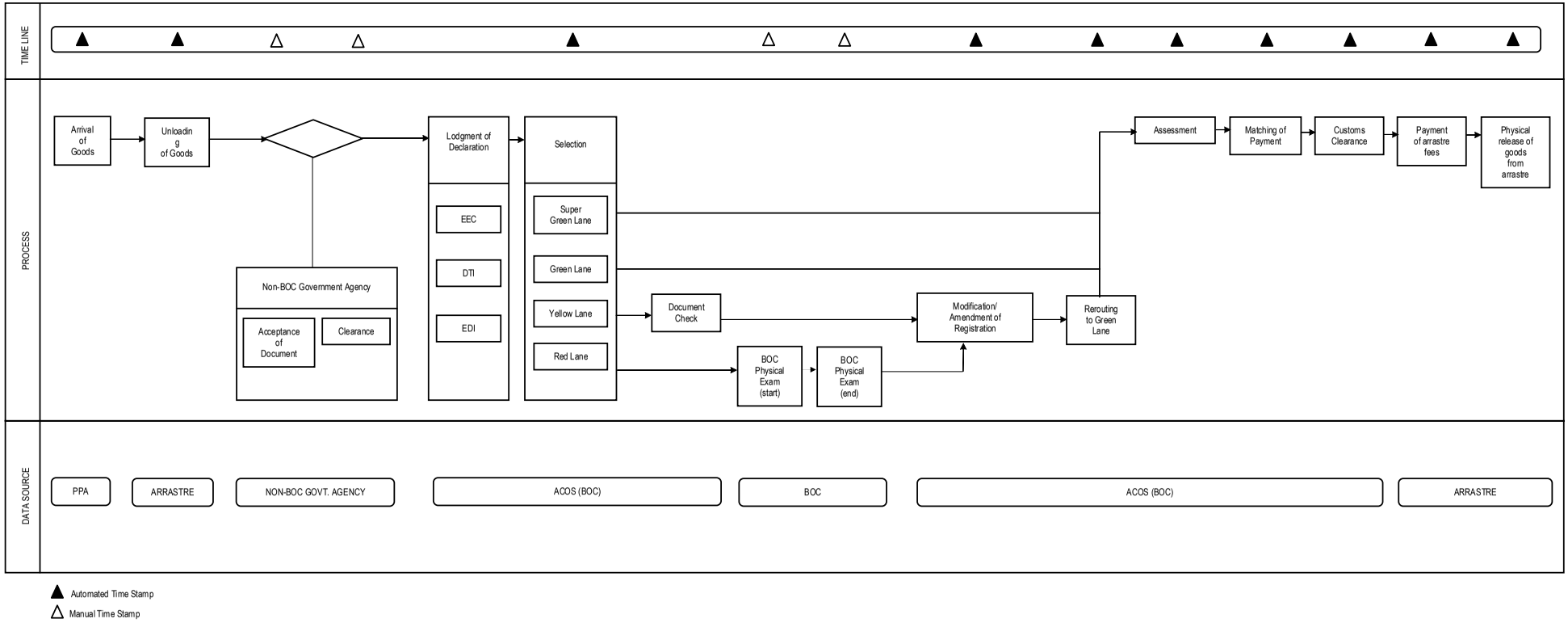


Table II.1 Time Points for Formal Import Process Flow, Seaport

	Time Points	Definition	End/beg. of Process	Automated	Source
1	Arrival of goods	Date and time of arrival of vessel at the pilot station	beg.	Yes	PPA
		Date and time of arrival of vessel at berth	end	Yes	PPA
2	Unloading of goods	Date and time of discharging the cargo from the vessel. (If the import entry includes several containers, date and time the first and last containers were discharged.)	end	Yes	Arrastre
3	Intervention by other agencies, beginning	Date and time of acceptance of complete documentary requirements and processing fees by the intervening agency	end	No	BFAR, BPI, BAI, BIR, BIS, Mabuhay Lane of DOF, RO of DOF
4	Intervention by other agencies, end	Date and time the intervening agency issues clearance to the import. (This usually coincides with issuance of import permit or release order.)	end	No	BFAR, BPI, BAI, BIR, BIS, Mabuhay Lane of DOF, RO of DOF
5	Lodgment	Date and time of import declaration. A Temporary Assessment Notice (TAN) is issued to the importer/broker, which indicates whether the entry has been selected "green", "yellow" or "red."	end	Yes	ACOS
6	Physical examination, beginning	Date and time of start of actual inspection of cargo	end	No	BOC (Import Entry and Internal Revenue Declaration, IEIRD)
7	Physical examination, end	Date and time when actual inspection is completed	end	No	BOC (IEIRD)
8	Modification/amendment of entry	Date and time when the BOC examiner modifies or amends and/or re-registers an import entry. (This	end	Yes	ACOS

	Time Points	Definition	End/beg. of Process	Automated	Source
		process applies only to imports that have been selected yellow or red. For yellow entries, this is considered the end of documentary control.)			
9	Re-routing to green lane	Date and time when the BOC examiner re-routes the import entry to green lane after the requirements of risk management system have been satisfied.	end	Yes	ACOS
10	Assessment	Date and time when the duties and other taxes applicable to the import entry have been ascertained	end	Yes	ACOS
11	Matching of Payment	Date and time when it is determined that the duties and taxes applied on the import entry have been fully paid. (This involves matching of payment message file from the banks with assessment outputs of ACOS.)	end	Yes	ACOS (payment file)
12	Customs clearance	Date and time of issuance by BOC of online release instruction to the arrastre	end	Yes	ACOS (release message file)
13	Payment of arrastre fees	Date and time of issuance of gate pass by arrastre after all cargo handling and storage fees have been paid	end	Yes	Arrastre
14	Physical release of goods	Date and time when the goods exit the gate of the Customs area. (If the import entry covers several containers, the time data corresponds to the exit from the gate of the first container.)	end	Yes	Arrastre

Figure II.2 Warehousing Entry Flow of Sea Cargo

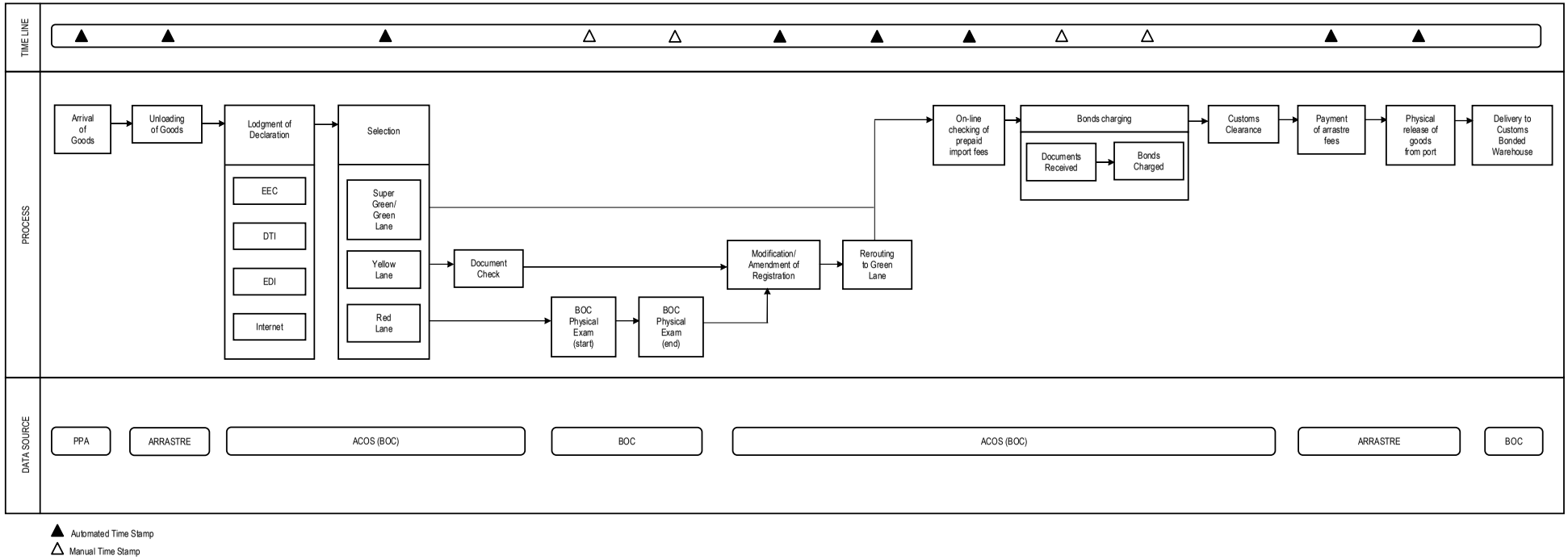


Table II.2 Time Points for Warehousing Import Process Flow, Seaport

	Time Points	Definition	End/beg. of Process	Automated	Source
1	Arrival of goods	Date and time of arrival of vessel at the pilot station	beg.	Yes	PPA
		Date and time of arrival of vessel at berth	end	Yes	PPA
2	Unloading of goods	Date and time of discharging the cargo from the vessel. (If the import entry includes several containers, date and time the first container was discharged.)	end	Yes	Arrastre
3	Lodgment	Date and time of import declaration. A Temporary Assessment Notice (TAN) is issued to the importer/broker, which indicates whether the entry has been selected "green", "yellow" or "red."	end	Yes	ACOS
4	Physical examination, beginning	Date and time of start of actual inspection of cargo	end	No	BOC (IEIRD)
5	Physical examination, end	Date and time when actual inspection is completed	end	No	BOC (IEIRD)
6	Modification/amendment/re-registration of entry	Date and time when the BOC examiner modifies or amends and/or re-registers an import entry. (This process applies only to imports that have been selected yellow or red. For yellow entries, this is considered the end of documentary control.)	end	Yes	ACOS
7	Re-routing to green lane	Date and time when the BOC examiner re-routes the import entry to green lane after the requirements of risk management system have been satisfied.	end	Yes	ACOS
8	Bonds charging, beginning	Date and time BOC receives the application for bonds charging	end	No	BOC
9	Bonds charging, end	Date and time when the application for bonds charging has been approved after it has been ascertained that the importer has issued enough bonds with the BOC to	end	No	BOC

	Time Points	Definition	End/beg. of Process	Automated	Source
		cover for the value of imports			
10	Payment of import processing fees	Date and time of online charging of the importer's account in the bank for the amount of import processing fees	end	Yes	ACOS
11	Customs clearance	Date and time of issuance by BOC of online release instruction to the arrastre	end	Yes	ACOS (release message file)
12	Payment of arrastre fees	Date and time of issuance of gate pass by arrastre after all cargo handling and storage fees have been paid	end	Yes	BOC (IEIRD)
13	Physical release of goods	Date and time when the goods exit the gate of the Customs area. (If the import entry covers several containers, the time data corresponds to the exit from the gate of the first container.)	end	Yes	BOC (IEIRD)

Figure II.3 Transshipment Entry Flow of Sea Cargo

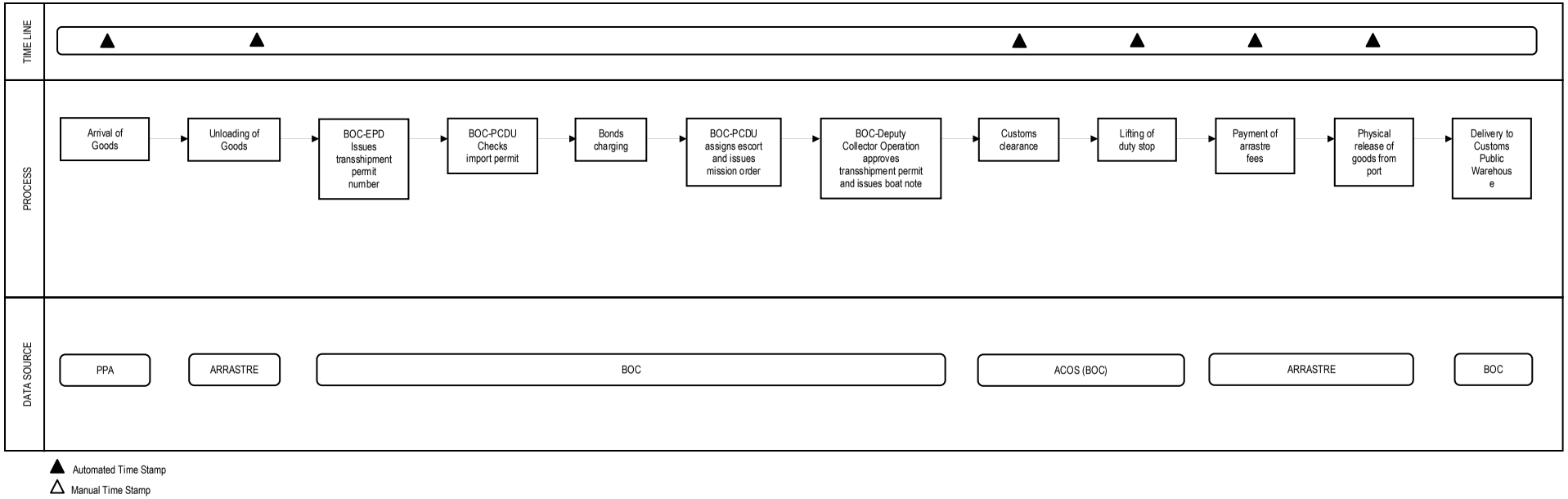


Table II.3 Time Points for PEZA Transshipment Process Flow, Seaport

	Time Points	Definition	End/beg. of Process	Automated	Source
1	Arrival of goods	Date and time of arrival of vessel at the pilot station	end	Yes	PPA
		Date and time of arrival of vessel at berth	end	Yes	PPA
2	Unloading of goods	Date and time of discharging the cargo from the vessel. (If the import entry includes several containers, date and time the first container was discharged.)	end	Yes	Arrastre
3	Customs clearance	Date and time of issuance by BOC of release instruction to the arrastre	end	Yes	ACOS (release message file)
4	Payment of arrastre fees	Date and time of issuance of gate pass by arrastre after all wharfage and storage fees have been paid	end	Yes	Arrastre
5	Physical release of goods	Date and time when the goods exit the gate of the Customs area. (If the import entry covers several containers, the time data corresponds to the exit from the gate of the first container.)	end	Yes	Arrastre

II.1.4 Formal Import Entry, Airport

Cargo clearance at the airport is perceived to shorter than at the seaport even as the process flows in the two ports are nearly identical. There are more processes in the airport that do not have automated time stamps. Apart from the time information on the intervention of other agencies and Customs physical inspection of goods, Figure II.4 shows that there are also no automated time stamps for cargo handling activities such as delivery to temporary storage and payment of cargo handling fees.

These two processes, however, have automated time stamps at the PSI and Cargohaus but not at PAIRCARGO that handles about 60% percent of imports at NAIA. Moreover, the information system of PAIRCARGO contains only the date, not the time of arrival of cargo at the warehouse. It does not also have the time of payment of cargo handling fees. Why these time information seems irrelevant to PAIRCARGO but not to its rival cargo handlers can be traced to the differences in their billing method. At PAIRCARGO, cargoes are billed by the day, not by the hour of storage, beginning from the scheduled time of arrival of aircraft. In contrast, PSI's charging starts at the time the goods have actually reached its warehouse.

The selected time points for formal entry process flow at the airport are defined in Table II.4. These definitions are consistent with those in the formal entry at the seaport.

II.1.5 Warehousing Import Entry, Airport

The process flow for a warehousing entry at the airport is also not different from the process flow for the same entry at the seaport. Yet as in the case of formal entry, the release time of warehousing import entries at the airport is deemed to be shorter than those in the seaport. Most cargoes are said to be released within 24 hours of arrival. This makes it more difficult to generate time data for processes without automated time stamps as the recording of time may cause delay in the normal release of goods.

Figure II.5 identifies the selected time points for the study and indicates those with automated time stamps. These time points are defined in Table II.5 with their corresponding data sources.

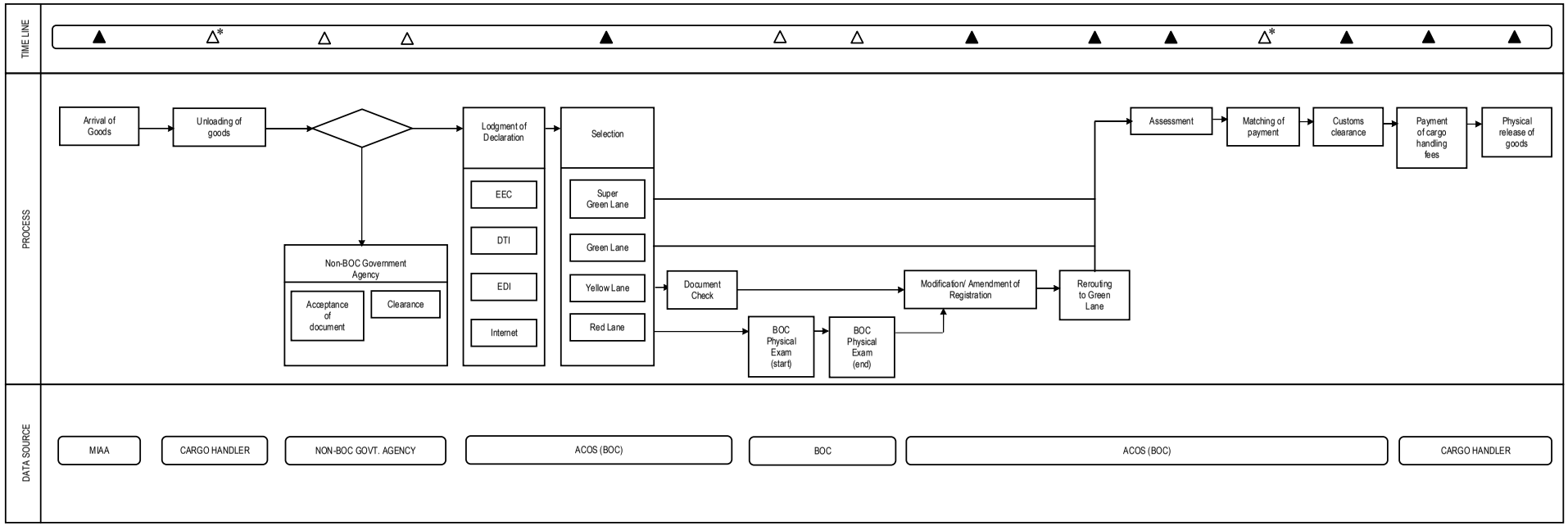
II.1.6 PEZA Transshipment Entry, Airport

In October 2001, the import process flow involving cargoes handled by NAIA and destined to the export processing zones has been reengineered to accelerate the release time. The new process flow is said to have cut down the release time from 6 to 3 hours.

A major innovation of the new system is the creation of Customs-PEZA Clearance Office (CPCO) that is to function as a "one-stop shop" thereby eliminating some of the processes handled by different offices of BOC. Instead of filing for transshipment permit, the importer/broker has to lodge the import declaration with the CPCO. The CPCO checks on required documents and issues the transit authorization note. While the lifting of duty stop is still the responsibility of the Deputy Collector for Operations, this function is temporary until an interface between ACOS and computer systems of the cargo handlers of NAIA is established. In all, the new system has reduced the documentary requirements from 13 to 4.

Since the particulars of the import entry are being encoded to ACOS, it is possible to do a statistical analysis that is difficult for manually processed PEZA transshipment entries at seaports. It is expected however that the new system will be rolled out in other port districts, particularly POM and MICP, when resources become available.

Figure II.4 Formal Entry Flow of Air Cargo



▲ Automated Time Stamp
△ Manual Time Stamp
* *Automated for some cargo handlers.*

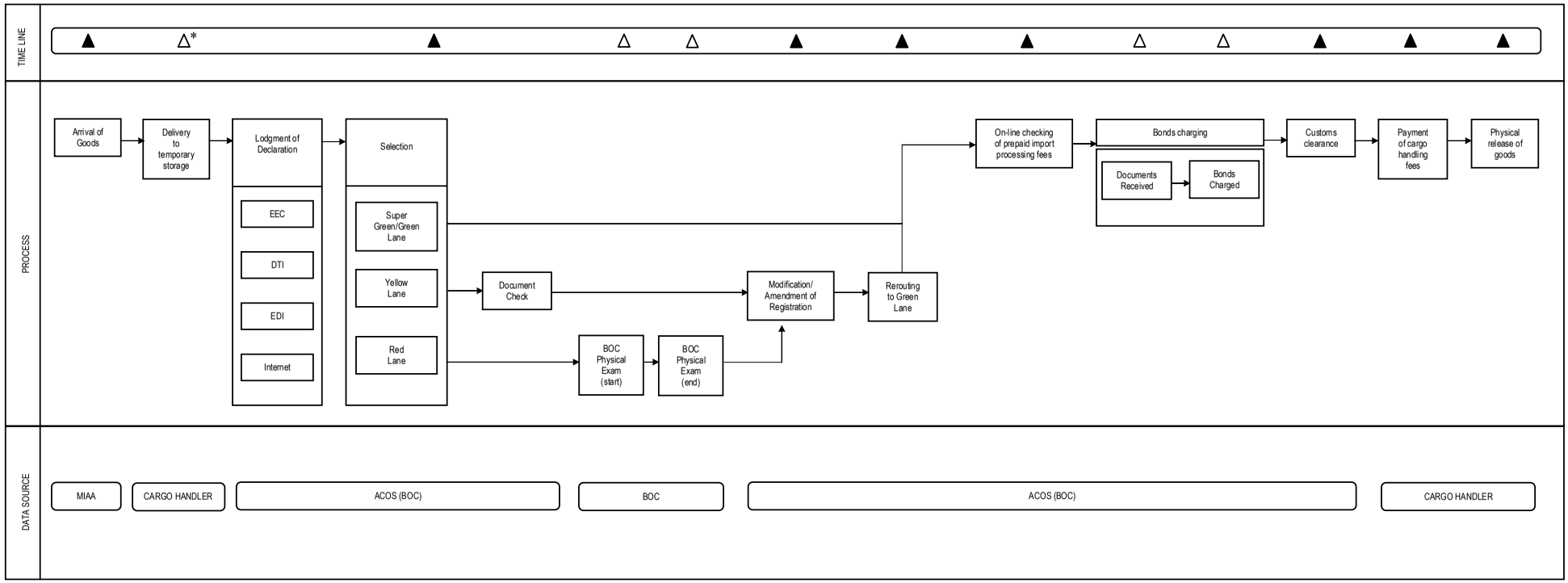
Table II.4 Time Points for Formal Import Process Flow, Airport

	Time Points	Definition	End/beg. of Process	Automated	Source
1	Arrival of goods	Date and time of landing of aircraft	beg.	Yes	MIAA
		Date and time of parking of aircraft	end	Yes	MIAA
2	Delivery to temporary storage	Date and time of transfer of cargo to the cargo handler's warehouse	end	No*	Cargo Handler
3	Intervention by other agencies, beginning	Date and time of acceptance of complete documentary requirements and processing fees by the intervening agency	end	No	BFAR, BPI, BAI, BIR, BIS, Mabuhay Lane of DOF, RO of DOF
4	Intervention by other agencies, end	Date and time the intervening agency issues clearance to the import. (This usually coincides with issuance of a document, e.g., import permit, release order.)	end	No	BFAR, BPI, BAI, BIR, BIS, Mabuhay Lane of DOF, RO of DOF
5	Lodgment	Date and time of import declaration. A Temporary Assessment Notice (TAN) is issued to the importer/broker, which indicates whether the entry has been selected "green", "yellow" or "red."	end	Yes	ACOS
6	Physical examination, beginning	Date and time of start of actual inspection of cargo	end	No	BOC (IEIRD)
7	Physical examination, end	Date and time when actual inspection is completed	end	No	BOC (IEIRD)
8	Modification/amendment/re-registration of entry	Date and time when the BOC examiner modifies or amends and/or re-registers an import entry. (This process applies only to imports that have been selected yellow or red. For yellow entries, this is considered the end of documentary control.)	end	Yes	ACOS

	Time Points	Definition	End/beg. of Process	Automated	Source
9	Re-routing to green lane	Date and time when the BOC examiner re-routes the import entry to green lane after the requirements of risk management system have been satisfied.	end	Yes	ACOS
10	Assessment	Date and time when duties and other taxes applicable to the import entry have been ascertained	end	Yes	ACOS
11	Matching of Payment	Date and time when it is ascertained that the duties and taxes applied on the import entry have been fully paid. (This involves matching of payment message file from the banks with assessment outputs of ACOS.)	end	Yes	ACOS (payment file)
12	Customs clearance	Date and time of issuance by BOC of release instruction to the cargo handler	end	Yes	ACOS (release message file)
13	Payment of cargo handling fees	Date and time of payment of all storage fees	end	Yes	Cargo Handler
14	Physical release of goods	Date and time when the goods exit the gate of the Customs area.	end	Yes	Cargo Handler

***No for PAIR-CARGO; Yes for ATI and Cargohaus.**

Figure II.5 Warehousing Entry of Air Cargo



▲ Automated Time Stamp

△ Manual Time Stamp

* *Automated for some cargo handlers.*

Table II.5 Time Points for Warehousing Import Process Flow, Airport

	Time Points	Definition	End/beg. of Process	Automated	Source
1	Arrival of goods	Date and time of landing of aircraft	beg	Yes	MIAA
		Date and time of parking of aircraft	end	Yes	MIAA
2	Delivery to temporary storage	Date and time of transfer of cargo to the cargo handler's warehouse	end	No*	Cargo Handler
3	Lodgment	Date and time of import declaration. A Temporary Assessment Notice (TAN) is issued to the importer/broker, which indicates whether the entry has been selected "green", "yellow" or "red."	end	Yes	ACOS
4	Physical examination, beginning	Date and time of start of actual inspection of cargo	end	No	BOC (IEIRD)
5	Physical examination, end	Date and time when actual inspection is completed	end	No	BOC (IEIRD)
6	Modification/amendment/re-registration of entry	Date and time when the BOC examiner modifies or amends and/or re-registers an import entry. (This process applies only to imports that have been selected yellow or red. For yellow entries, this is considered the end of documentary control.)	end	Yes	ACOS
8	Re-routing to green lane	Date and time when the BOC examiner re-routes the import entry to green lane after the requirements of risk management system have been satisfied.	end	Yes	ACOS
9	Bonds charging, beginning	Date and time BOC receives the application for bonds charging	end	No	BOC
10	Bonds charging, end	Date and time when the application for bonds charging has been approved after it has been ascertained that the importer has issued enough bonds with the BOC to cover for the value of imports	end	No	BOC
11	Payment of import	Date and time of online charging of the importer's	end	Yes	ACOS

	Time Points	Definition	End/beg. of Process	Automated	Source
	processing fees	account in the bank for the amount of import processing fees			
12	Customs clearance	Date and time of issuance by BOC of online release instruction to the cargo handler	end	Yes	ACOS (release message file)
13	Physical release of goods	Date and time when the goods exit the gate of the Customs area. (If the import entry covers several containers, the time data corresponds to the exit from the gate of the first container.)	end	Yes	BOC (IEIRD)

*No for PAIR-CARGO; Yes for PSI and Cargohaus.

Figure II.6 PEZA Transshipment Entry of Air Cargo

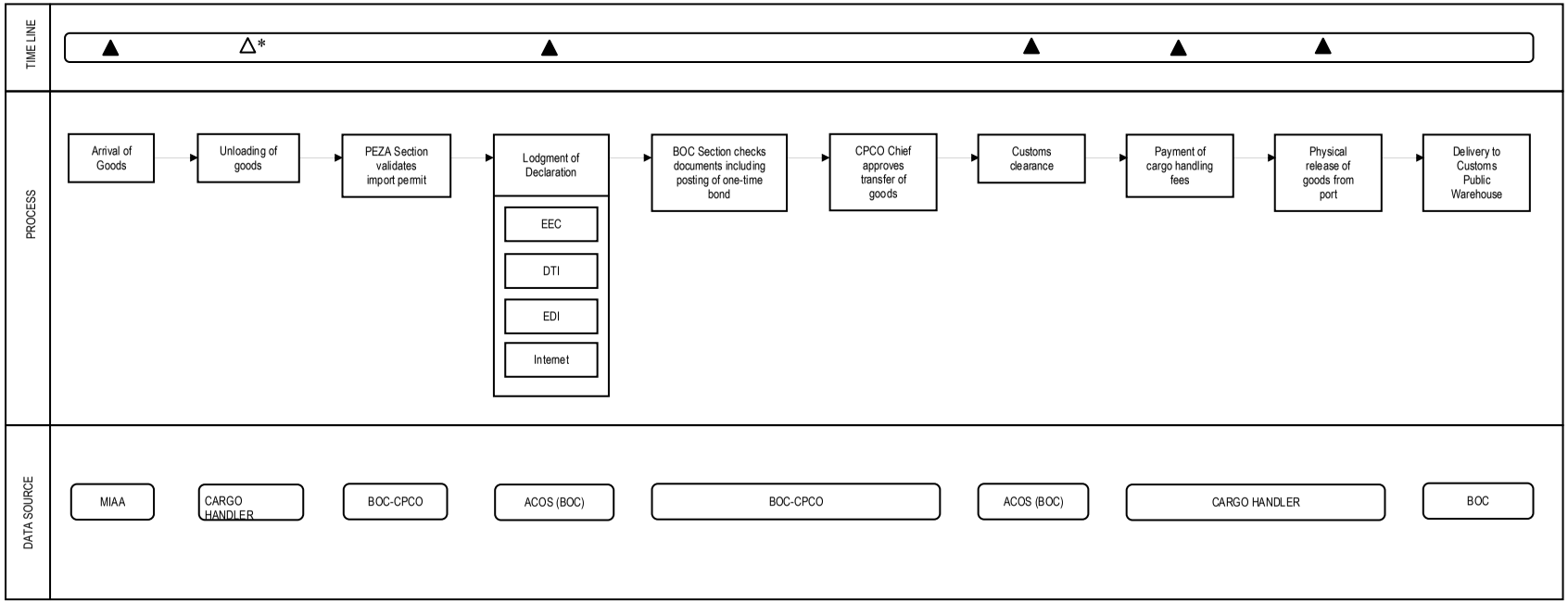


Table II.6 Time Points for PEZA Transshipment Process Flow, Airport

	Time Points	Definition	End/beg. of Process	Automated	Source
1	Arrival of goods	Date and time of landing of aircraft	beg	Yes	MIAA
		Date and time of parking of aircraft	end	Yes	MIAA
2	Delivery to temporary storage	Date and time of transfer of cargo to the cargo handler's warehouse	end	No*	Cargo Handler
3	Risk assessment of import entry	Date and time of issuance of Temporary Assessment Notice (TAN)	end	Yes	ACOS
4	Customs clearance	Date and time of issuance by BOC of online release instruction to the cargo handler	end	Yes	ACOS (release message file)
5	Payment of cargo handling fees	Date and time of issuance of gate pass by cargo handler after all cargo handling and storage fees have been paid	end	Yes	Cargo Handler
6	Physical release of goods	Date and time when the goods exit the gate of the Customs area. (If the import entry covers several containers, the time data corresponds to the exit from the gate of the first container.)	end	Yes	Cargo Handler

*No for PAIR-CARGO; Yes for PSI and Cargohaus.

II.2 SAMPLE SURVEY DESIGN

The objective of the survey is to generate statistical estimates of the average time between arrival and release of goods, as well as those of intervening events identified in the previous section, that would represent the import transactions of 2003. The sampling unit is an import declaration drawn from a list of declarations with known arrival and exit time.

The sampling method employed was stratified random sampling. This sampling design has several advantages over simple random sampling. Specifically, it is expected to yield lower bound on the error of estimation. Stratification is also more cost efficient as fewer samples are required in strata with smaller variances than would be necessary if uniform variance across strata is assumed. Moreover, it is feasible to obtain estimates of population parameters for subgroups of the population. Nonetheless, the design is only appropriate if it can be reasonably assumed that each of the strata is well-defined and that the variance within each stratum is relatively smaller compared to the population variance.

For the purpose of this study, five strata of import transactions have been identified by their port of entry and type of import declaration. These are: (1) consumption entries at POM; (2) consumption entries at MICP; (3) consumption entries at NAIA; (4) warehousing entries at POM; and (5) warehousing entries at NAIA.

The survey involves mainly extraction of data from the information systems of the BOC and arrastre/cargo handler, and manual recording of time information for processes involving other government agencies and for those without automated time stamps. Specifically, a set of import entries assessed during the period March 1 to 29 was obtained from ACOS. This was complemented by the information provided by arrastre/cargo handler operators on the arrival and exit of goods during the same period as well those provided by ports authority on the arrival of vessels.

For processes without time records such as the physical inspection of cargo by Customs, bonds charging and processing of import permit by other government agencies, the concerned personnel were requested to keep a record of time during the

study period. Concretely, the Customs examiners were requested to log the start and end time of inspection in the examination report section of the IEIRD form. Seven government agencies involved at various stages in import processing were asked to participate in the survey, namely: Bureau of Animal Industry (BAI), Bureau of Plant Industry (BPI), Bureau of Fisheries and Aquatic Resources (BFAR), Bureau of Import Services (BIS), Bureau of Internal Revenue (BIR), Revenue Office and Mabuhay Lane under the Department of Finance. These agencies were provided with worksheets on which to record the date and time of their receipt of documents from the importer/broker, start and end of their physical inspection of the cargo, and the release of import permit.

The data obtained from these various sources were used to construct a database of time stamps for a set of import transactions. The size of this database is based on the optimal sample size, *n*, calculated as follows:

$$n = \frac{\left(\sum_{i=1}^{5} N_i \sigma_i\right)^2}{N^2 D + \sum_{i=1}^{5} N_i \sigma_i^2} \qquad \text{eq. (1)}$$

$$\text{where } D = \frac{B^2}{4}; \qquad \text{eq. (2)}$$

N is the population, defined as the sum of formal and warehousing entries in the 3 district ports that are lodged and released in a normal year; N_i is the size of stratum i; σ_i is the standard deviation of stratum i; and B is the bound on the error of estimation. which is set at twice the standard error of population mean.

Given the variances, the size of the sample in each stratum is determined following Neyman's allocation formula:

$$n_i = n\left(\frac{N_i \sigma_i}{\sum_{i=1}^{5} N_i \sigma_i}\right) \qquad \text{eq. (3)}$$

This manner of allocating *n* ensures a relatively bigger sample in the stratum with higher variance.

II.3 TEST RUN

The feasibility of matching and reconciling the information taken from various sources to construct the required database was put on trial before the actual survey. The exercise also provided an opportunity to verify if the target time points in the process flows are measurable and to determine the time required for data assembly.

The test run period was from January 31 to February 6, 2003. Cargoes with declarations assessed by BOC between January 31 and February 5 and physically released to their importers by February 6 were used as samples. The basis for the selection was the set of ACOS entries provided by BOC. This set includes entries that were lodged before January 31 but were only assessed during the period.

To generate time data for some processes that are neither monitored in the information systems of BOC nor of those of other involved institutions, the concerned personnel were requested to maintain time registries from January 31 to February 6. Specifically, as was planned for the actual survey, the seven government units that have been requested to participate in the study were provided with worksheets on which they were to record the date and time of processing of import permit.

Apart from these worksheets, the research team also collected the relevant data sets from the arrastre/cargo handlers and ports authority. The arrastre operators, namely, Asian Terminal, Inc. (ATI) for POM, International Container Terminal Services, Inc. (ICTSI) for the MICP, cargo handlers PAIRCARGO and Philippine Skylanders, Inc. (PSI) for NAIA provided the information on cargoes that were released from their custody during the test run period. Records of arrival of vessels at the seaports and airport were obtained from the Marines Division of the Philippine Ports Authority (PPA) and Manila International Airport Authority (MIAA), respectively.

The test run proved the feasibility of constructing a unified database from disjoint information systems. The resulting database consists of cargo information and time

stamps for the process flow of 3,861 import entries. Time differences between arrival and exit and between intervening events in the process flow were estimated. The key statistical results are presented in Table II.7.

Table II.7 Key Statistical Findings in the Test Run

	POM		MICP		NAIA	
	Formal	Warehousing	Formal	Warehousing	Formal	Warehousing
Number of entries	800	61	2,674	17	293	16
Mean Time difference (hh:mm)						
Arrival of goods to lodgment	63:56:40	60:23:29	107:51:00	66:30:02	60:54:20	29:48:56
Lodgment to assessment/payment of IPF	13:57:46	22:38:35	22:53:39	8:38:47	14:45:16	0:22:18
Assessment/payment of IPF to Customs clearance	3:42:31	31:01:22	5:20:17	11:59:33	6:11:04	
Customs clearance to payment of arrastre/cargo handling fees	7:44:25	3:15:27	13:28:51	3:07:25	21:55:24	17:45:29
Payment of arrastre/cargo handling fees to release	8:28:09	7:49:34	8:06:31	12:36:38	0:21:28	0:27:32
Arrival of goods to release	97:47:02	119:33:00	88:02:08	102:52:00	69:55:21	44:08:28
Std deviation of time difference (hh:mm)						
Arrival of goods to lodgment	44:18:17	38:13:28	140:37:00	34:58:02	31:56:56	28:35:29
Lodgment to assessment/payment of IPF	22:41:08	28:46:39	42:51:32	13:32:55	26:19:31	0:26:34
Assessment/payment of IPF to Customs clearance	11:47:14	78:12:14	13:48:12	15:16:02	11:33:15	
Customs clearance to payment of arrastre/cargo handling fees	17:35:04	10:32:34	26:54:03	6:02:29	40:57:32	30:29:57
Payment of arrastre/cargo handling fees to release	18:24:18	10:48:15	14:06:53	20:45:26	0:09:05	0:28:03
Arrival to release	63:12:58	92:04:03	49:53:22	47:49:22	43:18:16	34:24:42

*The assessment process applies only to formal entries since warehousing entries are exempted from payment of Customs duties. The corresponding process for warehousing entries is payment of import processing fees.

While the test run results attest to the feasibility of the survey design, it made clear that eliciting the cooperation of other institutions outside of BOC is perhaps the most challenging part of the exercise. For some institutions, the issue of confidentiality and possible inference of their performance from the data set constrained them from providing the solicited information readily. Extracting the required information from the databases of the cargo handlers, while relatively simple, has to be done during off-hours as this can disrupt their normal operations. Thus, the data collection phase took longer than expected.

Another hurdle is reconciling the information from the cargo handlers with those of ACOS. Initially, the impression was that the variable common or easiest to retrieve from the databases of all concerned institutions is the bill of lading/airway bill number. It turned out that the bill of lading/airway bill is insufficient reference. For one, the cargo handlers at the airport encode the airway bill number differently from ACOS. At the seaport, there is no one-to-one correspondence between bill of lading and import entry numbers since two different import entries may have the same bill of lading number but different vessel registry. It took several runs of data extraction before the right matching keys can be found. Moreover, there is no single variable that can match all databases.

The test run also confirmed which events have recorded time data or whose time can be monitored with minimal disruption in the process flow. Two processes that require manual recording of time are physical examination of cargo by Customs and intervention by other agencies. The former proved to be more difficult to obtain than the latter.

To generate time information for physical examination of cargo, Customs examiners at NAIA were requested to indicate in the routing slip attached to the import document the time they receive it and the time it is forwarded to the appraiser. Although these times do not exactly coincide with the beginning and end of physical examination, this is deemed the second-best solution given that the examiners cannot be expected to record the time just before and after examination.

In any case, notwithstanding the instruction from the Deputy Collector, few examiners obliged. The research team checked the routing slips on import documents processed by the Formal Entry Division during the test run period and found only 85 of 473 slips (18%) filled up.

In light of this finding, it was anticipated that it would be difficult to compel the examiners to register the time of examination without written instruction from the Customs Commissioner. Thus, in the actual survey, a memorandum order to examiners had to be issued by the Customs Commissioner enjoining them to record the date and time of examination during the survey period. Specifically, the memo instructed the examiners assigned at the three ports to fill up the space provided in the Examination Return section of IEIRD for "Date Received" and "Date Released" with both date and time.

Surprisingly, the other government agencies were more cooperative in recording the time of their intervention. There were however few errors and lapses in recording and some illogical sequence of processes, *e.g.,* time of clearance preceding time of receipt of import document. Upon verification, it was learned that in some instances, the prescribed procedures are not strictly observed, hence the perverse time order.

Establishing the stage in the process flow where the intervention of a particular agency occurred, *e.g.,* issuance of permit, proved to be problematic. Many of the bill of lading numbers contained in the worksheet reports of the government agencies cannot be traced back to the ACOS files. There are two possible explanations for the mismatch. One is that the imports dealt with by the government agencies have not yet been assessed by Customs as of the cut-off date, hence they cannot be found in ACOS. A second possibility is error in manual recording of bill of lading/airway bill numbers. While this second explanation may be true for some entries, it is quite implausible to assume the errors to be pervasive.

From the test run, it was also learned that it would be less meaningful to take stock of all import lodgments as some imports may have been lodged several times. This is said to happen when in the initial lodgment, a cargo has been assessed to require physical examination (*i.e.,* selected "red"). In the event, the importer may opt to re-

lodge the import to avoid physical examination. Because of this anomaly, the true number of import transactions is less than the actual number of lodgments. It would therefore be advisable to use the assessment status, instead of lodgment status, as reference criteria for data extraction in ACOS.

II.4 ACTUAL SAMPLING

To calculate the optimal sample size based on equation 1 in Section III.2, some estimates on the variances of each stratum are required. These estimates were obtained from the set of import entries assessed in ACOS during October 1-31, 2002. The arrival dates of the cargoes were traced as far back in August 2002 for some entries, and the release dates were tracked forward until December 2002.

From those entries whose arrival and exit dates have been traced, the following variances in the arrival-exit time within each stratum are revealed:

Table II.8 Mean and Standard Deviation of Arrival to Exit Time of Import Entries Assessed in October 2002

	n	Mean	Std. Deviation
POM_consumption	5,464	159:22	269:58
POM_warehousing	542	342:25	291:07
MICP_consumption	9,051	163:00	231:34
NAIA_consumption	3,564	145:22	122:02
NAIA_warehousing	6.327	27:50	87:42

The standard error of the mean of all entries is 1:32:45 or 1.55 hours.[2]

The sample to be selected is meant to represent the population of import transactions in 2003. Since the actual size of import declarations for 2003 is yet unknown, the volume of transactions in 2002 is used as reference. In year 2002, the volume of import entries assessed in ACOS is as follows:

[2] It should not be surprising to find the estimated standard deviations of this set of entries to be larger than those in the test run given the limited period of the latter.

Table II.9 Import Entries Assessed by ACOS during Year 2002

	Formal	Warehousing
Port of Manila	91,148	34,133*
MICP	160,186	
NAIA	93,573	47,843*

*"Pure" warehousing entries only.

Using the foregoing information, the optimal sample size is calculated and allocated to the five strata proportional to the size of their variances.

Table II.10 Required Sample Size for each Port and Entry Type

	Formal	Warehousing	Total
Port of Manila	4,691	1,894	6,585
MICP	7,072		7,072
NAIA	2,177	800	2,977
Total	13,940	2,694	16,634

The required sample of 16,634 import declarations is 4% of total assessed import transactions in 2002.

To generate sufficient number of sample, all import entries in the 5 strata that have been assessed in ACOS from March 1 to 29, totaling 39,158, were considered. Of these entries, the arrival and release time of 19,590 cargoes were traced. The sample was drawn randomly from this subset using the Statistical Package for Social Sciences (SPSS) v. 11.

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Table II.11 Actual Sample Size for each Port and Entry Type

	Assessed imports 3/1-29/2003	Released as of 3/29/2003	Actual sample
Port of Manila			
Formal	8,077	5,756	4,734
Warehousing	6,036	2,052	1,906
MICP			
Formal	13,028	7,657	7,107
NAIA*			
Formal	8,292	3,300	2,216
Warehousing	3,725	825	807
Total	39,158	19,590	16,770

*Includes only cargoes handled by PAIRCARGO and PSI.

It would be noted that the sample was drawn from a bigger set of entries than is suggested in the WCO Guide. The Guide suggests drawing the sample from a set of entries that were lodged for seven consecutive days. From this group, a subset of cargoes that have been released two weeks after the week of lodgment is to be identified. This subset will comprise the "target population" from where the sample will be drawn randomly.

One limitation of such sampling design is that cargoes that are not released after two weeks from the time of entry lodgment are excluded from the target population. Although the average release time of all cargoes may be less than two weeks, the proportion to the total that these cargoes represent may be significant, especially when the distribution is highly skewed to the right of the mean. In the case of the Philippines, the large standard deviations of time differences clearly indicate a highly skewed distribution. Thus, following the WCO methodology strictly will bias the results.

But a more fundamental reason for deviating from the WCO suggested methodology is that it will not generate enough import entries with complete processing time to satisfy the required sample size. Already, the required sample comprises 85% of all entries assessed and released by March 29. Constricting the target population to entries lodged for one week, *e.g.,* from March 8-14, and released two weeks after, *i.e.,* by March 29, will not produce enough sample.

The calculation of the optimal sample size for each of the stratum is understandably large given the wide variation of the observed arrival-release time for cargoes during October 2002. Consequently, in order to ensure the results of the survey would be close to 95 percent of their true values, the size turned out to be several times larger than had been anticipated if these are to represent the release time of typical cargoes in 2003. The wide divergence of values found in the test run, in the estimation of the mean and variances for October 2002 as basis for the calculation of optimal sample sizes, and the results of the survey itself indicate the likely prevalence of non-sampling errors reflecting a wide range of measured time between arrival and exit of goods in the Philippines. The selection of a large sample size would ensure greater reliability of the results.

II.5 DATA COLLECTION

Since the samples are drawn retrospectively, the information on the specific time an import entry passed through a particular stage of the clearance chain has to be "back-traced" in ACOS and information database of arrastre and cargo handlers. Thus, this study could not have been completed without the cooperation of those agencies that maintain the information databases. Several processes however have to be monitored as they happen since there are no records of these on the available information databases, namely: physical inspection of goods, bonds charging and intervention of other government agencies. The following data sets were obtained from various agencies:

Table II.12 Data Collected from Various Agencies

Agency	Data Description and Period Covered	Form
BOC	ACOS file from 3 ports (POM, MICP, NAIA): 09/01/02 – 02/06/03; 03/1-28/03	Electronic
	Release message file on imports from 3 ports: 09/01/02 – 02/06/03; 03/1-28/03	Electronic
	Bonds charging data from 3 ports: 01/01/03 – 02/06/03; 03/1-29/03	Hard copy
	ACOS file from 3 ports (POM, MICP, NAIA): 03/01/03 – 03/29/03; 03/1-29/03	Electronic
BPI	Accomplished time worksheets for 3 ports: 01/31/03 - 02/06/03 and 03/01/03 – 03/28/03	Hard copy
BAI	Accomplished time worksheets for 3 ports: 01/31/03 - 02/06/03 and 03/01/03 – 03/28/03	Hard copy
BFAR	Accomplished time worksheets for 3 ports: 01/31 - 02/06/03 and 03/01 – 03/28/03	Hard copy
BIS	Accomplished time worksheets but only for issuance of Certificate of Authority to Import (CAI); no time worksheet for goods requiring physical examination, specifically vehicles under the "no-dollar importation policy:" 01/31/03 - 02/06/03 Accomplished time worksheets: 03/01/03 – 03/28/03	Hard copy

Agency	Data Description and Period Covered	Form
BIR	Accomplished time worksheets for the issuance of Authority to Release Imported Goods (ATRIG) covering goods subject to excise tax: 01/31/03 - 02/06/03 and 03/01/03 – 03/28/03	Hard copy
Mabuhay Lane, DOF	Accomplished time worksheets for 3 ports: 01/31/03 - 02/06/03 and 03/01/03 – 03/28/03	Hard copy
RO, DOF	Accomplished time worksheets for 3 ports: 01/31/03 - 02/06/03 and 03/01/03 – 03/28/03	Hard copy
ICTSI	Time data on arrival and release of goods: 09/26/02 –12/31/02; 1/31/03-02/06/03; 03/01/03 – 03/29/03	Electronic
ATI	Time data on arrival and release of goods: 09/01/02 – 02/06/03; 03/01/03 – 03/29/03	Electronic
PPA	Time data on arrival of vessels at the pilot station and berth of POM: 08/01/02 – 02/06/03; 03/01/03 – 03/29/03 Time data on arrival of vessels at the pilot station and berth of MICP: 08/01/02 – 02/06/03; 03/01/03 – 03/29/03	Electronic
MIAA	Time of landing and parking of cargo and commercial aircraft in Terminals 1 and 2: 08/01/02 – 03/31/03	Hard copy
PAIRCARGO	Time data on arrival and release of goods: 09/01/02-12/31/02; 01/31/03 – 02/06/03; 03/01/03 – 04/04/03	Hard copy
PSI	Time data on arrival and release of goods: 09/01/02 – 02/06/03; 03/01/03 – 03/29/03	Electronic

Limited information was obtained on time of physical examination of goods and bonds charging. Despite the Customs Commissioner's memorandum on the District Collectors of the 3 ports regarding the recording of time of physical examination, less than half of the IEIRD forms have complete time information. Of the 3 ports, NAIA has the highest compliance: 2,683 of 4,217 formal and warehousing entries are with time stamps by Customs examiners. At MICP, only 287 of 2,082 entries have time

information. There was no monitoring of physical examination for entries lodged at the Port of Manila because of miscommunication.

It should be stressed that the time monitored may not reflect the actual physical examination of cargoes but the time of completion of examination report by Customs examiner. Whether a physical examination was actually conducted cannot be verified from the information on hand. Actual examinations are said to be intermittent notwithstanding the high proportion of import entries that are selected red. This claim is corroborated by recent investigation by the Risk Management Group (RMG) of BOC which shows that only 5% (178 of 3,280) of import entries at POM that were selected red from February 17-28, 2003 has been examined.

Compliance is even more dismal in the case of bonds charging where only 13 of 701 entries in the bonds logbooks have time stamps. The time information for bonds charging could have been available electronically if only the computer server for the Automated Bonds Management System (ABMS) were functioning. This system would have been able to capture the time when the bonds are charged. Since the server went down in December 2002, all bonds charging transactions are manually recorded in logbooks maintained for each importer's account.

Table II.13 Time Recording of Customs Physical Examination of Goods and Bonds Charging

	No. of entries	With date & time	%
Physical Examination			
NAIA			
Consumption	2,698	1,356	50.3
Warehousing	1,519	1,327	87.4
MICP			
Consumption	2,082	287	13.8
Bonds Charging	701	13	1.9

Time stamps obtained for Customs clearance are also incomplete. Only formal entries are issued OLRS messages but the arrastre and cargo handlers have been requested to maintain records in their databases of when they have received the message that a specific entry has cleared Customs, even if the duty stop is manually lifted. Thus there should have been time stamps for Customs clearance, at least in the databases of the arrastre and cargo handlers. As it turned out, only the arrastre

operators have complete time records of Customs clearance. The BOC has only records for those entries with OLRS messages. In the absence of OLRS message for a warehousing entry and since the cargo handlers at the airport are less methodical in time record keeping than their counterparts at the seaport, there is no available information on the time of Customs clearance for warehousing entries at the airport.

Nor is the information on time of payment of cargo handling fees complete. One of the cargo handlers participating in this study keeps track only of the date of payment, not the time, since their billing is based on days, not hours, that the cargo is warehoused. To accommodate the requirements of this study, this particular cargo handler monitored the time of payment but only those of entries released from their custody between March 28 and April 4, 2003.

II.6 TIME SYNCHRONIZATION AND ERROR CORRECTION

As the time information were extracted from various databases, it is important to have a common reference time. Ideally, the clocks of the various agencies should have been synchronized prior to the start of the survey. But since this will require adjusting the clocks of computer servers, it is deemed more practical to simply note the time differences and adjust the data. For this study, the time in the ACOS server is used as reference.

Table II.14 Time Adjustment Used in Data Obtained from Various Sources

Agency	Time Adjustment (mins.)
BOC: Payment server	+2
PAIRCARGO	+9
Bureau of Fisheries and Aquatic Resources	
POM	+11
MICP	+11
NAIA	+5
Bureau of Plant Industry	
POM	+9
MICP	+9
NAIA	+5
Bureau of Animal Industry	
POM	+4
MICP	+4
NAIA	+5
Mabuhay Lane, Department of Finance	+9
Revenue Office, Department of Finance	+4

Agency	Time Adjustment (mins.)
Bureau of Import Services	+2
Philippine Ports Authority	
POM	+12
MICP	+8
Asian Terminal Inc.	+6
International Container and Terminal Services Inc.	+8
Bureau of Internal Revenue	+7
Manila International Airport Authority	+8
Philippine Skylanders, Inc.	-3

Apart from adjustment for consistency with ACOS time, no other adjustment is made on computer-generated time stamps. These are presumed accurate and if there are inconsistencies with manually recorded time, the latter is assumed in fault. Indeed, most of the errors discovered after the time differences between processes have been calculated are due to data encoding.

Where time differences do not conform to the logical sequence of processes, the data is verified with the concerned agencies. Since it is difficult to retrace the original documents for each entry, the following is observed: if a plausible explanation can be found, the data is assumed correct; otherwise, it is excluded. For several import entries, for example, the rerouting to green lane comes before the modification/amendment of registration. Selected entries are supposed to be rerouted to green lane by the appraiser only after the examiner has modified the registration with his evaluation report. It was learned however that there are instances when the screen button for rerouting is hit by "mistake" by some other examiner/appraiser not assigned to the case. Thus, the data can be regarded as accurate. The time difference between modification of registration and rerouting to green lane for these import entries are excluded in the calculation of mean time.

For some import entries at one of the seaports, the time stamps for the payment of arrastre fees and debiting of importer's account for the import processing fee precede that of Customs clearance. This is contrary to the prescribed procedure. However, it may happen when duty stop (*i.e.* Customs clearance) is manually lifted. Thus, no adjustment on data is deemed necessary.

There are a few entries where the time of unloading of cargoes precedes the arrival of vessel at the pilot station. This case is regarded as error by the arrastre. The data for other cargoes discharged from the same vessel is examined and the median time for the batch is used for the erroneous entry.

Some import entries are found to have release time ahead of the OLRS time stamp. There are 35 of these in the sample: 12 entries at one of the seaports and 23 entries at the airport. The data on these entries have been twice checked against the files obtained from BOC and concerned arrastre and cargo handler. They are found to be in order. As such, the data are considered accurate. One plausible explanation on why the release time precedes the Customs clearance time is that these imports were issued temporary release authority pending resolution of some valuation issue. Subsequently, the issue was resolved and an OLRS message was created. But it came after the goods have been released to the importer.

For some entries, the release time is earlier than lodgment. This applies to 3 consumption entries in one of the seaports and 91 warehousing entries at the airport. Having rechecked the data with the files provided by BOC, arrastre and cargo handler, the Research Team surmised that these imports were initially lodged as transshipment and released by the arrastre/cargo handler after the transshipment entry has cleared Customs but before the corresponding consumption/warehousing entry was lodged.

Overall, error correction is applied sparingly to no more than 5% of the total sample. This is to be expected since most of the time stamps are computer-generated, hence difficult to dispute.

The challenge in constructing the database for this study however lies in matching the different data sets. Several factors hinder a quick matching:

- Airway bill numbers are coded differently in ACOS and in the cargo handlers' databases. To be able to match ACOS with PAIRCARGO's database, the serial number of IEIRD must be used. But ACOS does not have a uniform coding of serial numbers for warehousing entries. While the serial numbers in PAIRCARGO's data set correspond to the actual 8-digit code in

the IEIRD, this is not the case in ACOS. Some warehousing import entries in ACOS are identified by alphanumeric codes that are not the actual IEIRD serial numbers. For PSI, the matching key is the import entry number since the serial number is not available in their database. This is feasible for consumption entries, but not for warehousing entries since PSI obtains the import entry number only from OLRS. If the duty stop were lifted manually (hence, no OLRS), PSI would not have a record of the entry number for the particular imports. Thus, for warehousing entries, where duty stops are manually lifted, it was not feasible to match PSI's database with ACOS.

- The convention used for coding manifest numbers is different for ACOS compared to the arrastre and PPA. For example, manifest number "UGM0012-03" in ACOS appears as "UGM-012" in arrastre's and PPA's records.

- Different import entries may have the same bill of lading numbers but different vessel registry numbers. In the absence of one-to-one correspondence between import entry, bill of lading and vessel registry numbers, information on all three variables are necessary. The data made available by ATI has vessel registry and bill of lading numbers but without import entry number. ICTSI, on the other hand, provided import entry and bill of lading numbers but not vessel registry number.

- The other government agencies involved in the import process flow do not keep track of the import entry numbers since their intervention may occur before lodgment. They have only records of the bill of lading numbers. Many of these numbers cannot be traced to the ACOS data set obtained by the research team. There are two possible reasons for this. One is error in manual recording. Another is that the import entries corresponding to these unmatched bill of lading numbers have not been lodged and assessed as of March 29. Given the significant lag between arrival of goods and lodgment, the latter possibility is a more likely explanation for the small number of matches found between ACOS and agencies' records.

Despite these difficulties, it is possible to construct the end-to-end time flow for 19,590 import entries. A random sample of these entries is the subject of statistical analysis.

II.7 METHODOLOGY FOR ANALYZING THE DATA

The differences between the time stamps for the processes identified in II.2 are calculated and analyzed. Table II.15 enumerates the pertinent time differences.

Table II.15 Time Differences Used in the Analysis

Code	Time difference between
PILBERTH	Arrival of vessel at pilot station and arrival of vessel at berth
BFCONTIN	Arrival of vessel at berth and unloading of first container covered by the import declaration
FLCONTIN	Unloading of first container and unloading of last container covered by the import declaration
LCONTLOD	Unloading of last container in the import declaration and lodgment
LODREGMO	Lodgment and modification of registration
REGREROT	Modification of registration and rerouting to green lane
REROTASE	Rerouting to green lane and assessment
ASESPAYC	Assessment and matching of payment of Customs duties and taxes
PAYCRELC	Matching of payment of Customs duties and taxes and Customs clearance
RELCPAYA	Customs clearance and payment of arrastre/cargo handling fees
PAYAEXFC	Payment of arrastre/cargo handling fees and release (exit) of first container covered by the import declaration
EXFCEXLC	Release of first container and release of last container covered by the import declaration
ROTPREPD	Rerouting to green lane and online checking of prepayment of import processing fee
PREPDREL	Online checking of prepayment of import processing fee and Customs clearance
PRPDPAYA	Online checking of prepayment of import processing fee and payment of arrastre fee
LANDPARK	Landing of aircraft and parking of aircraft
PACONTIN	Parking of aircraft and unloading of cargo
PILOTEXI	Arrival of goods (arrival of vessel at pilot station, in case of seaport; time of landing, in case of airport) and release of (first container) goods from arrastre/cargo handler
PILOTLOD	Arrival of goods (arrival of vessel at pilot station, in case of seaport; time of landing, in case of airport) and lodgment
LODGASES	Lodgment and assessment (for consumption entry) or online checking of prepayment of import processing fee (for warehousing entry)
ASESRELC	Assessment (for consumption entry) or online checking of prepayment of import processing fee (for warehousing entry) and

Code	Time difference between
	Customs clearance
LODGRELC	Lodgment and Customs clearance
AGRECREL	Receipt of application document and clearance by intervening agency
AINSPECT	Start and end of physical examination by intervening agency
LODAGDOC	Lodgment and receipt of application document by intervening agency
ARELCREL	Clearance by intervening agency and Customs clearance
INSPBEND	Start and end of physical examination by Customs
LODINSPB	Lodgment and start of physical examination
INSPEREG	End of physical examination by Customs and modification of registration

The above time differences are considered as dependent variables that are analyzed against the following set of characteristics of import declarations, namely:

a) agency intervention: whether the entry requires a permit or supporting document from other government (non-BOC) agency;
b) broker mediation: whether the processing of import declaration was facilitated by a broker who is organizationally distinct from the importer/consignee;
c) type of manifest: consolidated or single;
d) type of entry: whether the declaration is consumption (formal) or warehousing;
e) containerized or non-containerized;
f) duties/taxes status: whether the import is exempted from payment of Customs duties and taxes;
g) VAT status: whether the import is exempted from payment of value-added tax;
h) mode of payment of Customs duties: cash or non-cash [All entries with automated matching of payment are classified as having been paid in "cash" since the current automated payment system of the BOC can only handle cash transactions. If the payment combines cash and non-cash, *e.g.,* part of duties liability is paid in cash, another is satisfied with a tax credit certificate, then the mode of payment is considered non-cash.];
i) alert status: whether a "hold order" was issued by the BOC requiring the cargo to be fully examined;
j) origin of imports: country of origin classified according to ASEAN, China, East Asia, Europe, Japan, US and Others;

k) color selectivity: classification of selectivity system, *i.e.,* super green, green, yellow and red;
l) lodgment day: day of the week of lodgment;
m) lodgment time: whether lodgment is made in the morning (AM) or afternoon (PM);
n) weekend inclusive: whether the processing period (from arrival to release) includes weekend;
o) mode of lodgment: lodgment through Entry Encoding Center (EEC), Electronic Data Interchange (EDI), or Direct Trader's Input (DTI);
p) value of imports: dutiable value of imports classified according to the following grouping: (1) less than or equal to P100,000; (2) between P100,000 and P500,000; (3) between P500,000 and P1,000,000; (4) between P1,000,000 and P5,000,000; and (5) more than P5,000,000;
q) timing of lodgment: whether lodgment is before or after the arrival of goods; and
r) timing of clearance: whether Customs clearance is before or after the arrival of goods

In time measurement studies of other countries, the key statistical measures used to analyze time differences are simple mean and standard deviation. Such methodology is followed here. However, the characteristic of the data prompts the use of other statistical procedures.

In particular, given the presence of extreme values in the data, the mean becomes a less meaningful measure of central tendency. Other statistical measures, in particular, the median and mode, which are not affected by extreme values can better represent the population. But since there is also interest in comparing the subpopulations, *e.g.,* the release time of consumption and warehousing entries, thus the mean is still a relevant statistics in this study.

The wide variations in the time values within each of the stratum considered, as shown by the test run results, suggests that simple comparison of the means should not be a basis for any conclusion on the differences between import groups. A more

rigorous statistical procedure is needed to determine if the mean differences are due to chance or reflect true differences between groups.

For this reason, a One-Way Analysis of Variance (ANOVA) is employed. ANOVA is useful in examining the significance of differences between sample means. It is applied here to test the differences in the average release times (*i.e.,* time required from arrival of goods to release from arrastre/cargo handler) and in the average clearance times (*i.e.,* time required from lodgment to Customs clearance) of subgroups of imports, classified according to the above parameters. Conclusions regarding differences between import groups will be based on this analysis.

All statistical procedures employed in this study use the Statistical Package for the Social Sciences (SPSS), version 11.