

# Table of Contents

1	INTRODUCTION	
1.1 1.2	About the COBD II Code Reader Safety Precautions and Warnings	3 3
<b>2.</b> 2.1 2.2 2.3 2.4 2.5 2.6	GENERAL INFORMATION On-Board-Diagnostics (OBD) II Diagnostic Trouble Codes (DTCS) Location of the Data Link Connector (DLC) OBD II Readiness Monitors OBD II Monitor Readiness Status OBD II Terminology	4 6 6 6
3. 3.1 3.2 3.3 3.4 3.5 3.6 3.7	PRODUCT INFORMATION Device Description Specifications Accessories Included Navigation Characters Vehicle Power Product Setup Vehicle Coverage	9 9 10 10 10 10
<b>4.</b> 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8	OBD DIAGNOSTICS System Status Reading Codes Erasing Codes Live data Viewing Freeze Frame Data Retrieving I/M Readiness Status Viewing Vehicle Information Exiting the OBDII Test	14 15 16 17 18 19 21 22
<b>5.</b> 5.1	SOFTWARE UPDATES Software Downloads	22
6.	DECLARATION OF CONFORMITY	23



## WARRANTY AND SERVICE

#### Limited One Year Warranty

This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for its intended purpose.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission. This guarantee does not affect your statutory rights.

## 1 INTRODUCTION

## 1.1 About the CEOBD 2 Code Reader

This powerful device will help you take charge of your vehicle's maintenance and servicing needs. Today's vehicles use computer control systems to ensure peak performance and fuel efficiency while reducing pollutants in the vehicle's emissions. These systems also have the ability to perform self-testing and diagnostics on various vehicle systems and components, and provide valuable information to aid in servicing and repair. However, these sophisticated systems often required expensive devices and test equipment in order to retrieve this information. Until now, consumers had to rely on professional service technicians to maintain their vehicles in top condition.

The OBD 2 Code Reader brings the power of the technician into your hands in a cost-effective, easy-to-use package. Whether you are a "put the key in and go" consumer, hobby mechanic or skilled DIYer, the Code Reader offers the features and functions you need to take control of your vehicle's testing, servicing and maintenance needs.

## 1.2 Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or the code reader, read this instruction manual first and observe the following safety precautions as a minimum whenever working on a vehicle:

- 1. Álways perform automotive testing in a safe environment.
- 2. Wear safety eye protection that meets approved standards.
- Keep clothing, hair, hands, tools, test equipment, etc, away from all moving or hot engine parts.
- Operate the vehicle in a well-ventilated work area; exhaust gases are poisonous.
- Put blocks against driven wheels and never leave the vehicle unattended while running tests.



- Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.
- Always put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.
- Keep a fire extinguisher suitable for fuel / chemical /electrical fires nearby.
- Don't connect or disconnect any test equipment with the ignition on, or engine running.
- Keep the code reader dry, clean and free from oil, water and grease. Use a mild detergent on a clean cloth to clean the outside of the device when necessary.

## 2. GENERAL INFORMATION

## 2.1 On-Board-Diagnostics (OBD) 2

The first generation of On-Board Diagnostic (called OBD I), was developed by the California Air Resources Board (ARB) and implemented in 1988 to monitor some of the emission control components on vehicles. As technology and the desire to improve On-Board Diagnostic capability increased, a new generation of On-Board Diagnostic regulations is called "OBD II".

The OBD II system is designed to monitor emission control systems and key engine components by performing either continuous or periodic tests of specific components and vehicle conditions. When a problem is detected, the OBD II system turns on a warning lamp (MIL) on the vehicle instrument panel to alert the driver typically by the phrase of "Check Engine" or "Service Engine Soon". The system will also store important information about the detected malfunction so that a technician can accurately find and fix the problem.

Here below follow three pieces of such crucial information:

- Whether the Malfunction Indicator Light (MIL) is commanded 'on' or 'off';
- Which if any, Diagnostic Trouble Codes (DTCs) are stored;
- Readiness Monitor status

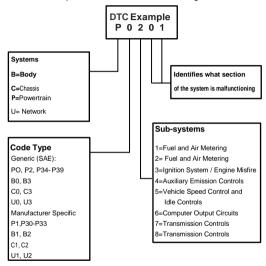
## 2.2 Diagnostic Trouble Codes (DTCs)

OBD II Diagnostic Trouble Codes are codes that are stored by the on-board computer diagnostic system in response to a problem found in the vehicle. These codes identify a particular problem area and are



intended to provide you with a guide as to where a fault might be occurring within a vehicle. OBD II Diagnostic Trouble Codes consist of a five-digit alphanumeric code. The first character, a letter, identifies which control system sets the code. The other four characters, all numbers, provide additional information on where the DTC originated and the operating conditions that caused it to set.

Below is an example to illustrate the structure of the digits.



## 2.3 Location of the Data Link Connector (DLC)

The DLC (Data Link Connector or Diagnostic Link Connector) is the standardised 16-cavity connector where diagnostic scan tools interface with the vehicle's on-board computer. The DLC is usually located 12 inches from the centre of the instrument panel (dash), under or around the driver's side for most vehicles. Consult the vehicle owners service manual for the location of the connector if the DLC cannot be found.



### 2.4 OBD II Readiness Monitors

An important part of a vehicle's OBDII system are the Readiness Monitors, which are indicators used to find out if all of the emissions components have been evaluated by the OBD II system. Periodic tests are run on specific systems and components to ensure that they are performing within allowable limits.

Currently, there are eleven known OBD II Readiness Monitors (or I/M Monitors). Not all monitors are supported by all vehicles and the exact number of monitors in any vehicle depends on the motor vehicle manufacturer's emissions control strategy.

Continuous Monitors - Some of the vehicle components or systems are continuously tested by the vehicle's OBDII system, while others are tested only under specific vehicle operating conditions. The continuously monitored components listed below are always ready:

- 1. Misfire
- 2. Fuel System
- 3. Comprehensive Components Monitoring (CCM)

Once the vehicle is running, the OBDII system is continuously checking the above components, monitoring key engine sensors, watching for engine misfire and monitoring fuel demands.

Non Continuous Monitors - Unlike the continuous monitors, many emissions and engine system components require the vehicle to be operated under specific conditions before the monitor is ready. These monitors are termed non-continuous monitors and are listed below:

- 1. EGR System
- 2. O2 Sensors
- 3. Catalyst
- 4. Evaporative System
- 5. O2 Sensor Heater
- 6. Secondary Air
- 7. Heated Catalyst
- 8. A/C system



## 2.5 OBD II Monitor Readiness Status

OBDII systems must indicate whether or not the vehicle's PCM's monitor system has completed testing on each component. Components that have been tested will be reported as "Ready", or "Complete", meaning they have been tested by the OBDII system. The purpose of recording readiness status is to allow inspectors to determine if the vehicle's OBDII system has tested all the components and/or systems.

The powertrain control module (PCM) sets a monitor to "Ready" or "Complete" after an appropriate drive cycle has been performed. The drive cycle that enables a monitor and sets readiness codes to "ready" varies for each individual monitor. Once a monitor is set as "Ready" or "Complete", it will remain in this state. A number of factors, including erasing of diagnostic trouble codes (DTCs) with a scan tool or a disconnected battery, can result in Readiness Monitors being set to "not ready". Since the three continuous monitors are constantly evaluating, they will be reported as "Ready" all of the time. If testing of a particular supported non-continuous monitor has not been completed, the monitor status will be reported as "Not Complete" or "Not Ready."

In order for the OBD monitor system to become ready, the vehicle should be driven under a variety of normal operating conditions. These operating conditions may include a mix of highway driving and stop and go, city type driving, and at least one overnight-off period. For specific information on getting your vehicle's OBD monitor system ready, please consult your vehicle owner's manual.

## 2.6 OBD II Terminology

**Powertrain Control Module (PCM)** - OBDII terminology for the onboard computer that controls engine and drivetrain.

Malfunction Indicator Light (MIL) - Malfunction Indicator Light (Service Engine Soon, Check Engine) is a term used for the light on the instrument panel. It is to alert the driver and/or the repair technician that there is a problem with one or more of vehicle's systems and may cause emissions to exceed federal standards. If the MIL illuminates with a steady light, it indicates that a problem has been detected and the vehicle should be serviced as soon as possible. Under certain conditions, the dashboard light will blink or flash. This indicates a severe problem and flashing is intended to discourage vehicle operation. The vehicle on-board diagnostic system cannot turn the MIL off until the necessary repairs are completed or the condition no longer exists.



**DTC**--Diagnostic Trouble Codes (DTC) that identify which section of the emission control system has malfunctioned.

Enabling criteria - (Also termed Enabling Conditions). These are the vehicle-specific events or conditions that must occur within the engine before the various monitors will set, or run. Some monitors require the vehicle to follow a prescribed "drive cycle" routine as part of the enabling criteria. Drive cycles vary among vehicles and for each monitor in any particular vehicle.

**OBDII Drive Cycle** - A specific mode of vehicle operation that provides conditions required to set all the readiness monitors applicable to the vehicle to the "ready" condition. The purpose of completing an OBD II drive cycle is to force the vehicle to run its on-board diagnostics. Some form of a drive cycle needs to be performed after DTCs have been erased from the PCM's memory or after the battery has been disconnected. Running through a vehicle's complete drive cycle will "set" the readiness monitors so that future faults can be detected. Drive cycles vary depending on the vehicle and the monitor that needs to be reset. For vehicle specific drive cycle, consult the vehicle's owner's manual.



## 3.3 Accessories Included

- 1). User Manual
- 2). USB Cable provides power to device and communicates between device and vehicle.
- 3). Mini CD ROM containing diagnostic software.

## 3.4 Navigation Characters

Characters used to help navigate the code reader are:

- 1) ">" Indicate current selection.
- 2) "Pd" indicates a pending DTC when viewing DTCs.
- "\$" -identifies the control module number from which the data is retrieved.

#### 3.5 Vehicle Power

The power of the code reader is provided via the vehicle Data Link Connector (DLC). Follow the steps below to turn on the code reader:

1). Connect the OBDII cable to the code reader.

 Find DLC on vehicle. (A plastic DLC cover may be found for some vehicles and you will need to remove it before plugging in the OBDII cable.

3). Plug the OBDII cable into the vehicle's DLC as per the vehicle manufacturer's handbook.

## 3.6 Product Setup

The code reader allows you to make the following adjustments and settings.

- 1) Language: Selects desired language.
- 2) Unit of Measure: either UK imperial or metric.
- Contrast Adjustment: Adjusts the contrast on the LCD display. The settings of the unit will remain until change to the existing settings is made.

#### To enter the setup menu

From the second start-up screen, press the SCROLL button to enter the system setup menu. Follow the instructions to make adjustments and settings as described in the following setup options.



The number "x/x" to the upper right corner of the screen indicates the total number of items under the menu and sequence of the currently selected item.

-	System Setup
1)	Language
2)	Unit of measure
3)	Contract
4)	Exit

#### Language Setup

- English is the default language.
- From the System Setup menu, use the SCROLL button to select Language and press the ENTER/EXIT button.

	System Setup
1)	Language
2)	Unit of measure
3)	Contract
4)	Exit

 Use the SCROLL button to select the desired language and press ENTER/EXIT to save you selection and return to the previous menu.

Language
Deutsch
English Francais
Espaniol
Espanio

#### Unit of Measurement

- Metric is the default measurement unit.
- From System Start-up menu, use the SCROLL button to select the Unit of Measurement and press the ENTER/EXIT button.

	System Setup	
4		

- ) Language
- 2) Unit of measure
  - Contrast

) Exit



 From the Unit of Measure menu, use the SCROLL button to select the desired measurement.



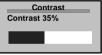
 Press the ENTER/EXIT button to save your selection and return to the previous menu.

#### Contrast Adjustment

 From the System Start-up menu, use the SCROLL button to select Contrast and press the ENTER/EXIT button.

System Setup	
1)	Language
2)	Unit of Measure
3)	Contrast
4)	Exit

From the CONTRAST menu, use the SCROLL button to adjust the contrast.



 Press the ENTER/EXIT button to save your settings and return to the previous menu.

#### Exiting System Setup

Use the SCROLL button to select EXIT and press ENTER / EXIT button to return to the start-up menu.

	System Setup
1)	Language
2)	Unit of Measure
3)	Contrast
4)	Exit



## 3.7 Vehicle Coverage

The CEOBD Code Reader is specially designed to work with all OBD II compliant vehicles, including those equipped with the next- generation protocol-Control Area Network (CAN).

A small number of 1994 and 1995 model year petrol powered vehicles are OBD II compliant. To verify if a 1994 or 1995 vehicle is OBD II compliant, check the Vehicle Emissions Control Information (VECI) label which is located under the bonnet or by the radiator of most vehicles. If the vehicle is OBD II compliant, the label will designate "OBD II Certified". Additionally, Government regulations mandate that all OBD II compliant vehicles must have a "common" sixteen-pin Data Link Connector (DLC). For your vehicle to be OBD II compliant it must have a 16-pin DLC (Data Link Connector) under the dash and the Vehicle Emission Control Information label must state that the vehicle is OBD II compliant.

## 4. OBD II DIAGNOSTICS

When more than one vehicle control module is detected by the scan tool, you will be prompted to select the module where the data may be retrieved. The most often to be elected are the Powertrain Control Module (PCM) and Transmission Control Module (TCM).

# CAUTION: Don't connect or disconnect any test equipment with the ignition on or the engine running.

- 1) Turn the ignition off.
- 2) Locate the vehicle's16-pin Data Link Connector (DLC).
- 3) Plug into the Scan Tool cable connector to the DLC.
- 4) Turn the engine on. Engine can be off or running.
- 5) Press ENTER/EXIT button to enter the Diagnostic menu. A sequence of messages displaying the OBDII protocols will be observed on the display until the vehicle protocol is detected. If the code reader fails to communicate with the vehicles ECU (Engine Control Unit), a "LINKING ERROR!" message shows up on the display.
- Verify that the ignition is ON. Check that the code reader's OBDII connector is securely connected to the vehicle's DLC.
- Verify that the vehicle is OBDII compliant: Turn the ignition off and wait for about 10 seconds. Turn the ignition back on and repeat the procedure from step 5.

If the "LINKING ERROR!" message does not disappear, there may be problems preventing the code reader communicating with the vehicle. Contact your local dealer for assistance.



 After the code reader successfully links to the ECU, the diagnostic menu will come up.

#### 4.1 System Status

 Use SCROLL button to select 'System Status' from the Diagnostic menu and press ENTER/EXIT button. The system status is displayed (MIL status, DTC counts & monitor status) according to the model of vehicle.

	Diagnostic Menu
1)	System Status
2)	Read Codes
3)	Erase Codes
4)	Live Data

2) View the System Status contents on the screen.

	System Status	
1)	Code Found	3
2)	Monitors N/A	4
3)	Monitors OK	2
4)	Monitor INC	2

4) Press the ENTER/EXIT button to return to the previous menu.

## 4.2 Reading Codes

1). Use the SCROLL button to select 'Read Codes' from the diagnostic menu and press the ENTER/EXIT button.

	Diagnostic Menu
1)	System Status
2)	Read Codes
3)	Erase Codes
4)	Live Data

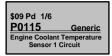
If more than one module is detected, you will be prompted to select a module before testing.

	Control Module
1)	Engine
2)	Module \$A4
3)	Exit

Use the SCROLL button to select a module and press the ENTER/EXIT button.



2) View DTCs and their definitions on screen.

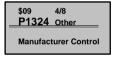


The control module number, sequence of the DTCs, total number of codes detected and type of codes (Generic or Manufacturer specific, Stored or Pending codes) will be observed on the upper right comer of the display.

 If more than one DTC is found, use the SCROLL button as necessary until all the codes have been shown up.

If no codes are detected, a "No codes are stored in the module!' message is displayed on the screen.

If retrieved DTCs contain any manufacturer specific or enhanced codes, the display indicates "Manufacturer Control".



4) Press the ENTER/EXIT button to return to the previous menu.

## 4.3 Erasing Codes

CAUTION: Erasing the Diagnostic Trouble Codes allows the Scan Tool to delete not only the codes from the vehicle's on-board computer, but also "Freeze Frame" data and manufacturer specific enhanced data. Also, the I/M Readiness Monitor Status for all vehicle monitors is reset to Not Ready or Not Complete status. Do not erase the codes before the system has been checked completely by a technician.

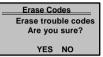
This function is performed with the key ON and engine off (KOEO). Do not start the engine.

 If you decide to erase the DTCs, use the SCROLL button to select the ERASE codes from the Diagnostics menu by pressing the ENTER/EXIT button.



	Diagnostic Menu
1)	System Status
2)	Read Codes
3)	Erase Codes
4)	Live Data

2) A warning message comes up asking for your confirmation.



 If you do not want to proceed with erasing the codes, press the ENTER/EXIT button to erase.

If the codes are cleared successfully, an "ERASE DONE" message will show on the display. If the codes are not cleared, "ERASE FAILURE" is displayed. The message, "TURN KEY ON WITH ENGINE OFF" message is displayed.

4) Wait a few seconds or press any key to return to the main diagnostic menu.

If you do wish to erase the codes, then press SCROLL button to select NO and press **ENTER/EXIT**. A command cancelled massage shows up.

Press any button to return to the diagnostic menu.

#### 4.4 Viewing Live Data

 To view live data use the SCROLL button to select View Live Data from Diagnostic Menu and press the ENTER/EXIT button.

	Diagnostic Menu
1)	System Status
1) 2) 3)	Read Codes
3)	Erase Codes
4)	Live Data

2) Wait a few seconds while the scan tool validates the PID map.

Live data Reading PID\_01 Please Wait-



3) View the PIDs on the screen. Use the SCROLL button for more PIDs on the next screen.

Live Data	
DTC_CNT 6	
FUELSYS1 0	
FUELSYS2	
LOAD_PCT(%)	0.0

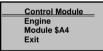
4) Press ENTER/EXIT button to return to the previous menu.

#### 4.5 Viewing Freeze Frame Data

 To view freeze frame, use the scroll button to select View Freeze Frame from the diagnostic menu and press the ENTER/EXIT button.

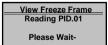
Diagnostic Menu
5) View Freeze Frame
6) I/M Readiness
7) Vehicle Info
8) Exit

If more than one module is detected, you will be prompted to select a module before testing.



Use the SCROLL button to select a module and press the  $\ensuremath{\mathsf{ENTER/EXIT}}$  button.

2) Wait a few seconds while the code reader validates the PID Map.



 If the retrieved information covers more than one screen, use the SCROLL button as necessary, until all data has been displayed.





The number "x/x" to the upper right-hand corner of the screen indicates total number of screens the retrieved frame covers and sequence of currently displayed data.

If there is no freeze frame data available, an advisory message "No Freeze Frame Data Stored!" shows on the display.

4) Press ENTER/EXIT to return to the Diagnostic menu.

## 4.6 Retrieving I/M Readiness Status

The I/M Readiness function is used to check the operations of the Emission System on OBDII compliant vehicles. It is an excellent function to use prior to having a vehicle inspected for compliance to a national emissions program. Some of the latest vehicle models may support two types of I/M Readiness tests.

A.-Since DTCs Cleared – indicates status of monitors since the beginning of the current drive cycle.

B.-This Drive Cycle – indicates status of monitors since the beginning of the current drive cycle.

An I/M Readiness Status result of "NO" does not necessarily indicate that the vehicle being tested will fail the state I/M inspection. For some states, one or more such monitors may be allowed to be "Not Ready" to pass the emissions inspection.

"OK"—indicates that a particular monitor being checked has completed its diagnostic testing;

"INC"—indicates a particular monitor being checked has not completed its diagnostic testing;

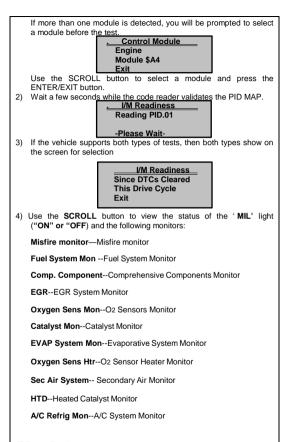
"N/A"-The monitor is not supported on that vehicle.

 Use the SCROLL button to select I/M Readiness from Diagnostics menu and press ENTER/EXIT

#### Diagnostic Menu

- 5) View Freeze Frame
- 6) I/M Readiness
- 7) Vehicle Info
- 8) Exit





# Clarke

#### Since DTCs Cleared MIL Status OFF Misfire Monitor OK Fuel System Mon. OK Comp. Component OK

 If the vehicle supports readiness test of "This Drive Cycle", a screen of the following will be displayed:

> This Drive Cycle MIL Status ON Misfire Monitor OK Fuel System Mon. OK Comp. Component OK

The number "x/x" to the upper right-hand corner of the screen indicates the total number of screens the retrieved data cover and sequence of currently displayed data.

6) Press ENTER/EXIT button to return to the previous menu.

## 4.7 Viewing the VIN Number

The 'Vehicle Info' function allows retrieval of the Vehicle Identification No. (VIN), Calibration ID Nos, (CINs), Calibration Verification Nos (CVNs) and in-use Performance Tracking on y2000 and newer vehicles that support Mode 9.

 Use the SCROLL button to select Vehicle Info from the Diagnostic Menu and press the ENTER/EXIT button.

Diagnostic Menu
5) View Freeze Frame
6) I/M Readiness
7) Vehicle Info
8) Exit

2) Wait a few seconds or press ENTER/EXIT button to continue.

Vehicle Info Turn Key On With engine off! Press (Enter) to con.

If the vehicle does not support this mode, a "**The selected mode is not supported**!" message shows on the display.



If more than one module is detected, you will be prompted to select a module before test.

Control Module Engine Module \$A4 Exit

 Use the SCROLL button to select a module and press the ENTER/ EXIT button. Wait a few seconds while the code reader selects the vehicle information.

> Vehicle Info Reading Info -Please Wait-

 From the Vehicle Info menu, use SCROLL button to select an available item to view and press ENTER/EXIT button.

> Vehicle Info Vehicle ID Number Calibration ID Cal. Verif. Number Exit

5) View retrieved vehicle information on the screen.

Vehicle Info VIN: 2HGES16684H907941

6) Press ENTER/EXIT to return to previous menu.

## 4.8 Exiting the OBDII Test

 To exit the OBDII test, use the SCROLL button to select EXIT from the Diagnostic Menu and press the ENTER/EXIT button.

> Diagnostic Menu 5) View Freeze Frame 6) I/M Readiness 7) Vehicle Info 8) Exit



2) A warning message appears, requesting confirmation.



 If you want to exit the OBDII test, use the SCROLL button to select 'NO', and press the ENTER/EXIT button to return.

## 5 Software Updates

#### 5.1 Software Downloads

Occasionally new software and DTC library information is made available for download. It is possible to update the code reader software and DTC library information via a computer.

To perform the update you will need:

- The CEOBDS Code Reader
- A PC or laptop with USB ports
- A USB cable

Full information and any available upgrades with detailed instructions can be downloaded from www.clarkeinternational.com

## ENVIRONMENTAL RECYCLING POLICY



Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.



# 6. Declaration of Conformity

Œ	Clarke
	INTERNATIONAL Nemnall Street, Epping, Essex CM16 4LG
This is	DECLARATION OF CONFORMITY an important document and should be retained.
We hereby declare that this	s product(s) complies with the following directive(s):
	tromagnetic Compatibility Directive.
2011/65/EU Res	triction of Hazardous substances.
	ive been applied to the product(s): 1000-3-2 2006 +A1:2009 +A2:2009, EN 55024:2010, EN 61000-3-3:2008.
	n required to demonstrate that the product(s) meet(s) the requirement(s) of has been compiled and is available for inspection by the relevant enforcem
	The CE mark was first applied in: 2010
Product Description:	OBDII / EOBD Fault code scanner
Model number(s):	CEOBDS
Serial / batch Number: Date of issue:	N/A 31/10/12
	.0.60
Signed:	Alate-
	J.A. Clarke Director
	C Page I of I



