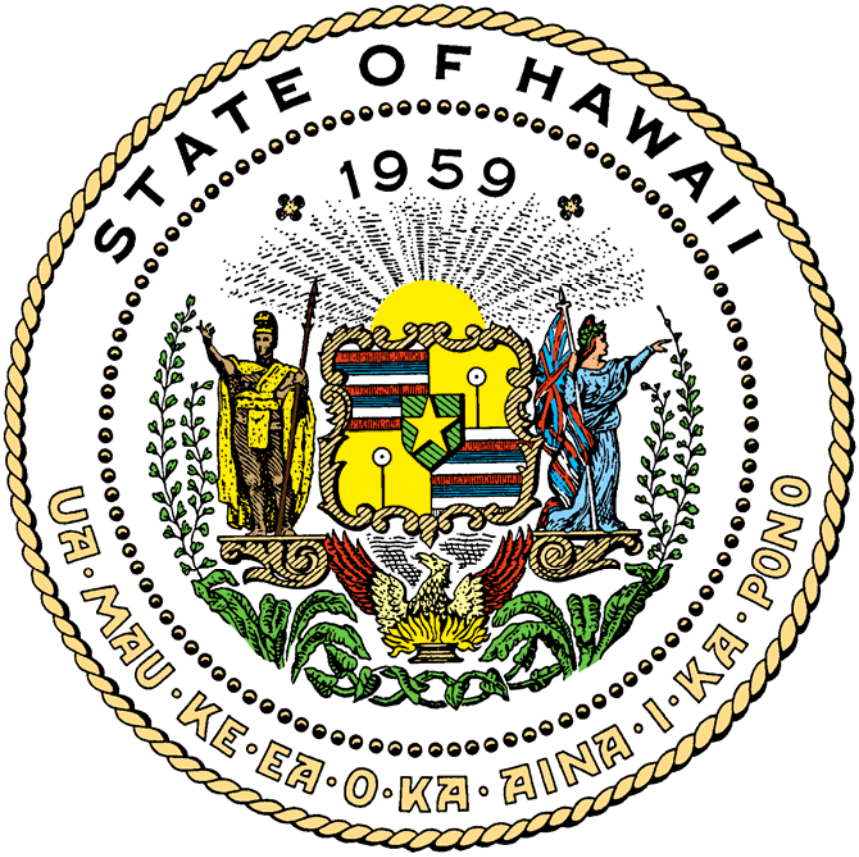

XEROX 9790 LASER PRINTER

December 2003

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Department of Accounting and General Services
Information and Communication Services Division
Information Technology Standards

1 INTRODUCTION

The Department of Accounting and General Services, through its Information and Communication Services Division (ICSD), is responsible for providing functional and operational control over all data processing equipment in the State of Hawaii Executive Branch of government, and for providing technical leadership in the field of data processing and information technologies.

Laser printing allows the Hawaii State Government to produce high-speed, high-quality printed output on standard 8-1/2" x 11" cut sheets. Printed output on the front and back of each sheet can result in significant savings in paper costs and will decrease the space requirements for the storage of reports.

The ability to produce special forms electronically results in decreases in special forms printing costs and cost savings due to the reduction of forms obsolescence. Since all forms produced are originals, no decollation or bursting is required which reduces the time to prepare the outputs for distribution to the users.

1.1 Background

Hereafter, the phrase “Xerox 9790 Electronic Printing System” is referred to as “the Laser” or "Laser." The Laser is available for jobs printed on the State’s mainframe computer. Job processing is done by the ICSD Production Services Branch (PSB). The Laser form formats and layouts presented in this document are necessary to effectively use the State’s Laser.

1.2 Applicability

The procedures, conventions and guidelines developed in this document must be followed by employees of the Executive Branch of State Government, consultants, or contractors of the State who will be turning over the submission, processing, and control of application production jobs that use the laser printer.

All documentation, resources, and materials related to or required for processing applications at the ICSD, are strictly prohibited from leaving the State’s premises unless appropriate authorization has been received.

1.3 Purpose

The intent of this document is to enable users of the State's Laser to:

- Understand the capabilities and limitations of the laser printer.
- Assist users in defining their reporting requirements.
- Complete and submit laser printing requests.
- Make appropriate annotations to production documentation.

1.4 Scope

This document is intended to provide readers with the information necessary to request that reports be produced on the Laser. The requestor must coordinate laser printing requirements with the ICSD Laser Project. The ICSD Laser Project will:

- Create forms on the Laser based on the layout sketches provided by the requestor.
- Generate reports and/or forms on the Laser.
- Inform the user of the required Job Control Language changes.

Failure to follow the procedures and standards established in this document may result in delays and/or denial of requests.

1.5 Comments and Suggestions

Any State of Hawaii Information Technology Standards document, reference manual or users guide mentioned in this document are available through the departmental user agency data processing coordinator (DP Coordinator). Standards are also accessible on-line by clicking on Information Technology Standards on the ICSD home page at:

http://www.hawaii.gov/icsd/

Statewide Forms are accessible on-line by clicking on Forms Central on the Government in Hawaii home page at:

http://www.ehawaiigov.org/government/html/

Comments, recommendations, proposals, or suggestions regarding the contents of this document may be sent either via email to icsd.admin.ppmo@hawaii.gov or in writing to:

Information and Communication Services Division
Project Planning and Management Office
1151 Punchbowl Street, B-10
Honolulu, Hawaii 96813-3024

2 GENERAL INFORMATION

The Laser is a versatile, general-purpose printing system, which may be used to process and print data and information.

The Laser has high-performance operating characteristics. This is achieved by the effective combination and use of:

- xerographics
- laser technology
- computer technologies to control the flow of digital data
- pre-cut, standard size (8-1/2" x 11") and special paper stock

In the laser printing process, images are created by a laser beam, which scans an electronically charged photoreceptor belt. Images are formed according to digital instructions and pre-defined electronic dot patterns when the laser beam is temporarily interrupted as it scans across the belt. The low-power, high-resolution laser creates images from 600 by 600 dot matrices for a density of 360,000 dots per square-inch, thus ensuring precise imaging and clarity of the smallest and the largest image.

3 LASER PRINTING SYSTEM CAPABILITIES

The Laser has numerous print format capabilities. The more commonly used capabilities are described below.

3.1 Print Mode

The print MODE is the ability to print on one or both sides of a sheet of paper. A hardware feature on the Laser allows printing on both sides of a sheet of paper. This feature can significantly reduce paper cost.

3.1.1 Duplex Mode

Duplex mode refers to printing that occurs on both sides of a sheet of paper, i.e. both the front side and the backside contain print. Duplex mode is the standard for laser-printed output.

3.1.2 Simplex Mode

Simplex mode refers to printing that occurs only on one side of a sheet of paper, i.e. the front side contains print. The backside does not.

Because simplex mode is not the standard, if it required, attach a written justification and submit with form ICSD-145 Specifications for Xerox Electronic Printing System (Laser). The form and instructions are available via the Internet at State of Hawaii Forms Central, under Information and Communication Services. The URL is: http://www.hawaii.gov/forms/

3.2 Print Font Orientation

The print font orientation allows the printed characters to appear either widthwise or lengthwise on an 8-1/2" x 11" cut sheet of paper.

3.2.1 Landscape Orientation

Landscape orientation refers to the printed characters that appear widthwise on a sheet of paper, i.e. width = 11” ; height = 8.5”

3.2.2 Portrait Orientation

Portrait orientation refers to the printed characters that appear lengthwise on a sheet of paper, i.e. width = 8.5” ; height = 11”

3.3 Page Presentation

The Laser allows for the printing of one or two logical pages to be presented on one side of a physical page. This can be done in either portrait or landscape orientation, with simplex or duplex mode.

A logical page is the equivalent of one page of information printed on an IBM mainframe line printer.

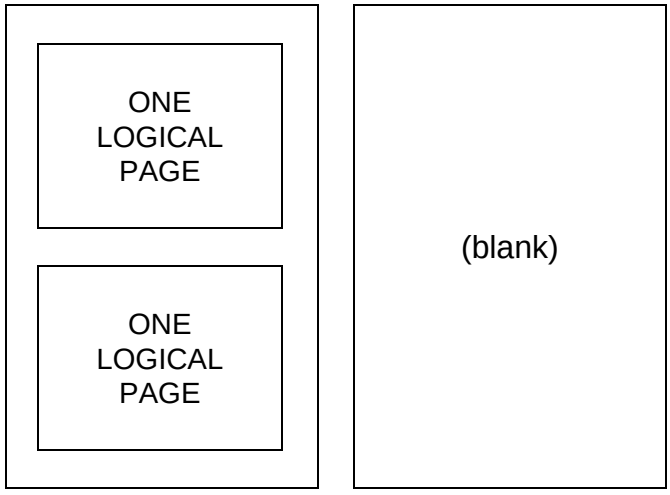
The logical page can display up to 66 lines per page, 132 characters per line.

3.3.1 One-Up Presentation

One-up presentation refers to the printing of one logical page on one side of a sheet of paper.

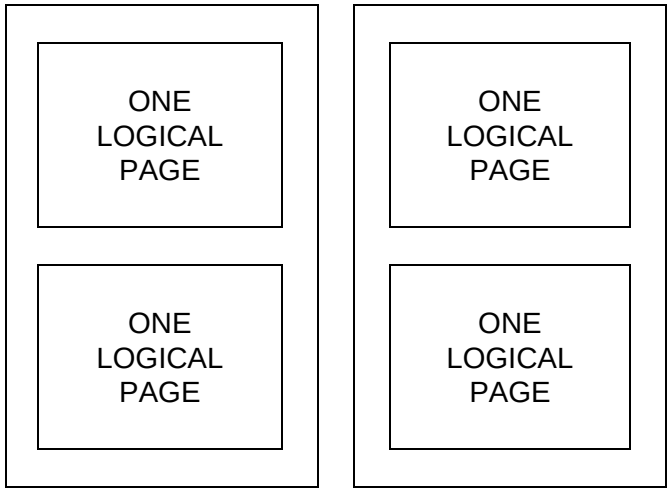
3.3.2 Two-Up Presentation – Simplex Mode

Two-up presentation refers to the printing of two logical pages on one side of a sheet of paper.



3.3.3 Two-Up Presentation – Duplex Mode

Two-up presentation that is used in conjunction with duplex mode is called quadraplex. Quadraplex is the most cost-effective method of printing on the Laser.



3.4 Multiple Number of Copies With or Without Collating

The Laser can produce up to 32,767 copies of a report or document. For simplex printing, the user has the option of collating or not collating the output. For duplex printing, the Laser automatically collates all copies.

3.5 Paper Size

The Laser uses standard 8-1/2" x 11" cut sheets of paper stock.

3.6 Paper Type

The Laser can use a wide range of paper types, such as multicolored paper, 3-hole drilled paper, perforated paper, pre-printed paper, or plain paper.

3.7 Paper Weight

The Laser can be used to print on a large variety of paper weights, ranging from lightweight 16-pound bond, to heavyweight 110-pound card stock.

3.8 Page Breaking

Page breaking allows the user to determine on which side of the sheet of paper a logical page will appear whenever a pre-determined condition occurs.

The pre-determined page breaking condition is defined by the user who identifies the unique characteristics of the report. The controlled break will determine when the page break should occur.

The Laser will be programmed by the ICSD Laser Project to recognize this pre-determined. There are four side options associated with the page break command.

a. The "NUFRONT" option will cause the specified logical page to be positioned as the first logical page on a new sheet of paper.

b. The "BACK" option will cause the specified logical page to be positioned as the first logical page on the next available back.

c. The "NUBACK" option will cause the specified logical page to be positioned as the first logical page on the back of a new sheet of paper.

d. The "NEXT" option will cause the specified page to be positioned as the first logical page on the next available side, either the back of the current sheet of paper or the front of the next sheet of paper.

NOTE: The Laser cannot handle on-line report requests developed by the COBOL Report Writer when a pre-determined condition occurs on the first line of a logical page.

COBOL for MVS is the State's preferred COBOL compiler. It does not support the Report Writer feature. Therefore, application programs should not use Report Writer.

3.9 Use of Multiple Character Sets Per Page

Several character sets (fonts) can be selected on a "character-to-character" basis on a page.

There are 270 character sets presently available on the Laser, but only a maximum of 16 character sets can be used in one report.

The ICSD Reference Library has the Xerox EPS Fonts manual, which contains a description of all of the character sets currently available on the Laser. Any user agency may borrow this manual.

Special character sets, not currently on the Laser, are available. For more

information, contact the ICSD Laser Project.

3.10 Magnetic Ink Character Recognition

Magnetic Ink Character Recognition (MICR) font printing uses distinct character sets (fonts) and magnetic ink to print machine-readable information. The primary use of MICR is for the printing of bank checks.

4 PRINTER AVAILABILITY

The Laser is available and operational 24 hours per day, 7 days per week, including holidays.

5 REQUEST SPECIAL LASER PRINT JOB

The steps a user is to follow to request a laser print job in either production or test are:

a. Complete ICSD-101, S/1 Request. The form and instructions are available via the Internet at State of Hawaii Forms Central, under Information and Communication Services. The URL is: http://www.hawaii.gov/forms/

b. Complete ICSD-145, Specifications for Xerox Electronic Printing System (Laser), also available at Forms Central.

c. Provide samples of special print page layouts, i.e., report layout, pre-printed text on forms, and attach them to the ICSD-145 and ICSD-101 forms.

d. Make two copies of the above documents.

e. Send the original and one copy to DAGS/ICSD/CSB, Keoni Ana Building, ATTN: ICSD Laser Project. The second copy is for the requestor's files.

f. Receive notification of the date of availability of the Laser Print Page. After the ICSD Laser Project reviews the ICSD-101 S/1 Request and completes the ICSD-145, a copy of ICSD-145 is sent back to the requestor with the date.

NOTE: A job that is expected to generate over 200,000 lines must be scheduled with the ICSD PSB Computer Operations Scheduler; and must follow procedures in the Statewide IT Standard 07.05, Production Job Documentation Standards.

6 PRINTING JCL LISTINGS

The following steps are required to print JCL listings on the Laser:

a. On the job statement line, use either “MSGCLASS=E” or “MSGCLASS=Q”.

MSGCLASS=E, will cause the JES2, JCL, and standard SYSOUT listings to be printed on pre-punched 3-hole paper, landscape print orientation (11" x 8.5"), duplex mode (two-sided), one-up (one page per side), with gray bars and a border frame.

MSGCLASS=Q, will cause the JES2, JCL, and standard SYSOUT listings to be printed on pre-punched 3-hole paper, portrait print orientation (8.5" x 11"), duplex mode (two-sided), two-up (two pages per side), with gray bars and a border frame.

b. All appropriate SYSOUT parameter for data definition statements (i.e., for SYSPRINT, SYSDBOUT, SORTMSGE) must be “SYSOUT=*”, “SYSOUT=Q”, or “SYSOUT=E” for the output to be printed as part of the JCL.

NOTE: SYSOUT equal to an asterisk "*" will cause a default printer specification to be assigned, which is the value from the “MSGCLASS” parameter.

c. Change the report SYSOUT statements only if the report is to be printed as part of the JCL.

d. If cataloged procedures are used, verify that the necessary changes are specified for each of the “SYSOUT” parameter statements.

7 ON-LINE PRINT JOBS

On-line print jobs are jobs that are executed on the State’s mainframe computer in real-time. Their generated reports are routed to the Laser for batched printing.

On-line Laser print jobs require less manpower than non-Laser print jobs because less computer operator intervention is required.

Off-line Laser print jobs are not available at the ICSD Central Computer Site.

7.1 On-line Production Jobs

All on-line print production jobs must be documented according to instructions in the Statewide IT Standard 07.05, Production Job Documentation Standards.

Form SDM-1895, SDM/Structured Job Instructions, is available on-line at State of Hawaii Forms Central under Information and Communication Services.
The URL is: http://www.hawaii.gov/forms/

Place the Laser internal form number that was assigned by the ICSD Laser Project on SDM-1895, Item 16, OUTPUT FROM COMPUTER SECTION under the column heading FORM NO.

7.2 On-line Test Jobs

All on-line print jobs must include the following information in the "SYSOUT" definition:

a. Print Class Codes:

G = White paper stock, 3-hole paper, simplex.

H = White paper stock, 3-hole paper, duplex.

X = White paper stock, no-hole paper, simplex or duplex.

F = Special paper stock with ICSD assigned number.

b. Laser Internal Form Numbers:

The ICSD Laser Project will assign laser internal form numbers.

The assigned form number will be written on the copy of the ICSD-145 form that was sent back to the requestor. This form number is for the Laser's use only.

Example:

```
//RPT1    DD    SYSOUT=(#,,****),FCB=6
```

\# - Print Class Code
**** - Laser Internal Form Number

c. JCL Conversions:

To produce reports printed on the pre-punched 3-hole paper, landscape orientation (11" x 8-1/2"), duplex mode (two-sided), one-up (one page per side), with gray bars and a frame, use the following:

IBM Form No.	Laser Form No.
SYSOUT=(C,,9001)	SYSOUT=(H,,W2L1),FCB=6
SYSOUT=(C,,9002)	SYSOUT=(H,,W2L2),FCB=6
SYSOUT=(C,,9003)	SYSOUT=(H,,W2L3),FCB=6
SYSOUT=(C,,9004)	SYSOUT=(H,,W2L4),FCB=6
SYSOUT=(C,,9005)	SYSOUT=(H,,W2L5),FCB=6

To produce reports printed on pre-punched 3-hole paper, portrait orientation (8-1/2" x 11"), duplex mode (two-sided), two-up (two pages per side), gray bars and a frame, use the following:

IBM Form No.	Laser Form No.
SYSOUT=(C,,9001)	SYSOUT=(H,,W4P1),FCB=6
SYSOUT=(C,,9002)	SYSOUT=(H,,W4P2),FCB=6
SYSOUT=(C,,9003)	SYSOUT=(H,,W4P3),FCB=6
SYSOUT=(C,,9004)	SYSOUT=(H,,W4P4),FCB=6
SYSOUT=(C,,9005)	SYSOUT=(H,,W4P5),FCB=6

8 ROUTING OUTPUT

8.1 Test Jobs

Printout for all test jobs is routed to the individual whose name appears in the programmer's name field on the job statement line. The programmer's name field should be descriptive. It is limited to 20 characters.

Programmer's Name Field:

FORMAT	EXAMPLE
TSO.bldg.dept.name	'TSO.LILI.DOE.KIMO'
name.dept.RJE	'KIMO ALOHA.B&F.RJE'
name.POUCH	'KIMO ALOHA.POUCH'

8.2 Production Jobs

The printout for all production jobs will be routed back to the office or person specified on the Job Instructions form (SDM-1895) that is in the job's production operation's documentation.

9 SPECIAL PAPER STOCK

The user agency liaison must coordinate any requests to use special paper with the ICSD Laser Project Manager.

Special paper stock refers to any standard size (i.e. 8-1/2" x 11") paper stock that is not Plain White or not 3-Hole White Drilled paper. It also refers to all paper stock that is non-standard size (i.e. 8-1/2" x 14" or other sizes). The Laser can accommodate various non-standard paper sizes, however such requests require additional coordination with the Laser Project Manager and special handling by ICSD PSB.

ICSD Laser Project Manager assigns a special paper codes to a request, notifies ICSD PSB Scheduling and Control Unit, and informs the user agency liaison what code was assigned for the special paper request.

The requestor uses the assigned special paper code in the same way that the Laser Internal Form Number is used in the JCL "SYSOUT" data definition (DD) statements.

Applications designed for production processing by ICSD PSB must follow the Statewide IT Standard 07.05, Production Job Documentation Standards.