IOWA STATE HIGHWAY COMMISSION

DATA PROCESSING
SYSTEMS MANUAL

COMMUNICATION
SYSTEM

FOR BETTER HIGHWAYS

COMMUNICATION SYSTEM

Employing The
IBM 370
Computer System

Developed For
Materials Department
Iowa State Highway Commission

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INTRODUCTION

The Communication System was developed for the Iowa State
Highway Commission Materials Department to unitlize the
computer terminal system to speed up transmission of the
various material test reports that flow between the central
office and the six district offices. Letters may be sent
from one corner of the state to the other and received in
seconds instead of days going by mail.

Programs in the system run under the Time Sharing Option
(TSO) of the IBM-370 VS2 Operating System. TSO drives the
IBM 2741 terminals over dedicated telegraph grade telephone
lines. The 2741 terminals receive and type reports at an
average rate of twenty-five per hour.

Three separate data files on the IBM 3330 disk unit are
utilized to handle the reports processed by the system. Re-
ports sent from one location to another are stored in the
data files until the receiving point is ready to receive them.

I.   Communications Update (COMUPD)

The Communications Update Program is used to send
reports from one terminal location to another.

The program is activated by entering "COMUPD" on
the terminal. The program will ask for the user's
district number. The sender's district number should
be entered. The Construction Department, Right of
Way, and Ames Lab which are located in the Central
Office should enter "7" as their district identifica-
tion.

The program will ask for the destination district
number. The identification number of the district
the report is being sent to, should be entered. En-
ter a "7" if the report is to be sent to the Construc-
tion Department, Right of Way, or the Ames Lab which
are located in the Central Office. A "9" should be
entered if the report is to be sent to all six districts.

The request for the form number should be followed
by the user entering the three digit number that ident-
ifies the form being used. All three digits must be
entered. If a second page is required for a letter,
form 021, the user may want to use a blank form which
is form number 022. Enough identification should be
entered on the second page to relate it to the first
page of the letter. When the letter is received at
the destination terminal, there may be several reports
received between the first and second page of the
letter.

After the form number has been entered, the program
will instruct the user to start entering data. The
data lines for the report may be entered at this time.
Each data line entered must have a five digit identi-
fication number. The number is typed and immediately
followed by the data. The identification numbers are
used by the programs in arranging the data when it is
typed on the receiving terminal.

If an error is made and discovered befor hitting the
carriage return, backspace to the point of the error,
correct it, and finish typing the line. Errors that
are discovered after hitting the carriage return may
be corrected by entering the five digit identifica-
tion number and retyping the line.

II.   Communications Report (COMRPT)

The Communications Report Program is used to receive
reports at the destination terminal.

The program is activated by entering "COMRPT" on the
terminal. The program will ask for the user's district
identification number. The district number should be
entered by the user. The Ames Lab should enter a "7"
to receive reports sent to the Lab, Construction De-
partment, and Right of Way.

The program will request the user to verify the district
number to make sure the correct number was entered.
If the wrong number was entered the user should indicate
by entering the word "NO". The program will give the
user another chance to enter the correct district number.
If the number is correct, the user should enter the word
"YES". The program will instruct the user to advance
the paper manually to the last line of the current sheet
and to hit the carrriage return to signal the program
that the terminal is ready to start receiving reports.

All reports stored in the computer for the district
will be typed on the receiving terminal. The program
will type sixty-six lines per page. A blank line will
cause one blank character to be typed and the carriage
to be advanced one line. The program will automatically
terminate after the last report is typed.

If it is desired to terminate the program, prior to
letting it complete on its own, due to the ribbon break-
ing, running out of paper, or a request by someone big-
ger than you to get off the terminal, it may be done
by pressing the attention key. This will cause the pro-
gram to end immediately and the terminal to return to
the ready status. The report that was being typed will
not be lost. The program will retype the report when
it is reactivated at a later time. When using this
method of terminating the program it should be done
during the typing of the top half of a report.

After all errors have been corrected the report may
be sent by entering the word "END". This will cause
the report to be sent to the destination district and
a copy to your district identification number. The
program will ask for a destination district number
indicating that it is ready to send another report.
The user has the option of either sending another re-
port or entering the word "END" to end the program.

The user no longer has control of the report after
sending it to its destination. If there is an error
in the report, a corrected report should be sent to
the destination terminal.

The five digit identification numbers are composed of
line number and type position number. The first (left
most) two digits is the line number and the last three
is the first type position, on the line, that the data
entered will appear when the report is received.

III.   Communication Monitor (COMMON)

The Communication Monitor Program is used to scan the Communication System's data files and report the number of reports currently stored for each district and the Ames Lab.

The program is activated by entering the word "COMMON" on the terminal. No further user response is necessary for this program.

IV.   Communication Form (COMFRM)

The Communication Form Program is used to add form data
to the Communication Form file and to change existing
form data.

The program is activated by entering "COMFRM" on the
terminal. The program will ask the user for the form
number that identifies the form. All three digits must
be entered. The program will instruct the user to
start entering data after the form number has been en-
tered.

The form data may be listed on the terminal by entering
the word "LIST". This will show the five digit identi-
fication number followed by the data for each entry on
the form. When adding a new form to the system, the
list option should be run to insure against destroying
a good form by accident.

The entire form record may be blanked out by entering
the word "NEW". This indicates to the program that
all data contained in the form record is to be cleared.

An existing form may be changed by either adding new
lines of data or changing the existing data lines.
Existing data lines may be changed by entering the five
digit identification number and typing the entire line.

After all changes have been made to the form, the form
record should be returned to the form record file by
entering the word "END". The program will place the
form record in the form file and ask the user for another
form number. At this point the user may either enter
another form number or a "/*" to end the program.

Refer to the Communication Update Program for the ex-
planation of the five digit identification number.

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IKJ54012A ENTER LOGON -
logon shafer/ ksh632 p(cob3)
SHAFER LOGON IN PROGRESS AT 12:32:58 ON DECEMBER 5, 1974
NO BROADCAST MESSAGES
READY
comupd
*** ENTER YOUR DISTRICT NUMBER
7
*** ENTER DESTINATION DISTRICT NUMBER OR END
7
*** ENTER FORM NUMBER
021
*** ENTER LINE OF DATA OR END
07011data processing
09011k. l. shafer
11011k. shafer
13011data procsssing
14011systems section
15011sample letter
07055december 5, 1974
25016this is a sample letter
25016this is a sample of a report that can be sent from one district
26011to another via the computer terminal system.
28016the time needed to transmit the letter from one point to the
29011other is reduced to minutes compared to days required by the
30011mail system.
62011kls/ ks
29011other is reduced to minutes compared to several days required by the
end
*** ENTER DESTINATION DISTRICT NUMBER OR END
end
*** P412540 - COMMUNICATION UPDATE ENDED ***

READY
common
*** BEGIN P412550 COMMUNICATION MONITOR ***
        COMMUNICATION MONITOR
        NUMBER OF REPORTS AVAILABLE FOR PRINTING
        DIST 1     DIST 2     DIST 3     DIST 4     DIST 5     DIST 6     AMES
                   1          2                     4                     3
*** P412550 COMMUNICATION MONITOR COMPLETE ***

READY
logon shafer/ kshkk32 p(cob3) nom non
SHAFER LOGGED OFF TSO AT 12:42:57 ON DECEMBER 5, 1974+
SHAFER LOGON IN PROGRESS AT 12:42:58 ON DECEMBER 5, 1974
READY
comrpt
*** ENTER DISTRICT NUMBER
7
*** IS 7 THE CORRECT DISTRICT? (ANSWER YES OR NO)
yes
*** ADVANCE PAPER TO THE LAST LINE OF THE CURRENT PAGE, THEN PRESS THE RETURN KEY
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IOWA STATE HIGHWAY COMMISSION

ᵗO DEPT.   DATA PROCESSING

DATE DECEMBER 5, 1974

 TTENTION K. L. SHAFER

REFER TO:

FROM   K. SHAFER

 EPT.   DATA PROCSSSING
           SYSTEMS SECTION

ᶜUBJECT   SAMPLE LETTER

THIS IS A SAMPLE OF A REPORT THAT CAN BE SENT FROM ONE DISTRICT TO ANOTHER VIA THE COMPUTER TERMINAL SYSTEM.

THE TIME NEEDED TO TRANSMIT THE LETTER FROM ONE POINT TO THE OTHER IS REDUCED TO MINUTES COMPARED TO SEVERAL DAYS REQUIRED BY THE MAIL SYSTEM.

KLS/KS

IOWA STATE HIGHWAY COMMISSION

TO DEPT.   DATA PROCESSING   DATE DECEMBER 5, 1974

ATTENTION K. L. SHAFER   REFER TO:

FROM   K. SHAFER

DEPT.   DATA PROCSSSING
           SYSTEMS SECTION
SUBJECT   SAMPLE LETTER

     THIS IS A SAMPLE OF A REPORT THAT CAN BE SENT FROM ONE DISTRICT
TO ANOTHER VIA THE COMPUTER TERMINAL SYSTEM.

     THE TIME NEEDED TO TRANSMIT THE LETTER FROM ONE POINT TO THE
OTHER IS REDUCED TO MINUTES COMPARED TO SEVERAL DAYS REQUIRED BY THE
MAIL SYSTEM.

KLS/ KS

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*** NO MORE REPORTS

READY
comfrm
ENTER FORM NUMBER
025
ENTER LINE-DATA
list
04026IOWA DEPARTMENT OF TRANSPORTATION
07001TO DEPT.
07050DATE
09001ATTENTION
09050REFER TO
11001FROM
13001DEPT.
15001SUBJECT
ENTER LINE-DATA
0536ames, iowa 50010
INVALID PRINT POSITION; REENTER LINE DATA
05036ames, iowa 50010
list
04026IOWA DEPARTMENT OF TRANSPORTATION
07001TO DEPT.
07050DATE
09001ATTENTION
09050REFER TO
11001FROM
13001DEPT.
15001SUBJECT
05036AMES, IOWA 50010
ENTER LINE-DATA
05036
list
04026IOWA DEPARTMENT OF TRANSPORTATION
07001TO DEPT.
07050DATE
09001ATTENTION
09050REFER TO
11001FROM
13001DEPT.
15001SUBJECT
05036
ENTER LINE-DATA
end
ENTER FORM NUMBER
/*
*** C412520 COMPLETED ***

READY
logoff
SHAFER LOGGED OFF TSO AT 12:51:31 ON DECEMBER 5, 1974+
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